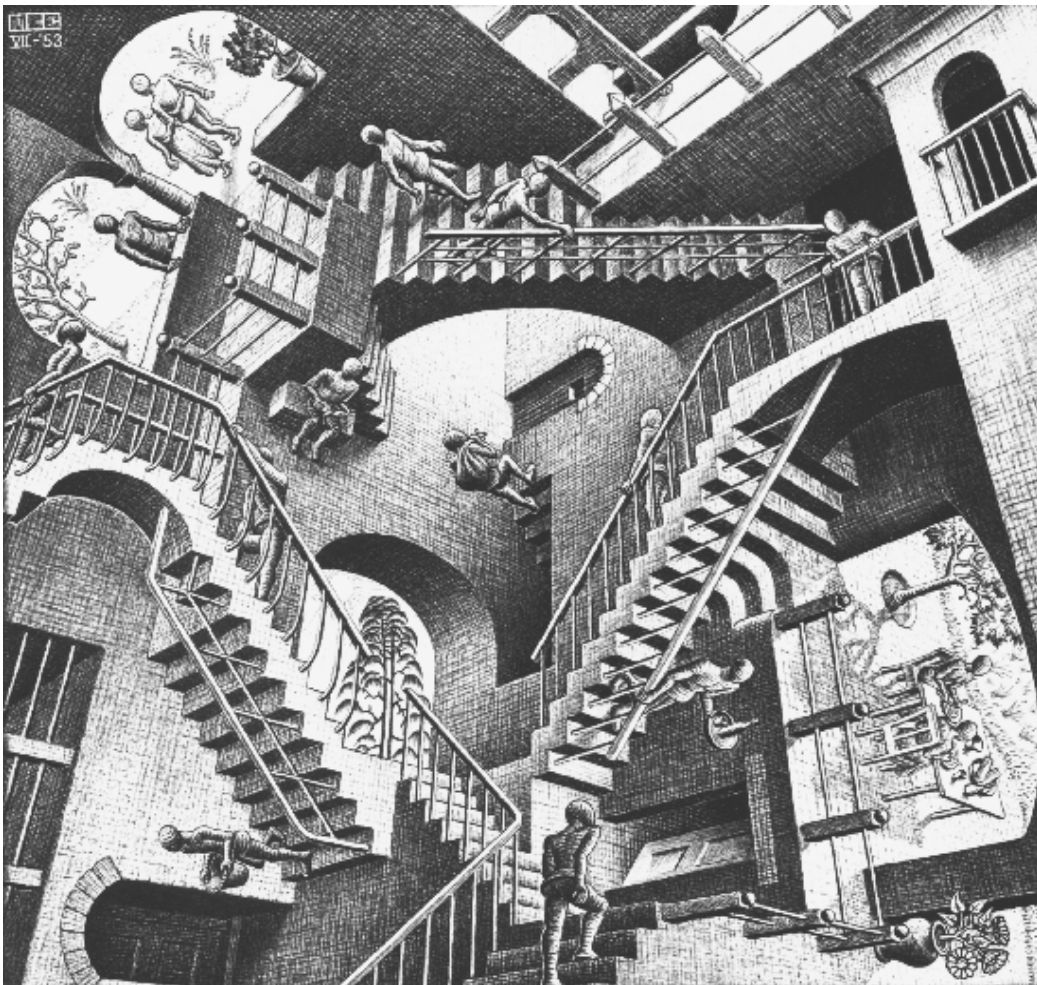


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# The Psychosocial Dynamics of Public Participation: A Systemic Analysis

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Cover image: *Relativity* (M.C. Escher, 1953).

The choice of image on the cover page is motivated by two considerations. First, it depicts a scene in which three sets of individuals live in close proximity to one another, yet inhabit different worlds. Consider the man in the middle of the picture, who is ascending the stairs from the cellar with a sack of coal on his back. The floor on which he sets his right foot is a wall for the man coming down the stairs to his right, and the wall to his left is a floor to the seated man with the book. In the same way, people who are involved in public participation processes sometimes inhabit different symbolic worlds – and one of the great challenges of the field is to find ways of bridging and reconciling these worlds.

The second reason why this image was chosen is because the theoretical models presented in this thesis often describe the same phenomena from different vantage points. None of these models can claim to be more correct than any other, as every one of them contributes a valid insight into the complexity of public participation. In this sense, the methodological approach of the thesis echoes the theme of Escher's woodcut, in which there is no single "correct" definition of up or down.

## Summary

Public participation is a collective term for a variety of procedures aimed at involving stakeholders and ordinary people in decisions that may affect them. It presents numerous advantages over traditional, "top-down" forms of decision-making. For instance, it helps to enhance the legitimacy and efficiency of decisions, and it serves as an affirmation of collective social values. Consequently, it is playing an increasingly important role in many democratic societies.

The ascendance of public participation on the international political stage has provided the impetus for a number of scientific studies. Most of these studies view public participation at a *macro level*; they focus on the criteria against which successful public involvement processes should be measured, the institutional arrangements and legal framework needed to achieve such success, etc. By contrast, relatively few studies have adopted a *micro-level* approach to public participation. Such an approach would entail concentrating on its *psychosocial dynamics* – in other words, on the behaviour and experience of individual participants, the relationships that form between individuals, the manner in which these shape deliberation and decision-making, etc.

This neglect of micro-level studies is regarded as a significant imbalance in the current state of the discipline, since public participation is, in the final analysis, a variety of interaction between *people* – and people are subject to psychosocial phenomena such as cognitive heuristics, group dynamics, etc. The aim of the study was therefore to address this imbalance. It took the form of an *integrative literature review* encompassing publications in the fields of psychology and public participation. Its objectives were (a) to develop a theory of the psychosocial dynamics of public participation; (b) on the basis of this theory, to identify ways in which the effectiveness of public involvement processes might be enhanced; and (c) to propose avenues for future research in the field.

It was recognised at the outset that such a study would be prone to *reductionism* – in other words, to the error of neglecting the macro-level characteristics of public

participation in favour of its micro-level dynamics. In order to avoid this error, *systems theory* was chosen as a meta-theoretical framework to guide the process of theory-building. Systems theory may be defined as the study of interrelationships between the properties of whole systems and the properties and organisation of their component elements. Hence, it provided a means of balancing the two perspectives, demonstrating how the micro-level aspects of a public participation process (such as the actions, motives and perceptions of individual participants) interact with macro-level variables (such as the cultural and socio-political milieu in which it is embedded) to shape its course and outcomes.

One of the tenets of systems theory is the notion that it is possible to compile more than one valid description of a system. Furthermore, additional insight into the system may be attained by comparing such descriptions with one another. Following this approach, five alternative models of public participation were constructed. The first three models depict the macro-level characteristics of public participation. These set the stage for the remaining two models, which encompass both its macro- and micro-level dynamics.

## Keywords

Economics of flexibility

Fairness and competence

Gregory Bateson

Group decision-making

Levels of description

Logical types

Psychosocial dynamics

Public participation

Reality tree

Systems theory

# Table of Contents

CHAPTER 1: Introduction .....	1
1.1 WHAT IS PUBLIC PARTICIPATION? .....	1
1.2 OBJECTIVES OF THIS STUDY .....	3
1.2.1 <i>The interdependence and autonomy of scientific disciplines</i> .....	3
1.2.2 <i>Reductionism and its inverse</i> .....	4
1.2.3 <i>The case of public participation and psychology</i> .....	6
1.3 WHY A SYSTEMS THEORETICAL PERSPECTIVE? .....	7
CHAPTER 2: Methodology.....	9
2.1 PRELIMINARY LITERATURE REVIEW: GUIDING ASSUMPTIONS IN PUBLIC PARTICIPATION .....	9
2.1.1 <i>Models of human behaviour in related fields</i> .....	10
2.1.2 <i>Evidence of the assumptions guiding public participation</i> .....	15
2.1.3 <i>Summing up the evidence</i> .....	16
2.2 DEVELOPING A MODEL OF THE PSYCHOSOCIAL DYNAMICS OF PUBLIC PARTICIPATION.....	16
2.2.1 <i>Alternative views of theory</i> .....	17
2.2.2 <i>Notions of theory in the systems sciences</i> .....	24
2.2.3 <i>Notions of theory in this study</i> .....	26
2.2.4 <i>Notions of theory in public participation</i> .....	27
2.2.5 <i>The process of theory-building</i> .....	28
2.2.6 <i>Theoretical models of public participation developed in this study</i> .....	28
2.3 APPLYING THE THEORY TO ADDRESS PRACTICAL PROBLEMS.....	29
2.4 THESIS OUTLINE .....	30
CHAPTER 3: Public Participation in Perspective.....	32
3.1 A HISTORY OF PUBLIC PARTICIPATION.....	32
3.1.1 <i>Prehistory</i> .....	32
3.1.2 <i>The advent of democracy</i> .....	33
3.1.3 <i>The Middle Ages</i> .....	33
3.1.4 <i>The Age of Enlightenment</i> .....	33
3.1.5 <i>The first public sphere</i> .....	34
3.1.6 <i>The swing towards representative democracy</i> .....	35
3.1.7 <i>The renewal of public participation</i> .....	35
3.1.8 <i>Public participation in the world today</i> .....	37
3.1.9 <i>The future of public participation</i> .....	38
3.2 BENEFITS OF PUBLIC PARTICIPATION.....	38
3.2.1 <i>Contributions of public participation to effective decision-making</i> .....	39
3.2.2 <i>Empowering functions of public participation</i> .....	40
3.2.3 <i>Philosophical questions related to the functions of public participation</i> .....	42
3.3 APPLICATIONS OF PUBLIC PARTICIPATION .....	45
3.4 PUBLIC PARTICIPATION MODELS AND TECHNIQUES .....	46
3.4.1 <i>The need for models and techniques</i> .....	46
3.4.2 <i>Distinguishing between participation models, techniques and processes</i> .....	47
3.4.3 <i>Examples of public participation models</i> .....	47

3.4.4	<i>Dimensions for characterising public participation models</i> .....	53
3.4.5	<i>Examples of public participation techniques</i> .....	61
3.5	PUBLIC PARTICIPATION IN SOUTH AFRICA .....	63
3.5.1	<i>The history of public participation in South Africa</i> .....	63
3.5.2	<i>Applications of public participation in South Africa</i> .....	66
3.5.3	<i>Challenges of public participation in South Africa</i> .....	68
3.6	THEORETICAL APPROACHES TO PUBLIC PARTICIPATION .....	69
3.6.1	<i>A ladder of participation</i> .....	70
3.6.2	<i>The Competing Values model</i> .....	71
3.6.3	<i>Arena theory</i> .....	73
3.6.4	<i>The problem of defining effective participation: a psychological analogy</i> ....	76
3.6.5	<i>Fairness and competence</i> .....	80
3.7	CONCLUDING THOUGHTS .....	86
CHAPTER 4: An overview of systems theory .....		87
4.1	BASIC CONCEPTS OF SYSTEMS THEORY .....	87
4.1.1	<i>History of systems theory</i> .....	89
4.1.2	<i>Maps and territories</i> .....	90
4.1.3	<i>What is a system?</i> .....	92
4.2	SYSTEMS AND VARIABLES.....	93
4.2.1	<i>Relationships among variables</i> .....	94
4.2.2	<i>“Reality trees”</i> .....	96
4.2.3	<i>Feedback loops</i> .....	98
4.3	LEVELS AND HIERARCHIES IN SYSTEMS .....	102
4.3.1	<i>Emergent properties and feedback loops</i> .....	102
4.3.2	<i>Logical types</i> .....	105
4.3.3	<i>Levels of description</i> .....	110
4.4	ECONOMICS OF FLEXIBILITY .....	120
4.4.1	<i>Exposure to sun and melanin production</i> .....	122
4.4.2	<i>The cardiovascular system and atmospheric pressure</i> .....	124
4.4.3	<i>Habit formation</i> .....	124
4.4.4	<i>Institutionalisation of successful solutions</i> .....	124
4.5	PHASE SPACE .....	125
4.6	VALID AND INVALID DESCRIPTIONS OF SYSTEMS.....	127
4.6.1	<i>Errors in logical typing</i> .....	128
4.6.2	<i>Beneficial errors in logical typing</i> .....	129
4.7	CONCLUSION .....	130
CHAPTER 5: An overview of psychological concepts.....		132
5.1	THE BIOLOGICAL LEVEL .....	133
5.2	THE INTRAPSYCHIC LEVEL.....	135
5.2.1	<i>Stable personal attributes</i> .....	136
5.2.2	<i>Information processing</i> .....	137
5.2.3	<i>Emotion</i> .....	140
5.2.4	<i>Learning</i> .....	142
5.2.5	<i>Attitudes</i> .....	147
5.2.6	<i>Theories of attitude formation and change</i> .....	149
5.2.7	<i>Determinants of behaviour</i> .....	152



5.3	THE INTERPERSONAL LEVEL .....	155
5.3.1	<i>Communication</i> .....	155
5.3.2	<i>Attribution</i> .....	157
5.3.3	<i>Interpersonal relationships</i> .....	158
5.3.4	<i>Persuasion</i> .....	163
5.3.5	<i>Power</i> .....	163
5.4	THE SOCIAL LEVEL .....	165
5.4.1	<i>Group dynamics</i> .....	165
5.4.2	<i>The effects of group dynamics</i> .....	168
5.4.3	<i>Social identity theory</i> .....	170
5.4.4	<i>Inter-group conflict</i> .....	171
5.4.5	<i>Culture</i> .....	173
5.5	CONCLUSION .....	176
CHAPTER 6: Three systemic “maps” of public participation.....		179
6.1	A STRUCTURAL MAP OF PUBLIC PARTICIPATION .....	180
6.1.1	<i>The macrosystem</i> .....	181
6.1.2	<i>The mesosystem</i> .....	185
6.1.3	<i>The microsystem – Discourse parameters</i> .....	189
6.1.4	<i>The microsystem – Discourse</i> .....	191
6.2	A FUNCTIONAL MAP OF THE CRITERIA FOR SUCCESSFUL PUBLIC PARTICIPATION.....	194
6.2.1	<i>Making the right decisions</i> .....	195
6.2.2	<i>Communicating effectively</i> .....	199
6.2.3	<i>Getting things done right</i> .....	201
6.2.4	<i>Trade-offs among functional criteria</i> .....	205
6.2.5	<i>Setting the structural and functional maps side by side</i> .....	209
6.3	A PROCESS MAP OF PROBLEMS IN PUBLIC PARTICIPATION .....	211
6.3.1	<i>Differences in social and cultural background</i> .....	213
6.3.2	<i>Self-interest</i> .....	217
6.3.3	<i>Incompetence</i> .....	219
6.3.4	<i>Mistrust</i> .....	222
6.3.5	<i>Counterproductive behaviour during public participation processes</i> .....	224
6.3.6	<i>Undesirable outcomes of public participation processes</i> .....	227
6.3.7	<i>Facilitating public participation processes</i> .....	230
6.3.8	<i>Setting the functional and process maps side by side</i> .....	232
6.4	CONCLUDING THOUGHTS .....	237
CHAPTER 7: Two systemic perspectives on psychosocial processes in public participation		239
7.1	MODEL A: ECONOMICS OF FLEXIBILITY IN PUBLIC PARTICIPATION .....	239
7.1.1	<i>Sketching the model</i> .....	240
7.1.2	<i>Incorporating psychological concepts and theories into the model</i> .....	257
7.1.3	<i>Applying the model to public participation</i> .....	262
7.1.4	<i>Concluding thoughts on Model A</i> .....	271
7.2	MODEL B: LEVELS OF DESCRIPTION IN PUBLIC PARTICIPATION .....	273
7.2.1	<i>Sketching the model</i> .....	274
7.2.2	<i>Incorporating psychological concepts and theories into the model</i> .....	282
7.2.3	<i>Applying the model to public participation</i> .....	290

7.2.4	<i>Concluding thoughts on Model B</i> .....	313
CHAPTER 8:	Conclusions.....	315
8.1	IMPROVING THE PRACTICE OF PUBLIC PARTICIPATION.....	315
8.1.1	<i>Training in group processes and communication</i> .....	316
8.1.2	<i>Constructing idea trees</i> .....	317
8.1.3	<i>Maintaining optimum levels of arousal and flexibility</i> .....	317
8.1.4	<i>Being aware of the relationship dimension of public participation</i> .....	318
8.1.5	<i>A caveat</i> .....	319
8.2	IMAGES AND METAPHORS OF PUBLIC PARTICIPATION.....	319
8.3	AVENUES FOR FUTURE RESEARCH.....	320
8.3.1	<i>Channelling flexibility</i> .....	321
8.3.2	<i>The use of idea trees</i> .....	321
8.3.3	<i>Mapping preferences and strategies of influence</i> .....	321
8.3.4	<i>Phase portraits of public participation</i> .....	322
8.3.5	<i>Redefining “good” decisions</i> .....	324
8.4	MOVING BEYOND THE MODELS.....	325
8.4.1	<i>Transcending logical types</i> .....	325
8.4.2	<i>The limitations of phase space</i> .....	326
CHAPTER 9:	References.....	329

## List of Figures

Figure 2.1	Study objectives and chapter outline.....	31
Figure 3.1	Functions of public participation.....	42
Figure 3.2	The effect of participation procedures on decision quality.....	46
Figure 3.3	Levels of structure in public participation.....	47
Figure 3.4	Arnstein’s ladder of citizen participation.....	71
Figure 3.5	The competing values model.....	73
Figure 3.6	Three approaches to defining “normal” behaviour.....	78
Figure 3.7	Three approaches to defining the success of public participation.....	80
Figure 4.1	A possible description of a thermostat.....	88
Figure 4.2	Another possible description of a thermostat.....	88
Figure 4.3	The principle of binocular vision.....	92
Figure 4.4	Subsystems, systems and supra-systems.....	93
Figure 4.5	A possible rendition of the relationship between two variables.....	94
Figure 4.6	Another possible rendition of the relationship between two variables.....	95

Figure 4.7 Relationships among four variables .....	95
Figure 4.8 A hypothetical example of a “current reality tree” .....	96
Figure 4.9 A current reality tree for problems in furnace cooling .....	97
Figure 4.10 A hypothetical example of a “future reality tree” .....	98
Figure 4.11 A governor .....	99
Figure 4.12 Two systems containing negative feedback loops .....	99
Figure 4.13 A positive feedback loop involving achievement and motivation .....	101
Figure 4.14 Two possible outcomes of a positive feedback loop involving achievement and motivation.....	102
Figure 4.15 Emergent properties in the behaviour of an electronic circuit .....	103
Figure 4.16 The relationship between temperature, the state of the heater, the thermostat setting and occupant discomfort.....	105
Figure 4.17 An alternative view of the relationship between temperature, the state of the heater.....	106
Figure 4.18 An alternative view of the relationship between temperature, the state of the heater, the thermostat setting and occupant discomfort .....	107
Figure 4.19 Logical typing in a thermostat and in set theory.....	108
Figure 4.20 Three levels of logical typing pertaining to a map .....	109
Figure 4.21 Three levels of logical typing pertaining to a heater-thermostat system.....	109
Figure 4.22 Mass as a control parameter mediating the collisions of molecules.....	111
Figure 4.23 Two levels of description pertaining to a set of molecules .....	113
Figure 4.24 Variables describing a system containing a heater.....	114
Figure 4.25 A feedback loop between temperature and the state of the heater .....	115
Figure 4.26 Three levels of description of a heater-thermostat system.....	116
Figure 4.27 Two levels of feedback in a heater-thermostat system.....	117
Figure 4.28 Melanin production as an example of requisite flexibility .....	121
Figure 4.29 An example of change in requisite flexibility .....	123
Figure 4.30 Dynamics of a heater-thermostat system as trajectory in two-dimensional phase space.....	126
Figure 4.31 An attractor in the three-dimensional phase space of a heater-thermostat system.....	127
Figure 4.32 Two alternative descriptions of a heater-thermostat system.....	128
Figure 5.1 Outline of Chapter 5 .....	133
Figure 5.2 The effect of framing on decision-making .....	139
Figure 5.3 The relationship between arousal, task complexity and performance.....	141
Figure 5.4 A graphical representation of Learning I.....	143



Figure 5.5 A graphical representation of Learning II .....	145
Figure 5.6 A chain of evaluations underlying an attitude.....	148
Figure 5.7 Conditioning theory of attitude change .....	150
Figure 5.8 The theory of cognitive dissonance.....	151
Figure 5.9 The over-justification effect .....	151
Figure 5.10 The theory of planned behaviour .....	152
Figure 5.11 The elaboration likelihood model.....	163
Figure 5.12 The effect of sharedness of group decision-making.....	166
Figure 5.13 The “grid-group” model of cultural differences .....	174
Figure 6.1 A structural model of public participation.....	181
Figure 6.2 Criteria for effective decision-making .....	196
Figure 6.3 Criteria for effective communication .....	200
Figure 6.4 Consequences of successful public participation processes.....	202
Figure 6.5 Trade-offs in public participation.....	206
Figure 6.6 Trade-offs in public participation viewed through the lens of the Competing Values Model .....	211
Figure 6.7 An outline of problems in public participation .....	213
Figure 7.1 A hierarchy of ideas.....	242
Figure 7.2 An example of the “hardwiring” of an idea .....	246
Figure 7.3 An experience that fails to alter an established belief .....	247
Figure 7.4 The relationship between change in experience and modification of ideas.....	247
Figure 7.5 A hierarchy of ideas and their associated flexibility .....	248
Figure 7.6 Hardwiring as change in the hierarchic position of an idea.....	249
Figure 7.7 The effect of competing demands on flexibility .....	251
Figure 7.8 Variables determining the flexibility of an idea .....	253
Figure 7.9 An “idea tree” .....	254
Figure 7.10 Groups with different “idea trees” .....	255
Figure 7.11 A hierarchy of ideas about ideas.....	256
Figure 7.12 Effect of the economics of flexibility on cognitive elaboration .....	261
Figure 7.13 Two dimensions of diversity among participants.....	266
Figure 7.14 Three types of consensus .....	269
Figure 7.15 Ideas as control parameters .....	277
Figure 7.16 Order parameters and control parameters in human interaction.....	278
Figure 7.17 Group identity as order-and-control parameter.....	281

Figure 7.18 Group polarisation as order parameter at the group level .....	282
Figure 7.19 Reactive behaviour, proactive behaviour and the effects of external constraints.....	284
Figure 7.20 Sources and functions of information about interpersonal relationships .....	286
Figure 7.21 Attitudes, sharedness, relationships, centrality, demonstrability and influence over group decisions.....	289
Figure 7.22 Summary of Model B.....	292
Figure 7.23 Differences among participants as divergent positions in “preference space” .....	300
Figure 7.24 Alternative strategies for influencing the outcome of a public participation process.....	301
Figure 7.25 Strategy 1: Direct influence on decisions.....	303
Figure 7.26 Strategy 2: Influence on other participants’ influence on decisions.....	304
Figure 7.27 Strategy 3a: Influence on other participants’ beliefs.....	305
Figure 7.28 Strategy 3b: Influence on other participants’ values.....	306
Figure 7.29 A typology of strategies for influence in public participation .....	311
Figure 8.1 Hypothetical phase portraits of two public participation processes .....	323

## List of Tables

Table 2.1 A summary of five alternative notions of theory.....	24
Table 3.1 Dimensions describing the main features of public participation models.....	53
Table 3.2 Dimensions describing the procedural characteristics of public participation models .....	54
Table 3.3 Dimensions describing the applications, strengths and weaknesses of public participation models.....	54
Table 3.4 Main features of public participation models (I) .....	55
Table 3.5 Main features of public participation models (II) .....	56
Table 3.6 Procedural characteristics of public participation models (I) .....	57
Table 3.7 Procedural characteristics of public participation models (II) .....	58
Table 3.8 Applications, strengths and weaknesses of public participation models (I) .....	59
Table 3.9 Applications, strengths and weaknesses of public participation models (II).....	60
Table 3.10 Techniques for sharing information with the public.....	61

Table 3.11 Techniques for soliciting input from and providing feedback to the public .....	62
Table 3.12 Techniques for bringing people together .....	62
Table 3.13 Consensus-building techniques .....	63
Table 3.14 Social sectors and their characteristic resources .....	75
Table 3.15 Types of discourse in Habermas' theory .....	81
Table 3.16 Weblert's framework for evaluating fairness in public participation .....	83
Table 3.17 Weblert's framework for evaluating competence in public participation .....	85
Table 4.1 Bronfenbrenner's model of concentric systems .....	119
Table 6.1 Problems related to functions .....	235
Table 7.1 Steps comprising alternative strategies for influence .....	302

## CHAPTER 1: INTRODUCTION

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*How should we then live?*

– Francis Schaeffer

### 1.1 WHAT IS PUBLIC PARTICIPATION?

An understanding of the term “public participation” requires some background knowledge regarding alternative forms of government and their evolution over time. In the last ten years, the human race has quietly passed an unprecedented milestone: for the first time in history, more than half the world’s population live in countries characterised by democratic systems of government (Dahl, 1998). This development is significant because democracy – although far from perfect – is the best answer to the question “How should we then live?” that has yet been devised. Compared to other forms of government – hereditary monarchy, oligarchy, anarchy, “expertocracy” (Renn, 2001, p. 133), etc. – it is the most conducive to individual freedom and collective well-being (Murray & Nijzink, 2002).

This trend towards democratisation has been accompanied by a search for the most effective *type* of democracy. Numerous variations of democratic governance are available, and these may be arranged on a spectrum. In systems at the one extreme of this spectrum, citizens elect leaders from a predefined set of candidates. The formulation and implementation of laws, policies and strategies at national, regional and local levels are then delegated to these elected leaders and their appointed officials. Because leaders chosen in this manner are required to *represent* the interests of their electorate, this form of government is known as *representative democracy* (De Villiers, 2001).

The other end of the spectrum accommodates systems of government in which decisions pertaining to the public sphere are not delegated to elected leaders and officials, but are taken by citizens themselves. Such popular decision-making is often accomplished by means of referenda. This form of government – of which Switzerland is an example (Butler & Ranney, 1994; Webler & Renn, 1995) – is known as *direct democracy*.

A large number of variations are possible between these two extremes. For example, some decisions may be delegated to political leaders, while others remain in the hands of citizens. Alternatively, mechanisms may be put in place to solicit broad public *input* in decisions, but the final responsibility for making those decisions might still rest with the government. Yet another alternative is the approach to political interaction known as the “*neo-corporatist*” model, in which “key social actors such as industry, the unions, and technical associations negotiate commonly acceptable solutions behind closed doors” (Webler & Renn, 1995, p. 21). Each of these alternatives represents a different admixture of elements taken from representative and direct democracy.

Given this background information, it is now possible to formulate a definition of public participation. In short, *public participation is to direct democracy what elections are to representative democracy* (Woltjer, Huitema, & Coenen, 2002). It is the collective name for a set of mechanisms and procedures intended to solicit public input in decisions of public relevance. Included under this heading are not only referenda, but also public hearings; advisory panels consisting of selected community members; negotiations between

government officials, representatives of industry and public interest groups; and many other forms of joint decision-making.

It was mentioned above that democracy is the best form of governance currently known to humankind. The most effective form of democracy, in turn, appears to be one that lies somewhere close to midway on the spectrum between representative and direct democracy (Barber, 1984). Such a hybrid capitalises on the advantages offered by each. The advantages of representative democracy include the fact that it promotes efficiency by reducing the time required to take decisions. However, it suffers from the danger that political parties “originally established as manifestations of the collective will [may evolve] into organizational machines that tend to develop and sustain structures for serving the interests of their members” (Dienel & Renn, 1995, p. 120). Direct democracy, on the other hand, is more effective at ensuring that the needs and interests of citizens really are taken into account during decision-making (Budge, 1996). However, the shortcomings of direct democracy include the fact that citizens often do not have the technical knowledge necessary to make meaningful decisions in today’s complex world (Allen, 1998).

Many government reforms in democratic countries over the last few decades may be regarded as a move from representative democracy towards an incorporation of more elements of direct democracy – in other words, a search for an optimal balance between the two systems (Dryzek, 2000; Fiorino, 1995; Raimond, 2001; Renn, 2001). As direct democracy has gained increasing prominence in the international arena, public participation (also often referred to as “citizen participation,” “citizen involvement,” or “stakeholder engagement”) has become the subject of a growing number of studies. These provide various definitions of public participation – most of which concur more or less with the definition offered above.

Litva et al. (2002, p. 1826), for example, define public participation as “taking part in the process of formulation, passage, and implementation of public policies through action by citizens which is aimed at influencing decisions which are, in most cases, ultimately taken by public representatives and officials.” (Creighton, 1992, p. 10) defines it as “the process by which public concerns, needs, and values are incorporated into governmental decision-making. Public participation is a two-way communication, with the overall goal of better decisions, supported by the public.” Public participation has also been defined as “a process leading to a joint effort by stakeholders, technical specialists, the authorities and the proponent who work together to produce better decisions than if they had acted independently” (Greyling, 1998, p. 20).

Although the field of public participation has enjoyed a significant degree of academic attention, it remains “haunted by a need for integrated conceptual thinking” (Webler, 1999, p. 2). One reason for this lack of integration may be the fact that most literature on public participation originates from a relatively small number of disciplines, such as policy analysis and public administration. Relatively few studies have been conducted from a *sociological* or *psychological* perspective (Buchecker, Hunziker, & Kienast, 2003; Kelly & Van Vlaederen, 1995). This is despite “the obvious fact that, to the participants, public participation is interaction among individuals” (Renn, Webler & Wiedemann, 1995a, p. 8). This study aims to contribute towards correcting this imbalance. Its objectives are discussed at greater length in the following section.

## 1.2 OBJECTIVES OF THIS STUDY

The anthropologist and systems thinker Gregory Bateson (2000, p. 244) argued several decades ago that “every science, like every person, has a duty toward its neighbors, not perhaps to love them as itself, but still to lend them its tools, to borrow tools from them, and, generally, to keep the neighboring sciences straight.” If this statement is accepted at face value, it implies that the field of public participation should look to its older, neighbouring sciences to fulfil such an obligation. Like the Biblical commandment that we should love our neighbour, however, Bateson’s injunction raises the question: Who is my neighbour?

Broadly speaking, the various sciences can be arranged in a hierarchy according to the scale and level of abstraction of their subject matter (Blanchard & Fabrycky, 1990). At the bottom of this hierarchy is subatomic physics, which deals with questions surrounding the fundamental entities that make up all matter. Further up in the hierarchy are sciences such as chemistry and solid state physics, which deal with the manner in which atoms combine to form molecules, crystals and the like. Next in line is molecular biology, whose subject matter is the combination of simple molecules to form the extremely large molecules that are the basic building blocks of living organisms – the arena of biology.

The hierarchy extends into the human sciences. Psychology (which is partly grounded in biology through neuroscience and evolutionary psychology) deals with the behaviour of individuals. Social psychology deals with interpersonal relationships and the behaviour of people in small groups. Sociology and anthropology (and public participation – one of the many applied branches of these sciences) occupy a still higher rung in the hierarchy: they deal with the manner in which *groups* of people interact with one another and with their environment.

The “neighbours” of a science, therefore, are those sciences occupying the same level in the hierarchy, or else the levels directly above and below it. Hence, *psychology* (social psychology in particular) *is one of the neighbours of public participation*. But what kinds of tools should neighbouring sciences lend and borrow from one another? When should they do so, and when is it better for them to rely on their own devices? These questions will be addressed below.

### 1.2.1 The interdependence and autonomy of scientific disciplines

As the foregoing description suggests, the patterns and processes revealed at one level in the hierarchy of sciences become the basic units of the level above it. Such transposition of concepts from lower to higher levels is always accompanied by a process of *simplification*. Chemists, for instance, base their theories on a simplified picture of the atom handed to them by the physicists. According to this picture, an atom consists of a heavy, positively charged nucleus surrounded by light, negatively charged electrons. Chemists do not share physicists’ interest in, say, the protons and neutrons that make up the nucleus, or in quark theory (which holds that every proton and neutron is composed of three still smaller, as yet unobserved, particles called “quarks”); the vision of the nucleus as a single particle is accurate enough for their purposes. Likewise, “the cell biologist has a [simplified] picture of the units which the molecular biologist pores over, and tries to use them to account for the ways that cells interact” (Hofstadter, 1979, p. 305).



The advantage of such simplification is that it reduces the complexity of the world to more or less manageable proportions; it saves us “from the impossible task of seeing people as collections of quarks” (Hofstadter, 1979, p. 306). Simplification comes at a price, however: it forces one to sacrifice a certain amount of precision. High-level descriptions can often provide nothing better than probabilistic estimates of the manner in which events will unfold. Biologists can never hope to predict the behaviour of cells with the same accuracy as physicists predict the behaviour of falling bodies, for instance, while psychologists often gaze enviously at the degree of precision attained in some areas of biology.

The fact that high-level predictions are possible at all (even though they are sometimes imprecise) reveals something interesting about the world we live in. It tells us that the various levels of the hierarchy are – to use a phrase coined by cognitive psychologist Herbert Simon (1962) – at least partially “sealed off” from one another. One does not have to know *everything* about lower levels to understand the things that happen at higher levels.

The practical (and fortunate) implication of such “sealing off” is that it allows sciences concerned with different levels of the hierarchy to proceed with a degree of autonomy. For instance, it was possible for geneticists to unravel the basic principles of heredity long before the discovery of DNA – the molecule in which hereditary information is encoded (Futuyma, 1986). It was also possible for scientists to lay the foundations of chemistry before anything was known about the inner structure of atoms. In each of these cases, scientific advances were made by simply observing *that* certain regularities existed at a particular level, and then exploring the consequences of those regularities, but postponing attempts to discover *why* these regularities existed.

### 1.2.2 Reductionism and its inverse

In science, as in many other aspects of life, the secret of success lies in achieving a balance between opposites. While it is sometimes necessary to defer certain “Why?” questions, an important part of science is to ask and attempt to answer such questions as soon as it becomes possible to do so. Great advances in the understanding of phenomena at a particular level are often made by delving to its foundation and discovering how it articulates with the level below. The finer points of the laws of heredity, for instance, could only be elucidated once scientists had gained adequate understanding of the molecular composition of DNA (Futuyma, 1986).

At the same time, however, it is important not to place too much faith in bridges connecting higher and lower levels of description. A science that relies solely on such methods of discovery is doomed to paint an incomplete picture of its subject matter. This is because entities and processes at each level display certain properties that *cannot be explained solely in terms of the properties of its substrate*.

Biological organisms, for instance, “display all the distinctive phenomena of life – for example, they assimilate food and reproduce – in spite of the fact that the inorganic atoms of which they are ultimately made up individually display none of these phenomena” (Pratt, 1991, p. 113). An organism is not, therefore, endowed with the attributes of life because it is made up of carbon, oxygen, nitrogen and the like, but because those elements are *combined* in specific ways through the processes of life itself. Life is best regarded as an “emergent property” of certain systems of interacting molecules.

In the same vein, the sociological pioneer Émile Durkheim (1938) argued that *social phenomena* ought to be regarded as emergent properties of systems of interacting human beings:

In the case of psychology and sociology, the same break in continuity [applies] as between biology and the physico-chemical sciences. Accordingly, whenever a social phenomenon is directly explained by a psychological phenomenon, one may be sure that the explanation is false. (p. 103-104)

To ignore the reality of emergent properties – in other words, to assume that an understanding of low-level phenomena is a sufficient condition for the understanding of high-level ones – is to commit the error of *reductionism* (Williams, 1995).

As was mentioned above, different levels of description are never completely “sealed off” from one another. Hence, it is also possible to *overestimate* the autonomy enjoyed by individual levels in the hierarchy of sciences, thus paying insufficient attention to advances in the understanding of low-level phenomena. This amounts to an error in the *opposite direction from reductionism*. An historical example may be used to illustrate the dangers of such an approach.

Early research on electricity was premised on a model of the atom derived from nineteenth century physics. According to this model, electrons are tiny particles orbiting the nuclei of atoms, and the electrical characteristics of materials are determined by the propensity of some atoms to shed electrons from their orbits, allowing them to float freely between atoms and form electrical currents. While this model of the atom enabled scientists to formulate accurate explanations of many electrical phenomena, it was not equally successful in all cases. As was pointed out above, however, higher-level descriptions often take the form of probabilistic estimates rather than exact predictions. It would therefore have been possible for scientists to ignore these discrepancies between theory and observation – to attribute them to the inevitable imprecision associated with their position in the hierarchy.

Then, in the early twentieth century, a theoretical revolution occurred that was to have far-reaching consequences in virtually every branch of physics: the discovery of quantum mechanics. Quantum theory forced a radical rethinking of the nature of subatomic entities: electrons were no longer regarded as tiny particles orbiting the nucleus, but as something resembling “waves of probability” enveloping it (Merzbacher, 1970). Thanks to quantum mechanics, many previously mysterious subatomic phenomena were now rendered explicable.

If scientists studying electrical phenomena had considered their field sufficiently “sealed off” from subatomic physics to ignore quantum mechanics and stick to their antiquated model of the atom, they would never have been able to account for many of the previously mentioned inaccuracies in their predictions. More specifically, the electrical properties of certain structures composed of semiconductors – such as silicon – would have remained mysterious. If this had been the case, the world would not today have the silicon chip, the integrated circuit or the personal computer. For the functioning of microelectronic circuits is nothing but the macroscopic manifestation of quantum phenomena.

The moral of the story is that scientists are always at risk of making incorrect inferences or assumptions about the phenomena they study. The “laws” they formulate to describe these

phenomena, and the models they adopt to explain them, might contain subtle inaccuracies or might only hold under certain circumstances. Because of the uncertainty inherent in any high-level description, these inaccuracies might not show up clearly enough for scientists to recognise and correct them. In such cases, the only way they have of checking the correctness of their premises is by asking the question: Do they fit the currently known facts about the processes and entities forming the *substrate* of this level? Answering this question essentially involves finding out what the relevant phenomena look like to scientists standing *one step down* in the hierarchy. A science that so fervently condemns reductionism that it turns a deaf ear to its low-level neighbours does so at its peril.

### 1.2.3 The case of public participation and psychology

Just as a theory of electricity must take as one of its basic building blocks a *simplified description* of atoms and electrons (compared to the descriptions utilised by subatomic physicists), so a theory of public participation must take as one of its starting points a *simplified picture of the human psyche*. The pivotal question, however, is whether the model of human nature currently employed in the study of public participation is not perhaps an *oversimplification*. The first aim of this study, then, was to test two contrasting hypotheses and to determine which of them offers the best description of reality:

Hypothesis 1: An attempt to harness psychological insights to study public participation is an example of *unnecessary reductionism* – a case of “hitting a nail with a sledgehammer.” There are, after all, many human endeavours that can be adequately understood without resorting to psychology. If we wish to understand why some houses fall down while others remain standing, for example, we require knowledge of engineering principles rather than the group dynamics of construction workers. Similarly, if we wish to predict the next move of a chess player, we would do better studying the rules of chess than cognitive psychology.

Hypothesis 2: Public participation finds itself in a situation similar to that of pre-quantum electrodynamics. Just as scientists’ understanding of electrical phenomena would have been seriously impaired if they had clung to an outmoded model of the atom, so the development of public participation as a scientific discipline will be hampered if it proceeds from *inappropriate or simplistic assumptions regarding human nature and interpersonal relationships*.

If the second hypothesis is more correct than the first, it follows that psychology has a real and valuable contribution to make to a scientific understanding of public participation, as it will serve to correct and refine the model of human behaviour on which it is premised. A second aim of the study was therefore to elucidate the *nature* of this contribution – in other words, to develop a theoretical model of public participation that incorporates both its *macro-level* characteristics (its political functions, formalised procedures, legislative context, etc.) and its *micro-level* characteristics (the thoughts, feelings, interactions, etc. of participants). The measure of success of such a model would be its ability to *integrate* these two levels and explain how the macro-features of participation *emerge* from its intrapsychic and interactive substrate. A third objective of the study was to *apply* this model to gain a deeper understanding of some of the problems and challenges facing public participation

practitioners, and – if possible – to develop recommendations for addressing these problems.

### 1.3 WHY A SYSTEMS THEORETICAL PERSPECTIVE?

In the foregoing defence of the decision to view public participation from a psychological angle, much emphasis was placed on the notion of *levels of description*. It was argued that there is a fine balance between overestimating the dependence of higher on lower levels – and thus ignoring the reality of emergent properties (the error of reductionism) – and overestimating the autonomy that higher levels enjoy vis-à-vis lower levels.

*Systems theory* is a collective name for a number of conceptual tools and philosophical principles that have been developed to achieve such a balance (Perold, 2001). It may be regarded as a “meta-science,” in that it deals with *relationships between* scientific disciplines rather than with the content of any specific research endeavour (Vallacher & Nowak, 1994a). It owes its interdisciplinary status partially to the fact that the levels of description that it seeks to integrate are often the domains of distinct areas of study. For example, biochemistry concerns itself with the interaction between molecules that constitute living matter. The distinct processes of life, on the other hand, are the province of biology. One of the tasks of *systems biology* (an application of systems theory) is to forge a link between these two disciplines and their characteristic levels of description – in other words, to explain how the phenomena of life emerge from the interaction between molecules that are, in themselves, inanimate (Kitano, 2001).

The trans-disciplinary nature of systems theory is further reinforced by the fact that *diverse kinds of systems often display formally similar emergent properties*. For instance, self-correcting circuits (or negative feedback loops, which are discussed in Chapter 4) may be found in machines, in biological organisms, in small-group dynamics, even in entire societies and ecosystems. For this reason, systems theory is sometimes defined as the “study of the abstract organization of phenomena, independent of their substance, type, or spatial or temporal scale of existence. It investigates both the principles common to all complex entities, and the (usually mathematical) models which can be used to describe them” (Heylighen & Joslyn, 1992).

Systems theory is used in this study to achieve integration between two bodies of knowledge: knowledge of *human behaviour and interaction* that has been amassed within the field of psychology, and knowledge of *public participation* embodied in the experience of public participation facilitators and reported in the literature of the field. If these two bodies of knowledge are considered separately, it is evident that each of them actually covers several levels of description. Psychology, for example, deals with the thoughts, feelings and perceptions of *individuals*; with human *relationships* (which occupy a higher level of description, as they consist of constellations of individuals); and with the characteristics and behaviour of *groups* of people (which appear at a still higher level of description, as groups consist of networks of multiple relationships). Similarly, an understanding of public participation requires insight into *collective decision-making processes*, into the *problem settings* within which such decision-making occurs, as well as into the broader *political and legislative contexts* in which these problem settings are embedded. Hence, the application of systems theory in this study will involve a stepwise integration process that not only builds bridges across the boundary separating the



disciplines of psychology and public participation, but also achieves a degree of integration *within* each discipline. The route followed towards achieving this aim is mapped out in more detail in the following chapter.

## CHAPTER 2: METHODOLOGY

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*In science, as in love, a concentration on technique is likely to lead to impotence.*

– P. L. Berger

As was discussed in Chapter 1, the aim of this study is threefold:

1. To test the hypothesis that most attempts to develop a systematic understanding of public participation are premised on an *oversimplified model of human behaviour* and that, consequently, they overlook or are unable to account for important aspects of public involvement processes that might influence their outcome;
2. To use systems theory to develop a model of public participation that incorporates a more sophisticated understanding of human behaviour, and is therefore able to provide greater insight into the dynamics underlying the success or failure of public involvement processes; and
3. To employ this theoretical model to formulate recommendations for addressing some of the problems frequently encountered in the field of public participation.

The first of these three objectives forms the groundwork for the remainder of this study. It was accomplished by means of a *preliminary literature review*, the results of which are described in the next section. Subsequent sections of this chapter are devoted to the methods employed in pursuit of Objectives 2 and 3.

### 2.1 PRELIMINARY LITERATURE REVIEW: GUIDING ASSUMPTIONS IN PUBLIC PARTICIPATION

The foundational premise of this study, which was discussed in Chapter 1, is that the world can be described at various levels (atoms, molecules, individual living beings, relationships, groups, etc.), and that every scientific investigation of the world is necessarily limited to a small subset of these levels. Furthermore, the necessity of reducing the complexity of the world to manageable proportions dictates that every science must proceed from *simplified assumptions* regarding phenomena whose scale places them outside its sphere of interest. While such simplification is necessary and often conducive to scientific process, it may also lead scientists astray by introducing invalid or overly simplistic assumptions.

This argument was then applied to elucidate the relationship between the field of public participation and that of psychology. It was pointed out that psychology deals with the behaviour of individuals and small groups, while public participation concerns itself with social phenomena at a larger scale. Hence, students of public participation do not require an in-depth knowledge of psychological processes and constructs; it is possible for them to work with simplified assumptions regarding human nature. However, it is also possible that progress towards an accurate understanding of public participation might be hampered if these assumptions represent an exaggerated or inappropriate simplification.



The aim of the preliminary literature review was to identify the simplified model of human behaviour that best describes the intellectual underpinnings of the study of public participation, and to test the hypothesis that this model does not adequately account for all phenomena that significantly influence the outcomes of public involvement processes. The sources consulted during this literature review were limited to academic publications pertaining to public participation and closely related fields. A first-round review of journal articles on public participation did not yield any explicit reference to a model of human behaviour. However, a search of literature in related fields did provide several clues regarding the existence of such a model, as well as its nature and shortcomings. These clues are described in the following section.

### 2.1.1 Models of human behaviour in related fields

The following paragraphs offer a brief description of activities or fields of enquiry that are in some way similar or relevant to public participation. These include economic theory, participatory development, social impact assessment and risk communication. In each of these fields, it was possible to obtain literature containing references to its guiding theoretical assumptions regarding human nature.

#### a) *Economic theory*

The first clue emerged from the field of economics, and concerns the relationship between economic processes and the behaviour of individual human beings. Classical economic theory is based on the assumption that people always act so as to *maximise their own interest*, and that economic phenomena (market fluctuations, etc.) result from the aggregate consequences of such behaviour. This assumption is embodied in a model of human nature that is often referred to by the term “rational economic man” or *Homo economicus* (Frey & Benz, 2002).

Fehr and Fischbacher (2002, p. C30) acknowledge that this model “is a convenient simplification and [that] there are, no doubt, situations in which almost all people behave as if they were strictly self-interested.” However, they caution that “fundamental issues in economics cannot be understood on the basis of the self-interest model.” They go on to describe aspects of human behaviour that cannot be explained in terms of self-interest – such as concerns for fairness and reciprocity – and their very real effects on markets and other economic phenomena. A similar argument has been put forward by (Jentoft, McCay, & Wilson, 1998).

How likely is it that public participation employs a model of human behaviour similar to *Homo economicus*? Mjøset (1999) points out that the programme of *rational choice theory* – which has been particularly influential in political science and sociology over the last two decades – has as one of its characteristic features an ambition to generalise the procedures and theory of neoclassical economics to the other social sciences. Frey and Benz (2002) also make mention of the “imperialistic” tendency of economic theory.

The field of public participation resembles that of economics in a number of respects. Both deal with contexts where individual actors pursue often-divergent goals, but where their behaviour is constrained by a common set of rules (Jentoft et al., 1998). The objectives of the two disciplines are also similar: to describe, understand and predict the macro-level consequences of the interaction among these actors. Because of these similarities, it can

be deduced that public participation presents a prime candidate for “colonisation” by the models and methods of economics.

### b) *Participatory development*

As is evident from the previous section, the relationship between economic theory and public participation is on a somewhat abstract, academic level. Participatory development, on the other hand, is related to the object of this study in a much more tangible way. The field of development, or Development Studies, concerns itself with the following question: How can the gap between the rich and the poor, between the privileged and disempowered, between developed and developing countries, between the First World and the Third World, be narrowed to the benefit of all (Rahnema, 1992)? As an academic discipline, this field serves the education, training and research needs of a multi-million dollar international “development industry” whose major role-players include powerful donor organisations such as the United Nations Development Programme (UNDP), the UK Department for International Development (DfID) and the World Bank, as well as numerous international and national non-governmental organisations (NGOs) (Cooke & Kothari, 2001).

Over the past few decades, it has become increasingly evident that many development projects fail because they are based on inadequate knowledge of local conditions or of the priorities, preferences, beliefs and customs of their intended beneficiaries (Chambers, 1998; Mayo, 2000). If community members perceive that a development project is out of step with their needs, or that it is being imposed upon them in a paternalistic, authoritarian or “top-down” manner, they are unlikely to develop a sense of ownership with regard to the project. Consequently, the initiatives or infrastructure established by the project – be it an agricultural cooperative for small-scale farmers, improved water and sanitation services or community-based management and sustainable commercial utilisation of natural resources – tend to grind to a halt and fall into disrepair soon after the project team withdraws (Buchecker et al., 2003; Chambers, 1997; Narayan, 1995).

In an attempt to overcome these difficulties and improve the success rate of its initiatives, the development industry has increasingly adopted an approach that has become known as *participatory development*. The Food and Agriculture Organisation of the United Nations (FAO, 2004) defines participatory development as

a process of equitable and active involvement of all stakeholders in the formulation of development policies and strategies and in the analysis, planning, implementation, monitoring and evaluation of development activities. To allow for a more equitable development process, disadvantaged stakeholders need to be empowered to increase their level of knowledge, influence and control over their own livelihoods, including development initiatives affecting them.

Participatory development therefore resembles public participation in that both aim to improve the effectiveness and acceptability of proposed actions by involving diverse groups of stakeholders in decisions pertaining to those actions. The two enterprises differ, however, with respect to the types of proposed actions and the types of stakeholders that are involved. In participatory development, the proposed actions are invariably projects or programmes aimed at improving the lot of the poor (Jackson, 2000; Kelly & Van Vlaederen,

1995). In public participation, proposed actions might include anything from changes in national policy or legislation to commercial or industrial developments (such as mines, factories or golf estates) to infrastructure projects (such as the establishment of a new landfill or the construction of a dam). In participatory development, stakeholders who participate in decision-making include members of beneficiary communities, the project team, local community organisations and sometimes also representatives of donor organisations (Kelly & Van Vlaenderen, 1996). In public participation, stakeholders comprise potentially affected communities (who may be wealthy, middle-class or poor), the project proponent, national or local authorities and independent specialists who have been contracted to assess the likely impacts of the proposed actions. Hence, participatory development typically entails interaction between “givers” and “receivers,” whereas public participation often involves confrontations amongst equals.

Unfortunately, participation has not been uniformly successful in enhancing the success and legitimacy of development initiatives. Criticisms that have been levelled against participatory development include claims that it “frequently serves to sustain and reinforce inequitable economic, political and social structures” (Hildyard, Hegde, Wolvekamp, & Reddy, 2001, p. 56) and that it is often implemented in a formulaic manner that does little to promote genuine “personal interaction, respect, and the ability to build a relationship of trust” (Hailey, 2001, p. 100).

Most relevant to the current discussion, however, is the following accusation by Cleaver (2001):

Participatory approaches can ... be criticized for their inadequate model of individual action and the links between this and social structure. ... The concept of the “rational economic man” is so deeply embedded in development thinking that its influence is strongly felt even where development efforts are concerned with activities that are not directly productive – with community, social action, citizenship. However, there is often a simultaneous and rather vague assumption of the “social being” whose better nature can be drawn upon in the interest of community and development. In both abstractions the complex positions of real individuals and real groups are lost. (p. 47)

### c) *Social impact assessment*

The second clue regarding the model of human behaviour underlying the study of public participation emerged from literature in the field of *social impact assessment*. The aim of social impact assessment is to form predictions regarding the likely effects of decisions and actions (infrastructure developments, policy changes and the like) on the lives and well-being of individuals and communities (Burdge et al., 1995). Whereas economics is a distant cousin and participatory development a close relative of public participation, social impact assessment and public participation enjoy an intimate working relationship. This relationship stems from the fact that, in order to form an accurate assessment of the probable social consequences of an action, it is often vital to obtain information about the current circumstances, concerns and values of citizens who stand to be affected by that action – and public participation represents the method of choice for obtaining such information (Vanclay, 1999). Given the intimacy of this relationship, it would not be surprising if certain

theoretical concepts employed in social impact assessment also found their way into public participation literature.

Henk Becker (1997), a prominent author on social impact assessment, argues that the philosophical basis of the field is a theory of human behaviour known as the *utilitarian individualistic model*. The first term in the epithet – “utilitarian” – refers to the assumption that human behaviour is best understood as being *goal-directed*, where “goals” are states of affairs that are in some way desirable (or have some *utility*) for those pursuing them. Goals might be selfish or altruistic, short-term or long-term, idealistic or hedonistic; they may be concrete (such as passing an exam) or abstract (such as winning the respect of esteemed others). The utilitarian individualistic model acknowledges that “goals will often be emotional, biased and contradictory” (Becker, 1997, p. 216). It assumes, however, that people are rational in the sense that all or most of their behaviour in some way reflects attempts to achieve desired aims or to overcome obstacles that prevent them from doing so. In other words, it assumes that one can understand any significant trends or patterns in the things people *do*, if one knows what it is they *want*.

The second term – “individualistic” – refers to the assumption that the behaviour of a *group* of people is best understood in terms of the goals of its individual *members*. The utilitarian individualistic model rejects the notion that a group as such could have goals: goals are related to purpose, and purpose can only be entertained in the minds of conscious, thinking beings – in other words, in the minds of the *individuals* comprising the group. Hence, if one knows what the individual members of a group want, one should be able to determine with a reasonable degree of accuracy how the group as a whole will act in a given set of circumstances. There is no mysterious, transcendent “group mind” at work.

A comparison between the utilitarian individualistic model and the model of “rational economic man” shows that they share several similarities. Both attempt to explain collective behaviour in terms of the actions of individuals. Furthermore, while the utilitarian individualistic model has a slightly broader notion of goals than the rational economic model (in particular, it does not assume that goals are necessarily selfish), the two models are also similar in that both assume that individual behaviour is best understood in the light of individual goals.

Although Becker does not make explicit mention of this, the utilitarian individualistic model – like its economic counterpart – has potentially significant shortcomings. For example, it does not take into account the fact that human behaviour might be influenced by factors *other than goals* (emotion and habit, for instance). It also does not acknowledge the possibility that, although groups consist of individuals pursuing their respective goals, the (often subliminal) interpersonal “forces” operating in a group setting might make it appear *as if* the group had purposes of its own. The phenomenon of *group polarisation* (which denotes the tendency of groups to adopt *more extreme courses of action* than would have been chosen by their members if they had been acting in isolation) is a well-known example of this principle (Hogg, Turner, & Davidson, 1990; Stasser, 1991).

#### d) *Risk communication*

A fourth piece of evidence was gleaned from the field of *risk communication* – a discipline that seeks to understand how people form *perceptions* of risk (be it environmental or personal, natural or man-made), how to formulate strategies for disseminating *information*

about risk, and predict how people are likely to adjust their *behaviour* in response to such information (Adler & Kranowitz, 2005; Gutteling & Wiegman, 1996; Renn, 1998). The proposed actions that are evaluated, attacked and defended during public participation processes are often actions that impose a degree of risk. (A landfill may, for example, subject surrounding communities to the risk of groundwater contamination or of being overrun by flies and rodents). Hence, risk communication – like social impact assessment – is closely related to public participation at both a theoretical and a practical level. The theoretical link between the two disciplines stems from the fact that people's perceptions of the risk associated with proposed actions has a significant influence on their behaviour during public participation processes (Healy, 2001). For this reason, an understanding of events during public participation requires an understanding of the dynamics of risk perception. On a practical level, the bond between the two fields is derived from that fact that public participation facilitators are often required to convey risk-related information to the public.

A review of risk communication literature (e.g. Flynn, 2001; Slovic, 1993; Sohn, Yang, & Kang, 2001) indicates that many studies in the field employ a model of human behaviour known as the *expected utility model*. This model assumes that people evaluate alternative courses of action (such as opposing or supporting the development of a landfill in their neighbourhood) on the basis of available information about the likely costs and benefits of each alternative. They then act so as to *maximise expected utility* – in other words, they choose whatever course of action they believe is most likely to offer the greatest benefit at minimum cost (Fishburn, 1982). The expected utility model therefore appears to be yet another incarnation of *Homo economicus*.

It has long been known that the behaviour of people in the face of risk does not always conform to the predictions of the expected utility model (Renn, 1998; Slovic, 1993). One of the factors responsible for such deviations is the fact that perceptions of risk are often influenced by the manner in which information is *framed* (for example, whether emphasis is placed on the potential benefits of opposing a landfill or on the potential costs of allowing it) (Adler & Kranowitz, 2005). A large amount of work has been done to explain such effects in terms of cognitive heuristics, biases and the like (see, for example, Gilovich, Griffin, & Kahneman, 2002).

Nevertheless, opinion in the field seems to be divided as to whether these deviations are significant enough to warrant the dismantling and replacement of the expected utility model (Healy, 2001). This model owes much of its appeal to its (relative) simplicity and intuitive plausibility. An alternative model would be considerably more complex and – due to the fact that cognitive biases and heuristics do not always make themselves felt with equal strength – might not represent a corresponding increase in explanatory power. Oberholzer-Gee (1995) summarises the situation as follows:

There is empirical evidence that information has a systematic effect on the way people form their risk perceptions and subsequently adjust their behavior. ... Whether these processes strictly follow the expected utility model or can be better explained by taking framing effects and other anomalies into account is still an open question. (p. 297)



### 2.1.2 Evidence of the assumptions guiding public participation

As the foregoing paragraphs indicate, a preliminary review of literature in fields closely related to public participation revealed that at least four of them share certain assumptions regarding human behaviour – assumptions variously referred to by terms such as “rational economic man,” the “utilitarian individualistic model” and the “expected utility model.” In addition, the inadequacy of these assumptions is recognised by authors in at least three of these fields. Armed with this knowledge, it was now possible to return to the public participation literature in search of indirect evidence that this field employs assumptions similar to those embodied in the rational economic and utilitarian individualistic models.

Such evidence was uncovered in a discussion by Nothdurft (1995) on *mediation*, which is a particular model or variety of public participation. Nothdurft points out that mediation processes can be described from two perspectives:

- ✓ A *legal-political perspective*, according to which “mediation is regarded as a technique, i.e. as a conception of dispute resolution which can be described in several phases and analyzed with respect to function and structure,” (p. 269) and
- ✓ An *interactional-structural perspective*, according to which mediation is “a verbal-interactive event with characteristic interactive elements; relations between the elements; and the conditions, regularities, and constraints of interactive performance” (p. 269).

In other words, the legal-political perspective concerns itself with the *objectives* that a mediation process is intended to achieve. The interactional-structural perspective, by contrast, focuses on the stream of events and actions that determine whether or not those objectives will be reached.

Reflecting on Nothdurft’s argument in the light of the foregoing discussion, it becomes evident that a description of mediation from a legal-political perspective is tantamount to *viewing it through the “lens” of the rational economic or utilitarian individualistic model*. After all, the *objectives* of a mediation process are nothing other than the *utility* that various participants hope to derive from it. Thus, the argument presents indirect evidence that at least some studies of public participation proceed from a set of simplified assumptions regarding human nature that resemble those employed in economics, participatory development, social impact assessment and risk communication.

The following statements by the same author also suggest that *the actual behaviour* of participants in mediation processes sometimes deviate significantly from these assumptions:

Procedural features certainly provide a macro-structural framework for interpreting interactive events, but interactive events transcend the mere realization of this macro-structural shape. Caused by the interplay of divergent interactive demands, the subjective interests of the participants, and the interactive dynamics of the negotiation process, many features emerge in the course of the interaction that ... engrave the decisive shape on mediation. How these events manifest themselves depends on the activities of the participants – although not all events are necessarily intentional. They are the result of the ongoing interactional process and some may be accomplished even “behind the back” of the participants. (p. 271)



Nothdurft goes on to argue that these deviations are *often not afforded sufficient importance* in studies of public participation. For example, he states that authors often “talk about the interactive events in terms of the legal-political discourse. As a result, mediation is described as a process in which an autonomous machinery performs interactive [functions] on the basis of specified procedural requirements” (Nothdurft, 1995, p. 269).

The inadequacy of trying to understand participative processes on the basis of such oversimplified assumptions regarding human nature is reflected in the following statement:

I do not doubt that disputing parties have cognitive concepts ('ideas') of legal procedures, but I do doubt that these concepts are identical with the components, phases and variables that underlie the discourse of legal-political reasoning. Empirical evidence suggests that these common-sense-concepts are used by people very differently depending upon the social interaction at stake (Nothdurft, 1995, p. 270).

### 2.1.3 Summing up the evidence

Taken together, the various pieces of evidence presented above lend some support to the assertion that:

- a) The field of public participation relies on a *simplified model* of human behaviour that is akin to the self-interest model of economic theory and participatory development, the utilitarian individualistic model of social impact assessment and the expected utility model of risk communication.
- b) This model is *overly simplified* in that it is unable to account for all aspects of human behaviour that might influence the success or failure of public participation processes. For instance, it does not recognise the powerful effect that factors such as emotion, habit and group dynamics might have on the behaviour of individuals.
- c) Refining or transforming this model to incorporate psychological insights regarding such “non-rational” phenomena does not, therefore, constitute unjustified reductionism, but has the potential to enhance scientific understanding of public participation processes.

This evidence was regarded as sufficient to warrant an attempt at achieving the second and third objectives of the study – namely, to develop a theoretical model of public participation that places the spotlight on its “human dimension” and to apply this model to formulate recommendations for addressing some of the problems facing the field. The remaining sections of this chapter outline the steps that were followed towards achieving these objectives.

## 2.2 DEVELOPING A MODEL OF THE PSYCHOSOCIAL DYNAMICS OF PUBLIC PARTICIPATION

The second objective of this study – to develop a theory of public participation that is sophisticated enough to account for instances in which participants do not act as rational economic agents or utilitarian individuals – is by far the most ambitious of the three. Any judgement regarding the extent to which this objective was achieved must depend on the

criteria adopted to rate the success of a theory. These criteria, in turn, depend on one's *philosophical perspective regarding the nature and role of theory in science*. A few alternative perspectives are described in the following sections.

### 2.2.1 Alternative views of theory

The term "theory" means different things to different people. In everyday language, the word is often used to denote a *hunch* or *unproven assumption*. For example, a question regarding one's opinion about the cause of a certain event might be phrased as "What's your theory?" Within this perspective, it is not meaningful to ask about the success of a theory, as "theory" is regarded as something less substantial and less reliable than "fact" (Gould, 1984).

In scientific discourse, by contrast, the term "theory" has a very different meaning. Kerlinger (1986, p. 9), for example, defines theory, as it is understood in this context, as "a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena." Indeed, much of the acrimony in debates around creationism versus evolution stems from differences between the layperson's and the scientist's understanding of the term "theory." Scientists are routinely exasperated by claims that the Darwinian account of the origin of life does not deserve to be given preference over the Biblical version, as it is "*just a theory*" (Gould, 1984).

Much has been written about the criteria for evaluating scientific theories. In one of the more comprehensive discussions of the topic, Gerring (2001), for example, defines a successful theory as one that has the following characteristics: specification, accuracy, precision, breadth, depth, parsimony, analytic utility, innovation, intelligibility and relevance. Coppedge (2002) has condensed this list into three broad criteria:

- ✓ *Generality* (whether the theory is applicable and correct for a wide variety of cases);
- ✓ *Integration* (whether the theory is consistent with other theories and with the principles of mathematics or logic); and
- ✓ *Thickness* (whether the theory is sufficiently complex to capture real-world phenomena).

The assertion that there are two diametrically opposed views of theory – the scientific view and the layperson's view – is alluring in its simplicity. However, philosophers of science have long been aware that this dichotomy does not accurately reflect reality (Flew, 1984; Gieryn, 1999; Longino, 1990). In practice, scientists – sometimes even those in the same discipline – may attach different meanings to the term "theory." Some of the issues about which scientists might hold contrasting opinions include:

- ✓ The question of whether science proceeds primarily by *induction* (in which theories are constructed by generalising from large numbers of observed regularities) or *deduction* (in which theory-building comes first, and hypotheses derived from those theories are then tested against observation) (Durant, 1961);
- ✓ Whether theories "describe real states and structures of nature" (Flew, 1984, p. 320) or are best described as explanatory constructs that exist only in the human mind;

- ✓ Whether the observational data on which theories are based (or by which theories are tested) represent a mirror-like reflection of things as they actually are, or whether observations are inevitably shaped and distorted by pre-existing cognitive categories and structures (Rorty, 1979); and
- ✓ Whether science can (or should) ever be value-free (Ball, 2002; Capra, 1985).

The definitions and criteria of scientific theory offered above (namely, that a theory is a coherent set of abstract principles that should be general, precise, parsimonious, etc.) reflect their authors' implicit allegiance to a particular philosophical position regarding the nature of theory in science. This position is often referred to as the *deductive-nomological* view of theory or as the "covering-law model" of scientific explanation (Pratt, 1991). This model grew out of early twentieth century positivism and gained ascendancy after World War 2; its main exponents include Hempel and Oppenheim (1948), Carnap (1995) and Popper (1959). As its name implies, supporters of the deductive-nomological philosophy subscribe to the view that hypotheses are derived from theory by means of *deductive logic*, and that these hypotheses are put to the test through experiment. If the experimental data refute the hypotheses, confidence in the theory is correspondingly reduced.

The development of theory is thus viewed as a creative enterprise – "educated guesswork," so to speak. (In this regard, the deductive-nomological view differs from previous conceptions of science, in which theory-building was regarded as a process of systematic generalisation from observations.) Furthermore, it is claimed that a theory can never be *verified* or *proven true* – at best, it can only survive repeated attempts at *falsification* (Popper, 1959). A successful theory is therefore a hypothesis about universal relations that has, so far, not been falsified by means of contradictory evidence.

Despite its scepticism regarding the validity of theories, the deductive-nomological view holds that science gradually converges towards ever more accurate descriptions of the objective world (Jonassen, 1991). It is assumed that the laws of nature (including the laws governing human behaviour) really exist in the form described by successful theories. In other words, these laws are *discovered* – not made (Flew, 1984).

The natural sciences – most especially physics, which has achieved unparalleled success in formulating (or discovering) laws that have apparently universal validity – are held up by the deductive-nomological view as the ideal to which all other sciences should aspire. Progress in science is viewed as the development of theories that are progressively broader in scope. The great unification achieved by Sir Isaac Newton is often cited as a paradigm case: from the time of Aristotle until that of Newton, the motion of the planets, the behaviour of falling bodies and the tides of the ocean were each accounted for by means of a *separate theory*. Newton, however, succeeded in formulating a single, universal law capable of explaining all these disparate phenomena – the famous inverse square law of gravity. The great hope of the deductive-nomological approach was that such success can continue indefinitely – that it will be possible, one day, to integrate all natural and social sciences into a single, seamless whole, with all theories flowing deductively from the axioms of physics (Capra, 1985).

Another important feature of the deductive-nomological view is its insistence that science is a *value-free* enterprise. Because the laws of nature exist independently from the human mind, they are also independent of human preferences. Hence, the interests of science are best served by dispassionate, unbiased observation. Any considerations of human concerns

such as “goodness” or “beauty” can only serve to cloud scientists’ objectivity, thereby preventing them from attaining accurate, undistorted knowledge of nature’s laws (Mjøset, 1999).

During the second half of the twentieth century, the deductive-nomological view of science lost much of its influence. As Tarnas (1991, p. 404) put it: “In virtually all contemporary disciplines, it is recognized that the prodigious complexity, subtlety, and multivalence of reality far transcend the grasp of any one intellectual approach.” Even physics – once described as the queen of the sciences – found it increasingly difficult to hold on to its old epistemological certainties. In a quantum world, where the behaviour of subatomic particles is profoundly dependant on the type of observations to which they are subjected, the notion of “objectivity” begins to seem more like a convenient fiction than an accurate description of scientific practice.

With the decline of the deductive-nomological school of thought, numerous other conceptions of theory came to the fore. Mjøset (1999) classifies these into four broad categories: the “*law-oriented*,” “*idealising*,” “*constructivist*” and “*critical*” notions of theory. These perspectives deviate in various ways from the deductive-nomological ideal. They also differ from one another in terms of the criteria for successful theories that they regard as most important. These alternative approaches are discussed in the following sections.

#### a) *The law-oriented notion of theory*

The law-oriented notion of theory represents a modification of the deductive-nomological ideal in recognition of the fact that, despite considerable intellectual effort, the social sciences have hardly been able to discover a single law worthy of the term “universal” (Bateson, 2000; Vallacher & Nowak, 1994a). The regularities that have been uncovered are either trivial, or else apply only in very limited (but usually poorly defined) circumstances. The earlier optimism regarding the explanatory power of science was further dampened by a growing appreciation of the awesome complexity of the human brain. Although it might be possible in principle to explain human behaviour and experience in terms of the dynamics of vast networks of interacting neurons, it began to seem increasingly unlikely that such an integration of the social and natural sciences would ever be achieved in practice (Mjøset, 1999).

In answer to this dilemma, Merton (1949) argued in favour of what he called “middle-range theories.” He suggested that the social sciences were still too young to hope for the kind of unification and universality that have been achieved in, for example, physics. Instead, they should concentrate on developing theories that yield accurate predictions and plausible explanations in *particular contexts*.

Adopting a law-oriented approach to the social sciences entails foregoing the hope that one’s theories will constitute an accurate reflection of objectively existing natural laws. This is because the laws of nature are, by definition, universal; they are not switched on or off in particular circumstances. The fact that *appearances* may differ from one context to the next is rendered explicable by the notion that these contexts manifest different *interactions* among laws that are, in themselves, omnipresent. Hence, a regularity that only appears in a limited number of contexts does not qualify as a “law of nature”; it can, at best, be regarded as a law-like pattern – a “*quasi-law*.”

Compared to the deductive-nomological ideal, the law-oriented approach also represents a *relaxation of the falsification criterion* (which holds that a theory can be regarded as valid only as long as it is not contradicted by any empirical data) (Mjøset, 1999). If law-like patterns are context-specific, cases in which experiments yield results that are inconsistent with theoretical predictions can always be explained by arguing that the deviations were the result of undetected contextual influences. In order to deal with such vagaries of circumstance, proponents of the law-oriented notion of theory tend to rely on *statistical generalisations* from large numbers of observations to validate their hypotheses (Kerlinger, 1986).

### b) *The idealising notion of theory*

As the previous section showed, the law-oriented approach – with its emphasis on a multiplicity of middle-range theories – aims for strong contextual explanation at the cost of universality and parsimony. The *idealising notion of theory*, by contrast, represents a modification of the deductive-nomological model in the opposite direction: it retains the latter's focus on deduction from axiomatic systems, but pays the price in terms of a reduced ability to provide accurate predictions and explanations of observed phenomena. Thus, it narrows the gap between social science theories and the universals of mathematics and logic, but widens the gap between theory and the real world (Mjøset, 1999).

Whereas proponents of the law-oriented approach search for trends or regularities by means of *experiments* or *observations* involving large numbers of subjects, the methods of choice for supporters of the idealising approach are *mathematical modelling* and *computer simulations*. Since these models are regarded as *idealisations* of real-world phenomena, their authors are not unduly perturbed if their predictions rarely concur with empirical data. After all, the primary objective of such models is not to explain every *observed case*, but to yield *theoretical insight* into the universal principles thought to underlie the phenomenal world (Boudon, 1986).

The paradigm case of the idealising approach to theory is *neoclassical economics*. As was mentioned in Section 2.1.1, this discipline relies on a set of highly simplified assumptions regarding the rules governing human behaviour. Mathematical models employing concepts drawn from game theory (Von Neumann & Morgenstern, 2004/1953), chaos theory (Lorenz, 1993), complexity theory (Kauffman, 2000) and the like are then employed to understand how these simple rules might give rise to complex macro-level phenomena.

Similar techniques have been used to model other aspects of collective human behaviour. Trofimova, Potapov and Sulis (1998), for instance, have developed a computer model to simulate the formation of cooperative networks among people. The parameters of the model include population size, the sociability of individuals (in other words, their preferred number of relationships) and the compatibility between individuals. These authors found that, if a population is small, all its members are generally organised into a single, large cooperative network. As the population grows, however, it eventually reaches a point at which a fairly sudden “phase change” occurs. At this point, the network splits up into a large number of smaller clusters. The population size required to precipitate this phase change varies in inverse proportion to population members' level of sociability – in other words, the more sociable the population, the longer it survives as a single, cooperative whole.



Such a model does not pretend to capture the full complexity of human relationships and group dynamics, nor does it rely on empirical observation to check its predictions. Nevertheless, the fact that a model governed by such (relatively) simple parameters is capable of displaying unexpected behaviour reminiscent of real social dynamics engenders the enticing thought that it might be possible, one day, to capture the essence of actual social behaviour in models of similar elegance and simplicity. Thus, such models are perhaps best regarded as “*suggestive metaphors*” mapping out promising routes for future empirical investigation.

A further difference between the idealising and law-oriented notions of theory concerns the manner in which theories are validated. As was mentioned above, the law-oriented approach often makes use of statistical generalisations from large numbers of observations in order to cancel out the effects of uncontrollable contextual effects. The idealising approach, by contrast, is more likely to employ small numbers of illustrative *case studies* to demonstrate its theories (Coppedge, 2002).

### c) *The constructivist notion of theory*

It was pointed out earlier that the law-oriented and idealising notions of theory are similar in that both have retained a certain allegiance to the deductive-nomological ideal – in particular, to the hope that the sciences will eventually converge towards a true, unified model of the laws governing reality. Where they differ is in terms of the route chosen towards this ultimate aim. The law-oriented approach is through the construction of *middle-range theories* that may eventually congeal into a single, “grand theory of everything.” The idealising approach, on the other hand, involves the development of *high-level theories* that may eventually become sufficiently grounded to be reconciled with the observed facts.

In contrast to these two approaches, the constructivist view *rejects the ideal of total knowledge altogether*. Proponents of this approach assert that the universe is too complex, and the human mind too limited in comparison, to allow for unequivocal mental representations of reality (De Greene, 1991; Von Glasersfeld, 1984). An apt image of this approach to science is that of five blind men examining an elephant. Each touches a different part of the elephant’s anatomy (trunk, ears, legs, etc.) – hence, every man draws a different conclusion regarding the nature of the beast. In the constructivist view, the aspect of truth that each of us apprehends is profoundly shaped by our cultural background, our scientific training, our genetic predisposition and a host of other factors (Drolet, 2004).

Another well-known idea exemplifying the philosophy of constructivism is the concept of *scientific paradigms* as expounded by Thomas Kuhn (1970) in *The structure of scientific revolutions*. A paradigm, according to Kuhn’s definition, is a network of mutually supporting assumptions, norms and conclusions – a lens through which data is interpreted and a benchmark against which theories are evaluated. Paradigms are acquired through socialisation into particular scientific communities, and may be incommensurate with the paradigms of other disciplines or research groups. One paradigm can sometimes overthrow and replace another, but the dismantling of an entrenched system of thought depends as much on “the established customs of the scientific community, on aesthetic, psychological, and sociological factors, on the presence of contemporary root metaphors and popular analogies, on unpredictable imaginative leaps and ‘gestalt switches,’ even on the aging and dying of conservative scientists” (Tarnas, 1991, p. 361) as on the accumulation of contradictory data.



Kuhn also argued that, because paradigms are self-contained conceptual matrices that pose the questions as well as specify the means for answering them, there can be *no absolute criteria for choosing one paradigm over another*. Although members of a particular scientific community may regard their own paradigm as superior, the fact that each paradigm has its own criteria of success means that that very same system of thought might well be viewed as inferior from the perspective of another paradigm. Similar views have been expressed by philosophers such as Paul Feyerabend (1988) and Richard Rorty (1979).

Constructivism also rejects the deductive-nomological claim that value issues have no place in science. It recognises that “all science, though primarily concerned with the ‘Is,’ becomes implicated at some point in the ‘Ought’ (Worster, 1994, p. 337, in Robertson & Hull, 2003). Hence, it asserts that the statement “Science *should* be value-free” contains an inherent contradiction, as it is itself a value claim. In the constructivist view, such a claim simply confirms that the deductive-nomological model, as one paradigm among many, cannot escape from its own implicit set of values and preferences (Capra, 1985; Latour, 1987).

Another key feature of the constructivist view is that it recognises the fundamentally *metaphorical nature of scientific theories* (Hesse, 1966; Ziman, 2000). In this regard, it shares some common ground with the idealising view of theory. Whereas the latter draws its metaphors primarily from mathematical disciplines such as game theory, however, constructivists prefer to employ a much wider range of analogies. Natural sciences such as biology, and human sciences such as history, linguistics and anthropology are all regarded as potential sources of useful images. Because no single theory can hope to capture the true complexity of reality, a multiplicity of theories is viewed as most conducive to enhanced understanding of the world (Mjøset, 1999).

#### d) *Critical theory*

One criticism that is often levelled against constructivism is that it expounds a *relativist* view of science. If theories are nothing but myths shared by members of scientific communities, and if it is impossible to judge them against any objective criteria – these critics ask – how can it be that some theories allow us to build bridges, navigate spacecraft on million-mile missions, manipulate DNA and heal the ills of body and mind? Tarnas (1991, p. 438) elegantly summarises this criticism by referring to Feyerabend’s dictum that “anything goes in the battle of the paradigms”: “If *anything* goes, why does anything go at all?”

Critical theory regards itself as a counterweight to this relativism. It agrees with constructivism on the view that science cannot hope to achieve a single, unified theory of everything. It also concurs with the constructivist idea that science cannot be value-free. However, it rejects the constructivist notion that any value system (like any paradigm) is as good as the next.

An important exponent of critical theory is the German philosopher Jürgen Habermas (1971; Habermas, 1989), who drew a distinction between the *empirical-analytical* (or natural) sciences, the *historical-hermeneutic* sciences and the *action* (or social) sciences. He argued that these three types of sciences are driven by different “knowledge interests”: the empirical-analytical sciences strive for technological dominance; the historical-hermeneutic sciences for intersubjective understanding; and the action sciences for the *exposure of*

*illegitimate or inequitable social orders and the mobilisation of society to overthrow such systems.*

According to this view, the fact that the social sciences have not been able to uncover universal, unchanging laws of human behaviour is not a liability, but an asset: it means that *any aspect of the social universe is fluid and changeable* (Mjøset, 1999). Consequently, it must be possible to change for the better any social system that is found to be oppressive, exclusionary or unjust (Horkheimer, 1982). Furthermore, because scientists are part of society, they can never be purely dispassionate observers. They cannot help but pass their own ethical judgements regarding the social systems they observe.

Critical theorists include a number of feminist writers, such as Dorothy Smith (1990) and Evelyn Fox Keller (1985), who have pointed out the male bias in most of scientific history. According to these authors, the progress of science has been marked by a more or less systematic deprecation and marginalisation of feminine perspectives. Such male dominance is often perpetrated in extremely subtle ways – for example, by means of gender-based metaphors that support a patriarchal conception of nature as “a mindless, passive feminine object, to be penetrated, controlled, dominated, and exploited” (Tarnas, 1991, p. 407).

#### e) *Summing up the alternative views of theory*

As the preceding discussion illustrates, there are several alternative notions of theory, and each expounds a different view of the criteria that should be used to evaluate the success of a theory. In the *deductive-nomological* view, a successful theory is one that describes universal laws or principles from which testable hypotheses may be derived. These hypotheses must then conform to empirical data. In the *law-oriented* view, by contrast, a successful theory is one that accurately describes context-specific regularities or “quasi-laws.” The *idealising* notion of theory holds that a successful theory is one that offers creative metaphors for describing how simple laws or principles might give rise to complex phenomena. To some extent, this view is shared by the *constructivist* notion of theory. However, constructivism tends more towards the view that the success of a theory is entirely in the eye of the beholder; each scientific paradigm contains its own criteria for evaluating theories, and there are no absolute standards dictating which set of criteria should be adopted. Finally, critical theorists argue that a successful theory is one that stimulates social action and leads to the establishment of more legitimate social orders. The table below presents a simplified summary of the alternative views on theory discussed on the preceding pages.

**Table 2.1 A summary of five alternative notions of theory**

	Deductive-nomological	Law-oriented	Idealising	Constructivist	Critical
Type of theory	Universal	Context-specific	Universal; mathematical models, computer simulations	Diverse, metaphorical	Diverse, metaphorical
Do theories represent real laws of nature?	Yes	No – they represent “quasi-laws”	No – they are “suggestive metaphors”	No – they represent consensus within scientific communities	No – they represent consensus within scientific communities
Is it possible to obtain accurate, objective knowledge of the world?	Yes	Yes	Yes	No – perception is shaped by various non-rational factors	No – perception is shaped by various non-rational factors
Method of validating theories	Repeated attempts at falsification by experiment	Statistical tests	Case studies	Depends on the nature of the scientific paradigm	Depends on the nature of the scientific paradigm
Role of ethics in science	Science is value-free	Science is value-free	Science is value-free	Each paradigm has its own implicit values	Science must promote universal ethical principles
Characteristics of a successful theory	Generality, accuracy, integration	Ability to provide context-specific predictions	Ability to provide theoretical insight	N/A – each paradigm has its own self-validating criteria	Ability to inspire social action

### 2.2.2 Notions of theory in the systems sciences

Since the objective of this study is to develop a *systemic* model of public participation, it is appropriate to ask which notion of theory most accurately describes the one adopted by systems thinkers. The answer to this question is complicated by the fact that there is, in reality, not a single systems theory but multiple *systems theories* (Mulej, Vezjak, Kajzer, & Mlakar, 1999; Skyttner, 1996). The diversity of methods and approaches within this overarching category will be discussed in greater detail in Chapter 4. However, a sufficient overview of this diversity will be provided here to substantiate the argument that systems theorists can be roughly divided into two categories:

- ✓ Those espousing an *idealising* view of theory; and
- ✓ Those who lean towards *constructivism*.

The diversity of approaches within systems theory is partly due to its multidisciplinary origins. Some strands of systems thinking originated in the “hard” sciences – most notably

mathematics, physics, chemistry and engineering. Examples in this category include *cybernetics*, which is the study of self-regulating systems (Wiener, 1949); *chaos theory*, which has its roots in Edward Lorenz's (1993) computer simulations of meteorological systems; the closely related field of *dynamical systems theory* (Arnold, 1978), which is an area of mathematics that studies the behaviour of large sets of interdependent variables by employing differential equations; and the chemist Ilya Prigogine's (1984) theory of *dissipative structures*.

Although these approaches have been applied to the social sciences – for example, by MacRae (1951), Kiel and Elliott (1996), Nowak and Vallacher (1998) and Van Gelder (1995) – they retain their hard-science emphasis on quantification and mathematical modelling. Because of this emphasis, and because of their ambitions towards the development of a single theoretical framework to unify the social and natural sciences, these approaches most closely approximate the *idealising notion of theory*.

Other strands of systems theory have their roots in the “softer” disciplines of anthropology, psychology, management science and epistemology (a branch of philosophy). Examples of this category include *second-order cybernetics* (Von Foerster, 1992), which focuses on the construction of knowledge about cybernetic systems (its name derives from the notion that this process is itself best understood as a cybernetic phenomenon); the work of anthropologist Gregory Bateson (2000), who is best known for his studies of Balinese and New Guinea cultures and his double bind theory of the aetiology of schizophrenia; *family systems theory* (Bowen, 1978); and the “soft systems” methodology of Peter Checkland (1990) and Eliyahu Goldratt's (1992; 1994) *theory of constraints*, both of which apply systemic principles to solve business problems and manage organisational change.

These approaches differ widely in terms of their field of application and their degree of empirical and logical rigour. However, one point on which they agree is that there is almost never a single “best” way to view a problem or situation. By emphasising the role of the observer in structuring and filtering information, and by advocating the use of multiple perspectives and methodologies to understand the world, they align themselves most closely to the *constructivist notion of theory*.

Another science that has made important contributions to the development of systems theory is that of *biology*. The contribution of biology to the philosophical underpinnings of systems theory is, however, somewhat ambiguous. On the one hand, studies on homeostatic or self-regulating physiological systems (McCulloch, 1993) resonate closely with cybernetics, while the work of Stuart Kauffman (1992) on autocatalytic networks of biochemical reactions led to the foundation of *complexity theory* – a sister discipline of chaos theory and dynamical systems theory. Hence, it may be argued that contributions from biology have strengthened systems theory's commitment to the *idealising notion of theory*. On the other hand, the *autopoietic theory of cognition* – which grew out of the neurological research of Maturana and Varela (1980) – lends strong support to the idea that knowledge is *constructed*, not revealed, and that this construction is profoundly dependant on the characteristics of the knower.

Systems theory therefore finds itself pulled in two opposing directions: toward the elegant, all-embracing but otherworldly abstractions of the idealising notion of theory, and toward the plurality, scepticism and postmodern relativism of constructivism. Sometimes these antithetical impulses can be discerned in the writings of the same author. Bateson (1979;

2000), for instance, was an anthropologist by training, and was thus keenly aware of the existence of multiple worldviews. He also coined the term “double description” to describe the strategy of gaining deeper insight into a phenomenon by studying it from two or more contrasting perspectives. He illustrated this principle with the analogy of binocular vision, in which the brain combines the images received from two eyes and uses the subtle *differences* between these two images to construct a three-dimensional view. At the same time, however, Bateson devoted considerable energy to the development of what he hoped would be a unified theory for the behavioural sciences. The backbone of this theory is the concept of *logical types*, which he borrowed from the mathematical work of Alfred North Whitehead and Bertrand Russell (1910).

### 2.2.3 Notions of theory in this study

As the preceding discussion indicates, theory-building within a systemic framework can proceed from different assumptions about what kind of thing a theory is. It can regard a theory as an *idealisation*, which does not necessarily provide accurate predictions of particular observed events, but nonetheless offers valuable insights, suggestive images and analogies (often in mathematical form) of the universal principles suspected to underlie real-world phenomena. Alternatively, it can regard a theory as the product of a creative interaction between the observer and the phenomena being observed – a *construct* that represents one possible way of interpreting those phenomena. Yet another possibility is to *combine elements of these two approaches*. For example, theory-building may involve the development of a mathematical model or computer simulation, but with the caveat that it does not purport to be the only valid representation.

The latter alternative is most descriptive of the approach followed in this study. Although the theory of public participation presented in later chapters does not involve mathematical modelling, it does make extensive use of cybernetic concepts, Bateson’s idea of logical types and analogies borrowed from dynamical systems theory. These elements are all reminiscent of the *idealising* notion of theory.

However, a cursory overview of Chapters 6 and 7 will show that the study does not offer a single, unified model of public participation, but a *set of alternative models*. Each model emphasises different aspects of the subject matter – and setting these models side by side (Bateson’s double description) reveals more about public participation than would have been possible if all of them had been combined into a one (prohibitively complex) model, or if they had been presented in isolation. In this respect, the view of theory adopted in this study most closely resembles *constructivism*.

From the foregoing discussion, it follows that the criteria by which the theory of public participation developed in this study should be judged do not involve universality or the ability to predict the outcomes of particular participation processes from specified initial conditions. Rather, it should be judged by its ability to offer succinct but powerful descriptions of what *often* happens in such processes, to provide an intelligible map of the multitude of factors that might influence them, and to serve as fertile soil for the generation of hypotheses to guide future research (which may involve quantification and stringent empirical verification).

#### 2.2.4 Notions of theory in public participation

The primary objective of the foregoing exploration of diverse notions of theory was to define the type of theory to be developed in this study and to specify the criteria against which its success should be measured. However, the existence of contrasting views of theory also has wider relevance for public participation. Two of its ramifications will be briefly discussed here. The first concerns the possible effect of disparate conceptions of theory on the *practical implementation* of public participation processes. The second concerns its relevance for the *theoretical analysis* of such processes.

One of the key features of public participation processes is that they often involve participants from diverse social and intellectual backgrounds (Kelly & Van Vlaederen, 1995; Wellstead, Stedman, & Parkins, 2003). These participants may include members of the *general public* who stand to be affected by a proposed action, and who come from various walks of life. Another subset of participants might consist of *natural scientists and technical experts* who have been given the task of assessing the likely environmental consequences and concomitant risks of the proposed action. Yet another group may represent the *social sciences*; this group often consists of public participation facilitators and specialists charged with assessing the possible socio-economic consequences of the proposed action.

During a public participation process, these diverse groups are required to exchange views and information, and are often expected to achieve a degree of consensus regarding the most desirable course of action. Given their diverse backgrounds, however, it is likely that these groups will have *different notions of the nature and role of scientific theory* – although they might not be consciously aware of these differences. For example, members of the public may have a naïve view of theory, in which the terms denotes a mere “hunch” or unsupported assertion. Consequently, they might place little trust in natural scientists who invoke theory to support their arguments. The natural scientists in the group, on the other hand, may well espouse a deductive-nomological notion of theory. As was mentioned earlier, this perspective views science as a *value-free enterprise* divorced from questions of ethics or morality. Hence, if members of the public object to a proposed action on the grounds that it is ethically unacceptable, these objections might be interpreted by the experts as representing a wilful and irrational distortion of the facts. The likelihood of participants “talking past one another” is further increased if some of them – social scientists, for example – hold a law-oriented, constructivist or critical view of theory. As (Renn, 1998, p. 50) puts it: “For many technical experts, the philosophical position of constructivism seems absurd, for many social scientists and philosophers, the realism of the scientists seems naïve at best, and imperialist at worst.” As will be shown in Chapter 6, such differences are likely to sow mistrust among participants, and may well cause a public participation process to degenerate into escalating conflict.

Diverse notions of theory are also relevant to public participation from an academic point of view. One of the landmark publications in the field is a normative model of public participation developed by Thomas Webler (1995). This model, which is discussed in more detail in Chapter 3, is based on Habermas’s (1971) theory of discourse ethics. Because of its normative nature and its intellectual roots, this model is best described as an analysis of public participation from the perspective of *critical theory*. Although this model is widely acknowledged as a major contribution to the study of public participation, it has been



criticised on numerous fronts. As will be revealed in later chapters, many of these criticisms may be regarded as yet another manifestation of the profound differences between critical theory, the law-oriented and the constructivist notions of theory.

### 2.2.5 The process of theory-building

The previous sections described the type of theory of public participation developed in this study, and presented the criteria of success against which this theory is to be measured. This discussion paved the way for a description of the procedure followed during the actual *construction* of the theory. Such a description presents certain problems, however. Because theory-building is by definition a *creative endeavour*, it is impossible to provide a normative description of the processes involved. After all, if an activity can be pinned down in the form of a recipe, it hardly qualifies for the epithet, “creative.”

Virtually the only statement that can be made with confidence about the process of theory-building is that it is an *iterative, recursive process* that involves a combination of inductive and deductive reasoning. It entails studying the available data, constructing a tentative theory, determining whether the theory is consistent with the data, modifying or replacing the theory if necessary, identifying gaps or inconsistencies in the data, collecting more data where and if this is required, assessing the adequacy of the theory in the light of this new data, and so on. This model of theory-building has been described by various authors, especially in the field of qualitative social research (see, for example, Eisenhardt, 1989; Glaser and Strauss, 1967; and Strauss and Corbin, 1998).

In the context of this study, the “data” consisted of three bodies of literature: literature on *public participation* (including academic publications, reports describing particular public participation processes, public participation guidelines and notes taken by the author during personal experience in the field), *psychological literature*, and literature on *systems theory* (the latter two consisting of journal articles and books). Theory-building involved an oscillation between “data collection” and data analysis, interpretation and integration.

During *data collection*, public participation literature was searched for information on the functions of public participation, models and approaches to participation, common features of participative processes, problems that frequently occur in such processes, and theoretical questions pertaining to the scientific study of such processes. Psychological literature, on the other hand, was scanned to collect information on concepts and theories that might be used to describe and explain the behaviour of groups and individuals involved in participative processes. Finally, systems theoretical literature was mined for systemic concepts with the potential to link these two bodies of knowledge.

During data analysis, interpretation and integration, the tools obtained from systems theoretical literature were applied to achieve a creative synthesis of material gleaned from the other two sets of literature. The products of this synthesis eventually crystallised into a set of models depicting various aspects of participation. These models are briefly described in the following section.

### 2.2.6 Theoretical models of public participation developed in this study

The process of theory-building produced a set of five models grouped into two sets. The first set comprises three models that may be described as “macro-level” descriptions of public participation; they do not provide insight into its psychosocial dynamics, but offer an

integrated view of the various *system levels* relevant to public participation processes (including group decision-making, the problem setting and the broader socio-political and legislative context). They also propose a set of dimensions for describing the course and outcomes of public participation processes. Hence, they provided an essential foundation for the development of the second set of models.

The two models in the second category incorporate both the “micro-level” and “macro-level” aspects of participation. Thus, their focus is on the formal or procedural aspects of public participation as well as on its “human dimension.” Although these two models depict the same set of phenomena, they do so from different angles; they employ different systemic concepts and analogies to emphasise different patterns and interrelationships among variables.

Although not originally intended, the two sets of models correspond fairly well to Aristotle’s *typology of causes* (Emmeche, Køppe, & Stjernfelt, 2000). Aristotle argued that four types of question can be asked about any phenomenon:

1. What is its *material cause* (in other words, what is it made of)?
2. What is its *final cause* (i.e. what is its purpose)?
3. What is its *efficient cause* (i.e. what events led to this phenomenon)?
4. What is its *formal cause* (i.e. what abstract parameters or rules determined that these events should cause this phenomenon)?

The first macro-level model may be described as a “structural model” of public participation; its main emphasis is on the role-players and institutions involved in public participation. Hence, it corresponds to Aristotle’s *material causes*. The second macro-level model depicts the *functions* of public participation as well as the necessary conditions for fulfilling those functions; hence, it approximates Aristotle’s *final causes*. The third macro-level model focuses on problems frequently encountered in public participation, as well as on their causes and consequences. Because it views such problems from a *process* perspective, it is reminiscent of Aristotle’s *efficient causes*. Finally, the two “micro/macro-level” models depict the psychosocial parameters that influence the shape of public participation processes. These two models therefore resemble Aristotle’s *formal causes*.

### 2.3 APPLYING THE THEORY TO ADDRESS PRACTICAL PROBLEMS

It was mentioned above that the theory of public participation developed in this study is to be evaluated in terms of its ability to distil the tremendous complexity of participative processes into concise but valid descriptions, as well as its ability to generate hypotheses for future research. Since the theory is intended to shed light on factors that might influence the success or failure of public participation processes, an additional measure of its success is its ability to yield recommendations in terms of the *design and implementation of more effective processes*. The formulation of such recommendations represents the third and final objective of this study.

Parties who might benefit from such recommendations include *public participation facilitators* – especially members of the profession who develop public participation guidelines, and are thus in a good position to reach a wide target audience. *Government officials* who are charged with the responsibility of issuing authorisations for proposed

projects may also benefit, as the recommendations will place them in a better position to assess whether the public participation processes forming part of applications for authorisation were adequate. Finally, the recommendations may also benefit members of the *general public* who choose to become involved in public participation processes, as these will enhance their understanding of the processes and enable them to participate more effectively.

## 2.4 THESIS OUTLINE

This section provides an overview of the content of the remaining chapters of this thesis. As was mentioned above, the process of theory-building consisted of two interdependent activities: *data collection* and *data synthesis*. Data collection involved a focused review of *literature* on public participation, on psychology and on systems theory. The following three chapters summarise the results of this literature review:

- ✓ *Chapter 3* is an introduction to the field of public participation, and thus sketches the background for the rest of the thesis. It describes the history and benefits of public participations, its areas of application, and a selection of available models and techniques for public participation. The focus is then narrowed to public participation in South Africa – its history, applications, legislative framework and particular challenges. The chapter closes with a brief discussion of public participation as an academic discipline.
- ✓ *Chapter 4* provides an overview of systems theory. It sketches the historical roots of systems theory and offers a definition of a system as a *network of variables* that exert mutual influence on one another. It discusses the types of relationships that might exist among variables – including positive and negative *feedback* – and emphasises the point that many adaptive systems are subject to an “*economics of flexibility*.” The concepts of *logical typing* and multiple *levels of description* are also introduced. Another section explores methods developed in *dynamical systems theory* – in particular, the notion of “*phase space*” – to describe the overall behaviour of systems. The final section explores the possibility of committing *errors in logical typing* when analysing system dynamics.
- ✓ The theme of levels of description appears again in *Chapter 5*, where it is used to structure an overview of psychological concepts and theories. The first two sections of this chapter deal with the biological basis of psychology and with attitudes, cognition and other matters relevant to the behaviour of *individual* human beings. The next section moves on to a higher level of description by focusing on the interaction, relationships, etc. *between* individuals. The final section adopts yet a higher level of description; it concentrates on *group dynamics* that emerge from the interaction among large numbers of individuals. This chapter does not attempt to provide an exhaustive overview of the subject of psychology and all its branches; instead, it presents a selective review of topics. The main criterion by which topics were selected was their relevance to the models of public participation presented in Chapter 7.
- ✓ It was mentioned earlier that three models were developed in this study to summarise the various dimensions along which public participation processes may be described. These “*macro-level*” models are presented in *Chapter 6*.

- ✓ The two models that incorporate the “micro-level” or psychosocial dynamics of public participation are described in *Chapter 7*. Both models make use of several aspects of systems theory discussed in *Chapter 4*. The first model views public participation through the lens of *logical typing* and the *economics of flexibility*. The second adopts a more epistemological stance by emphasising the fact that public participation processes may be described at more than one *level* – both by external observers and by participants themselves.
- ✓ *Chapter 8* employs the findings of the study to formulate recommendations for enhancing the practice of public participation. It also evaluates the theoretical models developed in the study against the criteria set out in *Section 2.2.3* above, and it identifies a few possible avenues for further research.

The figure below depicts the various components of this thesis and their relationships to the study’s objectives.

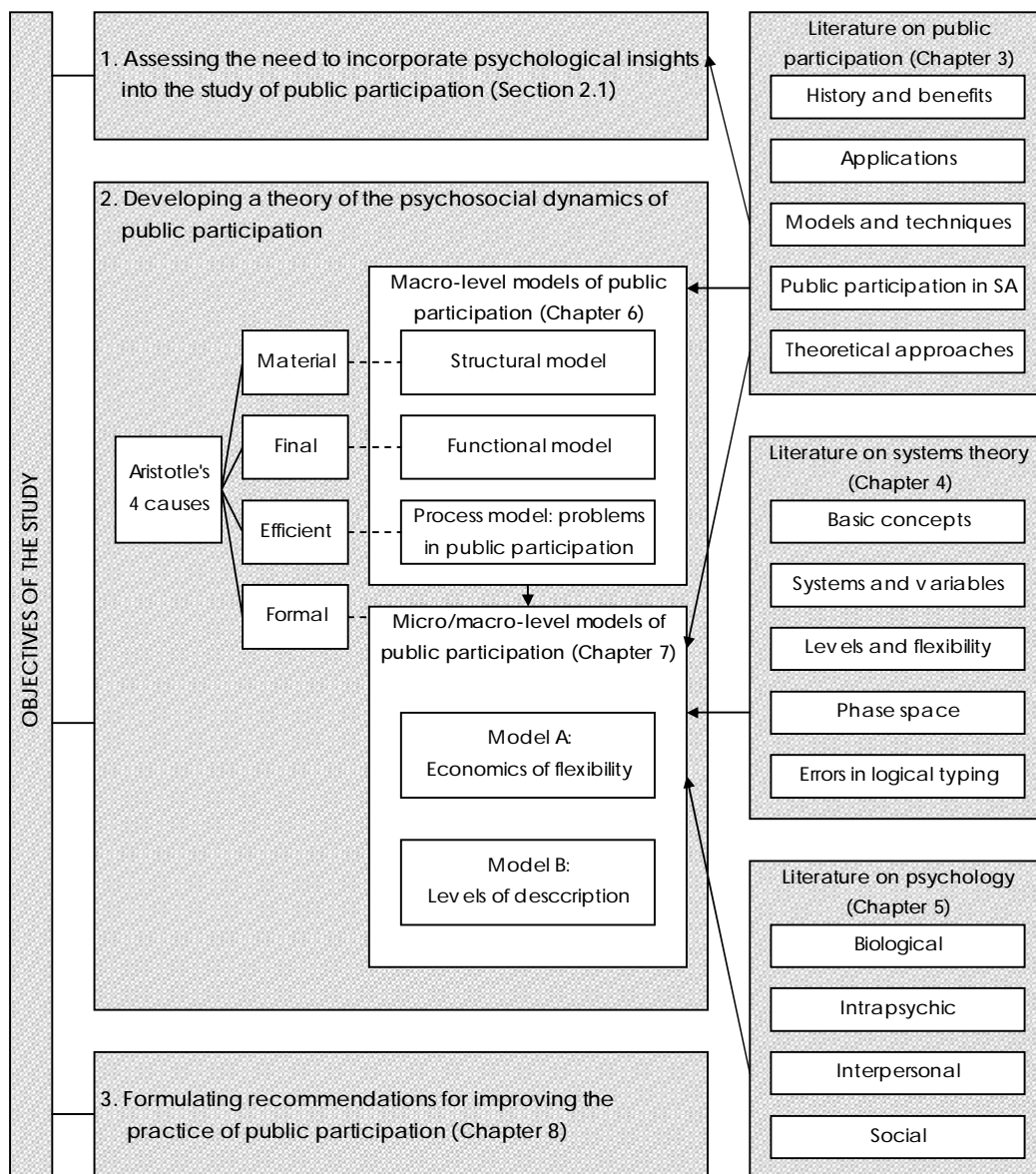


Figure 2.1 Study objectives and chapter outline

## CHAPTER 3: PUBLIC PARTICIPATION IN PERSPECTIVE

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*In Italy for thirty years under the Borgias they had warfare, terror, murder and bloodshed but they produced Michelangelo, Leonardo da Vinci and the Renaissance. In Switzerland, they had brotherly love; they had five hundred years of democracy and peace and what did they produce? The cuckoo clock.*

– Orson Welles

This chapter provides an overview of the history, applications and methods of public participation. The field is first viewed from a global perspective, after which the focus is narrowed to the South African context. In closing, a few significant contributions to the theory of public participation are discussed.

### 3.1 A HISTORY OF PUBLIC PARTICIPATION

This section provides a brief summary of the history of public participation. The beginning and end of the section assume a slightly speculative tone, the former being related to the origins of participatory decision-making in the mists of prehistory, and the latter to the possible future directions of public participation. The more factual parts in between are admittedly somewhat biased towards Western history, but this bias can perhaps be justified on the grounds that public participation – in the sense that the word is commonly used today – has its roots in Western thought and political practice.

#### 3.1.1 Prehistory

The human species is roughly a million years old. For ninety-nine percent of its history, its members were hunter-gatherers who lived in small, nomadic groups (Barkow, Cosmides, & Tooby, 1992). The social organisation of these groups was not too dissimilar from that found in some other primate species, such as chimpanzees. What set humans apart from all other animals, however, was their ability to conceptualise, to make tools and – above all – to use language (Deacon, 1997). With the ability to speak came the ability to engage in joint planning and decision-making – and it is probably this attribute more than any other that accounts for the phenomenal success of human beings as a species. It enabled our ancestors to organise hunting and foraging expeditions, and to develop strategies for protecting themselves against the environment far more effectively than any other species is able to do (Leaky & Lewin, 1992).

It is impossible to draw solid conclusions about the form that decision-making took in these prehistoric communities. However, given the fact that primitive human society consisted of small, family-based clusters in which individuals were highly dependent on one another for survival, it is reasonably safe to conclude that various members of the tribe contributed by sharing their knowledge and suggesting alternative courses of action (Tindale, Kameda, & Hinsz, 2003). Because the cooperation of everyone was required to ensure a plan's success, final decisions were probably based on a degree of consensus. In other words, the form of



decision-making employed by our prehistoric ancestors most probably had many features in common with modern-day public participation.

It is therefore no exaggeration to claim that public participation is a continuation of the most ancient form of human governance. It lies “at the core of our social and biological heritage... Humans have evolved to coordinate group action by discussion and shape individual action through social learning and reflection” (Dietz, 1995, p. xviii). The growing prominence of public participation in contemporary political practice is more than an innovative approach to modern problems; it is also a return to our prehistoric roots.

### 3.1.2 The advent of democracy

Although the participative, egalitarian ethos described above persisted in many tribal societies across the globe (Grinde, 2005), it generally made way for other forms of governance wherever hunting and gathering were replaced by agriculture and the nomadic way of life by an existence centred around towns and, later, cities. These new forms of social organisation were mostly characterised by centralised authority and hierarchical power relations. The Age of Emperors that saw the rise and fall of Babylon, the reign of the pharaohs and the might of Persia was also the age of the god-kings whose dominion over their subjects was virtually absolute (Boardman, 1986).

One exception to this rule was the ancient Greek city-states – most notably Athens. The form of government adopted by the Athenians most closely resembled what we call *direct democracy* today. It entailed government by the people: political deliberations took the form of popular assemblies in which every citizen was directly consulted, and decisions were taken on the basis of majority vote (De Ste. Croix, 2005). This system was rendered practicable by the fact that a Greek city-state’s population rarely exceeded 10 000 people, as well as by the fact that women and slaves were excluded from citizenship and hence also from political participation (Abelson et al., 2003).

### 3.1.3 The Middle Ages

Ancient Greek democracy may be regarded as a mere interlude in a history characterised by more or less unilateral domination of the populace by a small number of powerful leaders. As the golden age of the Greek city-states waned, Alexander the Great established an empire that spanned most of the known world (Knox, 1999). The Greek empire was eventually eclipsed by that of Rome, and by the time of the Middle Ages, rule was firmly entrenched in the hands of monarchs and the Roman Catholic Church (MacDonald, 1984).

Nevertheless, efforts to achieve a more equal distribution of power did not disappear entirely. In Medieval Europe, these efforts took the form of powerful interest groups, or “estates,” who exerted pressure on church and state to consult them in political decisions. These groups eventually combined forces to become the forerunners of modern parliaments or legislative assemblies (De Villiers, 2001; Knox, 1999).

### 3.1.4 The Age of Enlightenment

The Middle Ages gave way to the great intellectual and cultural flowering of the Renaissance, and the humanist philosophy and renewed interest in classical culture that characterised this epoch began to set the stage for a resurgence of democracy (Dickens,



1972; Horvath, 1998). A later development that reinforced this trend was an intellectual movement known as the Enlightenment. This movement began in England in the sixteenth century, but eventually took foothold across Europe and in America. The writers, thinkers and philosophers of the Enlightenment saw themselves as replacing the darkness and superstition of the Middle Ages with the “light of reason.” United by the belief that reason had the power to lead humanity toward a state of earthly perfection, they argued for intellectual freedom and equal dignity for all people (Gay, 1996).

The philosophy of public participation owes one of its key concepts to the work of the Enlightenment thinker Jean-Jacques Rousseau (Delaney, 2005). He coined the term “*the general will*” to denote the collective interests of all members of a society. The collective will does not precisely equate to the will of the majority; rather, it is the will of the supra-individual entity that is created when individuals come together and subject themselves to the terms of a social contract. The collective will is what we would all want if we were truly free and truly ourselves (which, in Enlightenment thought, implies being truly good) (Rousseau, 1987).

Rousseau regarded the general will as the sole source of legitimate sovereignty – something that cannot but be directed towards the common good (Flew, 1984). He also regarded citizen participation as an essential condition for a healthy society. In his view, “citizens must engage in political affairs to keep the state alive, for only through interaction can the general will emerge out of the plurality of particular wills” (Webler & Renn, 1995, p. 21).

### 3.1.5 The first public sphere

Another feature of the social milieu of the time was the emergence of what Habermas called the first “*public sphere*” (Habermas, 1989; Holub, 1997). A public sphere may be defined as a site for the formation of politically-oriented public opinion – a social space to which all citizens have access, in which all citizens are considered equal, and where all citizens are free to engage in dialogue and express their views (Webler & Renn, 1995). A public sphere is free from interference by the state and the market, and it is distinct from the “private sphere” in that it is concerned with public good rather than individual gain.

It has been argued that the first public sphere emerged in eighteenth century Europe through two institutions: the salons and coffee houses that were the meeting places of the intelligentsia, and the rise of an independent press (De Villiers, 2001). The functioning of the public sphere transformed the nature of political authority. Thanks to a free, market-based press, the activities of government were increasingly brought out into the public domain; thanks to the climate of intellectual debate created by salon society, these actions were subjected to relentless critical analysis.

The political climate of the time eventually gave rise to both the French and the American Revolutions. The humanistic ideals of the Enlightenment were subsequently enshrined in the American Declaration of Independence (1776) and the French Declaration of the Rights of Man and of the Citizen (1789) (Lewis, 2003). In the aftermath of these revolutions, the development of democracy was characterised by a “gradual integration of citizens in the political system” (Webler & Renn, 1995, p. 17). Democratic reforms were gradually introduced in most European countries. These included bills of rights, equal access to voting privileges, as well as permission to form political parties and labour unions.

### 3.1.6 The swing towards representative democracy

The type of democracy that became the standard Western form during the early nineteenth century is characterised by universal suffrage (which implies that the vote of every adult citizen is given equal weight) and elections in which representatives are voted into office to make decisions on behalf of the electorate (Hirst, 1990). In other words, it is a form of *representative democracy*. Unlike the democracy of ancient Greece, this system did not involve voting on individual decisions. Nevertheless, it was characterised by the continued existence of a vibrant public sphere – which meant that citizens retained a healthy interest, as well as a measure of input, in the affairs of government (Crossley & Roberts, 2004).

As the nineteenth century wore on, however, questions began to arise about the ability of ordinary citizens to participate meaningfully in the affairs of government. These questions were motivated by the fact that the challenges with which states had to contend were becoming increasingly complex. The gap between the level of expertise required to understand and address relevant social, economic and technical issues and the general knowledge possessed by the average person was becoming more and more pronounced. As the nineteenth century gave way to the twentieth, this growing complexity began to pose challenges to governments as well. Most legislators “simply lacked the capacity to develop the necessary technical expertise, establish the needed administrative routines, and concentrate the required attention on the narrow sets of issues that twentieth-century governments had to address – whether it was financial markets, food and drug safety, transportation, energy or environmental quality” (Fiorino, 1995, p. 223).

The solution to this problem adopted by many governments involved investing a greater degree of authority and autonomy in *administrative agencies*. This arrangement established a division of labour within government: whereas legislatures *formulate* policies in accordance with the preferences of the electorate, administrative agencies apply their technical expertise to *implement* those policies. It also effectively increased the distance between citizens and the executive tier of government: whereas legislatures are chosen through popular elections, administrative officials are appointed by the state. They are therefore not directly answerable to the people.

Habermas (1989) argues that the early twentieth century saw a subtle but fundamental change in the workings of democracy. He described this change as the “disintegration of the public sphere” (Webler, 1995, p. 43). It might be that the alienation between government and citizenry due to the rise of administrative power was one of the causes of this disintegration. Other contributing factors were expanded state intervention and an increasingly commercial preoccupation of the media. The symptoms that characterised the demise of the public sphere included increased distrust of government and a significant decline in popular involvement in public affairs. In other words, the very democracy that had been so dearly bought was now met with growing indifference.

### 3.1.7 The renewal of public participation

Even as the public sphere crumbled, however, various forces were already at work to swing the pendulum in the opposite direction. In some democratic countries, a trend had established itself of granting participatory rights beyond the sphere of voting to “those with an interest” in a decision (Woltjer et al., 2002, p. 8). These “interested parties” were usually

limited to property owners, who were considered to have a standing in official procedures and had to be consulted before governments made decisions. Two other factors that contributed to renewed interest in participatory decision-making were the *labour movements* that, from the 1920s onward, “demanded more power to influence decisions of corporations” (Webler & Renn, 1995, p. 18) and the *ecological movement* of the 60s and 70s, which highlighted the shortcomings of representative democracy in dealing with environmental issues and argued for greater government accountability (Dietz, 1995).

The environmental movement roughly coincided with (and may perhaps be regarded as a manifestation of) a much broader cultural groundswell: the rise of *postmodernism*. It is difficult to provide a succinct definition of postmodernism, as it is complex, ambiguous, and conveys different meanings in different contexts. Nevertheless, it is characterised by what Tarnas (1991, p. 295) calls “a few widely shared working principles.” These include “an appreciation of the plasticity and constant change of reality and knowledge, a stress on the priority of concrete experience over fixed abstract principles, and a conviction that no single a priori thought system should govern belief or investigation.”

There is hardly a single facet of life that has remained untouched by the postmodern revolution. In science it manifested itself as rejection of the deductive-nomological paradigm, which was discussed in Chapter 2, and the embrace of a constructivist and critical worldview. In art and literature, its trademark is an attitude of ironic or playful self-reflection. In religion, it is characterised by scepticism of dogma, greater openness to the experiential aspects of religion and renewed interest in alternative spiritual traditions (Thompson, 2004).

The postmodern movement had two effects on the political sphere that are particularly relevant to public participation. The first involved *increased mistrust in science and technology* (Drolet, 2004). Science was no longer viewed as a completely objective enterprise elevated above human values and prejudices, and it was no longer seen as the only valid source of knowledge about the world. This conviction led inevitably to the conclusion that decisions around technology – especially decisions that have the potential to impact on the environment and human health – should be scrutinised from multiple perspectives, and that value issues should be explicitly involved in technical debates.

Postmodern thought also cast the *rise of administrative power* in contemporary democracies in a new light. As was mentioned above, administrative agencies represent a solution to the increasing complexity of governmental functions. They were originally regarded as “neutral ‘transmission belts’ that took the direction of the legislature, applied their technical knowledge and impartial view of issues, and acted according to the legislature’s wishes” (Fiorino, 1995, p. 223). This conception of administration is often referred to as the “rationalist” model.

As the view of science as a value-free enterprise declined, however, the assumption that administrative agencies could act as purely rational, impartial and objective implementers of the legislative will was also cast in increasing doubt. It was recognised that the “administrative world was more complex, more laden with value choices and political conflict, than the rationalist model implied” (Fiorino, 1995, p. 223). If every issue can and must be viewed from multiple angles, there is no guarantee that administrators will take all these multiple viewpoints into account. And if administrative officials cannot escape value

choices, the fact that they are not elected by the people but appointed by the legislature means there is no guarantee that their values will be consistent with the general will.

The only way to reconcile such a situation with the democratic ideal of popular sovereignty is by opening up channels – over and above voting – through which citizens can have a say in government decision-making at both a legislative and an administrative level. In short, democracy in a postmodern world is democracy that incorporates strong elements of public participation (Gunder, 2003). It is democracy that narrows the gap between the state and the people, and that promotes the revitalisation of the public sphere as a space for the construction of shared meanings and understandings of the common good.

### 3.1.8 Public participation in the world today

As a result of the various factors described above, the trend in the international political arena is towards more participatory forms of decision-making (De Villiers, 2001). Nevertheless, differences can be discerned among countries with regard to the nature and extent of participation. Among these differences are those that relate to whether or not public participation is required by law, the degree to which participation by the general public is encouraged, the level at which participative decision-making takes place, as well as the general tone of public participation processes.

As far as legal requirements are concerned, legislatures in some countries (such as Uganda) have a constitutional obligation to ensure public participation (Nkongi, 2002). Legislatures that are governed by older constitutions and political arrangements, on the other hand, tend to enjoy greater sovereignty (De Villiers, 2001). In such countries, public participation is widely accepted as good practice, but it is not enforced by law. In Germany, for example, the House of Representatives has the discretion to exclude the public (Berlin House of Representatives, 1995). The Danish Constitution also places no obligation on the legislature to facilitate public involvement or to solicit public input and consider the views of interested parties (Hunter, 1993).

Countries also differ in terms of the proportion of citizens that actually participate in public decision-making. Here, an interesting contrast emerges between Germany and Switzerland. Germany – like South Africa – uses participation as an antidote for the authoritarian regime it experienced in the past. However, public participation in Germany places considerable emphasis on the role of expert witnesses. In so doing, it tends to limit participation to the elite (De Villiers, 2001). Switzerland, on the other hand, has a long tradition of soliciting broad-based input in government decisions by means of frequent referenda (Kirn, 2005).

Decisions informed by public participation can be categorised in terms of the *level* at which they reside. Decisions related to policy choices (such as a national energy strategy), for example, occupy a higher level in the legislative system than decisions pertaining to site-specific issues (such as the question of whether or not to authorise the construction of a power station at a particular location). Here, too, differences among countries can be discerned. In European countries, public participation is used primarily to “infuse public sentiments into national policy making.” In the United States, by contrast, “participatory innovations ... have been much more along the lines of immediate problem solving” (Webler & Renn, 1995, p. 20).

Yet another dimension along which countries can differ is their general approach towards public participation. Here, too, the United States stands in contrast to most European states.

This contrast is particularly evident in the approach to participation in environmental policy-making. In America, such policy-making tends to be confrontational and formal (Woltjer et al., 2002). In European countries, on the other hand, it is generally more cooperative, informal and consensual (Webler & Renn, 1995). Approaches to public participation on the two sides of the Atlantic also differ in terms of their openness to innovative models and techniques. Dienel and Renn (1995, p. 136) point out that “US citizens distrust pre-fabricated participation models and suspect hidden agendas with such an approach.” Meanwhile, “Europe has become a major testing ground for new methods in citizen participation in the area of national policy formation, primarily because the new social movements were much more of a shock for the established parties and power players” (Webler & Renn, 1995, p. 20). In sum, it appears that the form taken by public participation in any particular country depends as much on its history and culture as on its formal legislative and institutional arrangements.

### 3.1.9 The future of public participation

As the foregoing sections indicate, the history of participative decision-making was influenced by a variety of cultural and political factors – not all of which could have been predicted in advance. It is therefore difficult to make predictions regarding the future of public participation. One conclusion that can be drawn with reasonable confidence, however, is that current trends – such as globalisation and the increasing pace of technological innovation – will leave their mark on participation in the years to come (Ravetz, 1997).

One recent development that is bound to have far-reaching effects on public participation is the rise of the Internet (Ferdinand, 2000). As a participatory tool, it can be used to raise awareness, to increase the visibility of issues, to disseminate information, to exchange viewpoints and to circulate petitions on a scale never imagined before. In cyberspace, groups and individuals on different continents can engage in debate as effortlessly as citizens in an ancient Greek city square (Ball, 2002).

However, the Internet – like any other technological innovation – is a two-edged sword. While it may facilitate communication and reduce the distance between people, the fact that it is accessible to a fairly small proportion of the world’s population means that this achievement might come at the cost of excluding the majority of the poor and uneducated (Mbeki, 1998). If this is the case, it will serve to reinforce and exacerbate existing inequalities rather than further the ideals of democracy (De Villiers, 2001). In the light of this argument, Webler (1995, p. 461) warns public participation facilitators against “jumping on the electronic bandwagon.” Whether or not “electronic democracy” delivers on its promises will depend on something much more elusive and fundamental than hypertext and transfer protocols: it will depend on the willingness of people to reach across boundaries to achieve mutual understanding and work towards the common good.

## 3.2 BENEFITS OF PUBLIC PARTICIPATION

The increasing prominence of public participation across the world can only be understood in light of the fact that it offers numerous advantages in comparison to purely representative democracy. Before an attempt is made to define the benefits of public participation, however, it should be noted that role-players in any participation process may differ greatly



in the utility they hope to derive from it. For example, one organisation might convene a participatory forum as a means of building better relationships with surrounding communities (Kelly & Van Vlaederen, 1995). Another might engage in a similar process, but simply for the reason that it wishes to avoid costly litigation (Carnes, Schweitzer, Peelle, Wolfe, & Munro, 1998; Sinclair & Diduck, 2001). Similarly, some citizens might decide to participate because they hope it will enable them to resolve long-standing conflicts (Raimond, 2001); others might not be interested in hearing anyone else's point of view, but might participate simply with the aim promoting their own agenda.

The objective of this section is to justify the important place held by public participation in contemporary society. It does not attempt to identify every possible "use" to which public participation may be put; instead, it focuses on those consequences of participation that generally contribute towards the "greater good." These generic virtues of participation are usually the prime movers behind government decisions to promulgate legislation that requires citizen involvement in certain types of decisions.

### 3.2.1 Contributions of public participation to effective decision-making

Among the benefits of public participation is its contribution toward enhancing the probability that a policy, programme or project will be successful (Allen, 1998). It does so in several ways:

- ✓ **Information.** In order to ensure that the consequences of an action are in the best interests of all concerned, planning that action must be done on the basis of accurate *information*. Involving members of the public in the decision-making process enables them to supply various types of information that increases the probability that an intervention, policy, programme or project will be successful. In the initial planning stages, before any final course of action has been chosen, participants may contribute "innovative ideas not seen ... by established decision makers or experts" (Dienel & Renn, 1995, p. 125). They may also supply information on public *values* and *preferences* (Hytönen, Leskinen, & Store, 2003; Raimond, 2001). The importance of such information derives from the fact that decisions taken without consideration of such values and preferences tend to suffer from a lack of public acceptance. Third, participants may supply important *factual* information. People most familiar with a problem are often in possession of local and anecdotal knowledge that is vital to the success of a plan (Jackson, 2000; Sekgobela, 1986). Scientific analysis and judgement, because they rely on systematic observation and general theories, tend to disregard information of this kind (Renn et al., 1995a).
- ✓ **Dispute resolution.** Webler (1995, p. 23), among many others, has pointed out the "practical usefulness of participation in ... reducing or resolving conflict." Public participation may serve as a forum for stakeholders to resolve differences regarding factual issues, values or preferences (Gregory, McDaniels, & Fields, 2001). This function of public participation is especially important in cases where the issues under consideration are controversial.
- ✓ **Accountability.** Because public participation increases the transparency of a decision-making process, it provides a powerful incentive for implementing agents (be they government or private organisations) to take actions that will be in the best interest of all affected parties (Brook, 2001; Sekgobela, 1986). Thus, public



participation “is essential to having a responsive and responsible government” (Renn, Webler & Wiedemann, 1995b, p. 7).

- ✓ **Stakeholder support.** Public participation can reduce stakeholder opposition to a planned initiative by “allaying undue fears” (DWAF, 2001, p. 10). The mere fact that members of the public have been asked to give their input often also increases their support of a decision (Allen, 1998; Fearon, 1998, in Abelson et al., 2003; Lessard, 1998). Popular support is vital whenever people perceive that they have a lot to gain or lose by a decision, or when that decision will significantly affect the interests (whether economic, political, environmental, social, or cultural) of some people or groups more than others. Because there is strength in numbers, the public often holds absolute veto power over decisions by government agencies (Daniels, Lawrence, & Alig, 1996; Del Furia & Wallace-Jones, 2000).
- ✓ **Contribution of resources.** Financial resources for implementing actions in the public sphere are usually derived from government treasuries or from the bank accounts of corporations. However, members of the public are sometimes able to contribute other types of resources. For example, they may donate their time to help *monitor* the implementation and impacts of a decision (Boyce, 2001; Jackson, 2000; O'Rourke & Macey, 2003; Sekgobela, 1986). This can help to create a “sense of ownership that helps stakeholders create positive impacts on initiatives” (DWAF, 2001, p. 10).

### 3.2.2 Empowering functions of public participation

Even if a particular participation process does not lead to better decisions or more effective action, it may still have other, less tangible or less immediate benefits. A few such benefits are described below:

- ✓ **Education.** There are a number of ways in which a participation process is an educational experience. First, citizens involved in such a process are often supplied with copious technical information related to the issues at hand. Such information inevitably broadens their *general knowledge* in various fields, ranging from environmental science to energy generation to government policy (Boyce, 2001). For example (Woltjer et al., 2002, p. 4) point out that mechanisms for involving the public in decision-making around environmental policy “not only help improve policies (by providing consumer input on needs and priorities) but also contribute to generally increasing consumer awareness and commitment to environmental issues.” Second, their involvement in *dispute resolution* processes enhances citizens’ understanding of what it means to work out differences in a cooperative manner. Finally, because public participation requires that citizens engage reflect on their own values and preferences, it may enhance their *self-understanding* and *self-confidence*. As Webler (1995, p. 72) points out, one of the effects of participation is the “construction of an image of self at both the personal and community levels.” Participants have often commented on the fact that the participation experience “helped them become better communicators and more confident in creating cooperative working styles” (Dienel & Renn, 1995, p. 137).
- ✓ **Moral development.** In addition to enhancing citizens’ intellectual development, it also fosters moral growth (Fearon, 1998, in Abelson et al., 2003). This benefit of

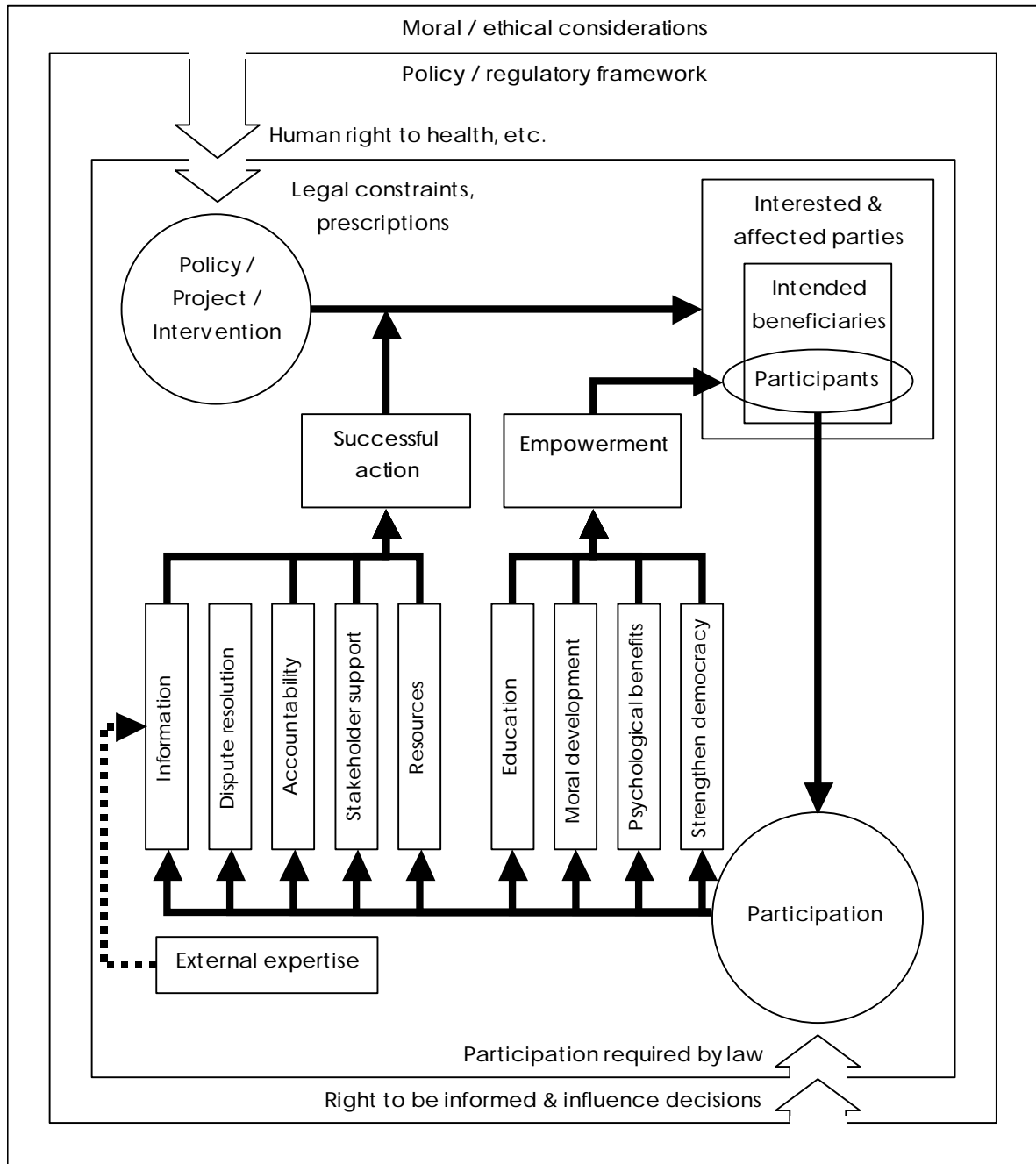
participation was recognised as far back as the time of Rousseau and John Stuart Mill, who argued that “people ‘learn’ democracy by becoming engaged in its workings. The result of the learning experience is an awakening to the realization that the public and private interests are linked” (Webler & Renn, 1995, p. 22).

- ✓ *Psychological benefits.* Recent studies employing empirical measures of subjective well-being suggest that participation may also have positive emotional effects. Comparisons between various countries have found a significant correlation between the extent to which a country allows citizens to *influence political processes* and the *average happiness* reported by its population. The high level of subjective well-being reported by the Swiss, in particular, seem to be partly a result of that country’s “unique system of direct democracy, in which citizens vote in several referenda a year, covering everything from government spending to naturalization of foreigners.” The feeling of self-determination afforded by such participatory practices seem to be “a big contributing factor to overall happiness” (Kirn, 2005, p. 51).
- ✓ *Strengthening democracy.* In the final analysis, every participation process is an affirmation of the fundamental principle of democracy – namely, that *people have a right to be involved in decisions that affect them* (Webler, 1999). It was suggested earlier that democracy, despite its numerous flaws, is still the best system of governance that the human race has developed. Hence, public participation may be regarded as an ethical imperative – and this imperative transcends all immediate or long-term benefits that may accrue from it (Sekgobela, 1986).

The virtues of affirming democratic values, educating citizens, fostering their moral development and increasing their self-awareness and happiness may be regarded as the “empowering” functions of public participation (Dienel & Renn, 1995) to distinguish them from its more “instrumental” functions (supplying information, resolving disputes, increasing accountability and stakeholder support and augmenting available resources). The relationship between these two categories of functions is depicted in Figure 3.1. The figure also highlights a number of other relevant issues:

- ✓ Every project, policy or intervention has a set of *intended beneficiaries*, who may be a corporate entity, members of a community, entire sectors of society or humanity as a whole. These intended beneficiaries form a subset of the spectrum of individuals or groups who may be affected by the decision, or who have a professional or personal interest in it (the so-called set of “interested and affected parties”) (DEAT, 2002).
- ✓ Stakeholders who volunteer or are selected to participate in decision-making around the project, policy or intervention represent (and may be members of) both the set of intended beneficiaries and the broader range of interested and affected parties.
- ✓ In order to ensure that decisions regarding the project, policy or intervention are based on accurate information, *external experts* (who may be neither affected by nor have a personal interest in the decisions) are also often invited to share their knowledge with participants (Raimond, 2001; Renn, 2001).
- ✓ Both the planned action and the participation process that supports it take place within a legal or *legislative framework* (Daniels et al., 1996; Sinclair & Diduck, 2001),

which in turn reflects the ethical or moral values of society (Cortner, Wallace, Burke, & Moote, 1998).



**Figure 3.1 Functions of public participation**

### 3.2.3 Philosophical questions related to the functions of public participation

As the previous two sections indicate, public participation can fulfil various functions. Some of these functions pertain to improving the quality of decisions, while others involve the empowerment of individuals and communities. However, no discussion of the benefits of

public participation can be complete without mention of the relationship between this issue and two fundamental philosophical questions. The first question concerns the problem of defining “good” decisions, while the second is related to contrasting theories of social change. These questions and their relevance to public participation are discussed below.

a) *What are “good” decisions?*

It was pointed out above that public participation contributes to effective decision-making by providing access to information, by helping to resolve disputes, by enhancing accountability, by improving stakeholder support of decisions, and by encouraging stakeholders to contribute resources to the implementation of those decisions. However, *effectiveness* does not necessarily equate to *desirability*. A decision can be based on accurate information and enjoy the unanimous support of all stakeholders – but if the motivations underlying the decision are unethical or immoral, its consequences can still cause a great deal of harm to a great many people. Whether the benefits of public participation accrue to society at large will therefore not depend so much on whether it streamlines decision-making as on whether the *consequences* of those decisions are good for everyone concerned.

Defining the criteria of a “good” decision is not so simple, however. The difference between right and wrong conduct has occupied philosophers for centuries (Dewey, 1953), and its relevance for contemporary society is nowhere more apparent than in cases where a decision can have long-term (and possibly irreversible) repercussions for humanity and the ecosystem (Webler, 1999). For example, is it justified to prohibit the production of genetically modified food for fear of its possible environmental impacts – even when this means forcing farmers to plant less hardy crop varieties, and thereby increasing the probability that thousands will die as a result of famine?

Throughout the course of history, several answers have been proposed to the question, “What is good?” Not all of these answers are compatible with one another (Durant, 1961). In many religions, goodness is defined as conformance to a set of rules and principles that have (supposedly) divine origin. In a secular society, however, such answers are not satisfactory. An alternative approach (which has ancient origins, but was perhaps most clearly formulated by John Stuart Mill) is to define a good decision as one that leads to *the greatest happiness for the greatest number* (Flew, 1984).

This utilitarian definition, too, has its shortcomings. In particular, it opens the door for the “tyranny of the majority.” It “fails to acknowledge any individual rights that could not be violated for the sake of the greatest good. Indeed, even the murder of an innocent person would seem to be condoned if it served the greater number” (Kay, 1997). This shortcoming is particularly relevant to public participation, as participative decision-making processes often pit the will of the many against that of the few. For instance, the majority of the residents of a city might prefer to have a waste disposal facility located outside the city boundaries, but still close enough so as not to necessitate an increase in the cost of waste removal. If this preferred site is situated near a small rural community, however, members of that community will be forced to bear the brunt of the environmental and health risks associated with proximity to such a facility. According to a strict utilitarian definition, a siting decision that conforms to the will of the majority will be regarded as justified, as it brings the greatest happiness to the greatest number. However, it is intuitively obvious that such a decision is *not* ethical if it harms the residents of the rural community.

In order to circumvent such difficulties, the utilitarian definition might be modified to read, “A good decision is one that brings the greatest happiness to the greatest number *without unfairly disadvantaging anyone.*” This definition is still not quite above reproach. Most notably, it does not specify what is meant by “*unfair disadvantage.*” In many instances, it is simply not possible to select a course of action that will not inconvenience someone in some way. In such circumstances, the problem arises of deciding when an inconvenience to an individual or group is sufficiently great to outweigh the benefits the course of action offers for the majority. Furthermore, this definition is silent on the question of whether *future generations* should be included when calculating the “greatest number.” This question becomes relevant in cases where a decision taken now might have long-term environmental consequences (Mumpower, 1995).

Despite its shortcomings, the aforementioned definition of a good decision is sufficiently robust to serve as a useful heuristic in most practical situations. Hence, it is often implicitly adopted in public participation (Allen, 1998; Seiler, 1995; Wellstead et al., 2003). It is also accepted as a premise for this study, and is used as a basis for the functional model of public participation offered in Chapter 6. The question of whether this definition provides the most appropriate criteria for evaluating decisions is taken up again in Section 8.3.5.

#### b) *Theories of social change*

A second philosophical question related to the benefits of public participation concerns the nature of social change. Public participation processes often act as agents of change; at other times, they serve to maintain the status quo. One’s opinion on the nature of social change will therefore influence one’s view regarding the benefits (and dangers) of public participation.

A number of theories have been put forward to explain social change. These can be grouped into two major categories. One category consists of those theories which assume that society is maintained through what Durkheim (1984) called the “collective conscience” – the repository of the shared opinions about values and norms of its members. Social change is thus assumed to be a gradual, evolutionary process, and conflict is seen as a threat to the conditions necessary to maintain such smooth growth. Theories in this category are often referred to as *consensus theories*, and structural functionalism is an example of such a theory (Renn et al., 1995a).

The other category consists of theories which question the assumption that social norms are an expression of shared interests and values. Proponents of such theories point out that ruling elites often impose their values on their subjects (Renn et al., 1995a). Hence, the order of society should be seen as the product of patterns of domination rather than as an expression of the collective conscience. According to conflict theories (which Marxism), consensus is coercive, and social change usually is sudden and revolutionary rather than gradual and evolutionary (Marx, 1976).

Disagreements regarding the nature of social change are reflected in differences of opinion with regard to the most important functions of public participation. For supporters of a consensus theory, the most important functions of public participation are to reveal society’s collective values, to reconcile differences and to provide the means for gradual social change. Hence, the ability of public participation to *resolve conflict* and garner *stakeholder support* is regarded as its most significant benefits. From the viewpoint of conflict theories,

on the other hand, public participation is in the first instance a place of confrontation – a means to resist subjugation and facilitate power redistribution. In other words, this perspective gives pride of place to the *accountability* and *empowerment* functions of public participation. Neither consensus theories nor conflict theories have been able to gain the upper hand in a debate that “extends at least as far back [as the] differences between Plato and Aristotle” (Renn et al., 1995a, p. 5).

### 3.3 APPLICATIONS OF PUBLIC PARTICIPATION

Given the various benefits of public participation in improving the effectiveness and (often) the legitimacy of decisions, it is not surprising that it has found application in a number of areas. These applications may be categorised in two ways: according to their *scale*, or according to the *social sector* most directly involved. If public participation processes are classified in terms of scale, a distinction can be drawn between large-scale, medium-scale and small-scale processes:

- ✓ *Large-scale* processes include public participation in the development of legislation, policy or regulatory standards (Vari, 1995; Wellstead et al., 2003);
- ✓ *Medium-scale* processes, on the other hand, include public participation in decisions regarding land use (Ball, 2002; Krannich, Carroll, Daniels, & Walker, 1994), the siting of facilities or the issuance of permits (Allen, 1998), or landscape and urban planning (Lessard, 1998); and
- ✓ *Small-scale* applications include participation in the planning, authorisation and implementation of industrial and infrastructure projects (Soneryd & Weldon, 2003).

A sectoral classification of public participation processes distinguishes between applications in economic decisions, environmental decisions, decisions on social issues and decisions in the political sphere:

- ✓ In the *economic* sector, applications of public participation include setting budget priorities and the allocation of financial resources (Armour, 1995; Musso, Kitsuse, Okumu, Sithole, & Steinberger, 2003).
- ✓ In the *environmental* sector, applications include environmental planning (Ball, 2002); environmental impact assessment (Webler et al., 1995); decisions pertaining to nuclear energy (Bond, Bussell, O’Sullivan, & Palermd, 2003), biotechnology and genetic engineering (Abelson et al., 2003), forest management (Purdon, 2003), wilderness preservation (Vari, 1995), agriculture (Wellstead et al., 2003), fisheries resource management (Jentoft et al., 1998), etc.
- ✓ Uses of public participation in the *social* sector include decisions about public health care (Abelson et al., 2003) and education (Israel, Checkoway, Schultz, & Zimmerman, 1994).
- ✓ *Political* examples include public participation in the rating of electoral candidates (Armour, 1995).



### 3.4 PUBLIC PARTICIPATION MODELS AND TECHNIQUES

In the preceding section, it was pointed out that public participation processes can be categorised in terms of their scale and area of application. An alternative classification involves distinguishing between processes in terms of the *models and techniques* they employ. The first section below discusses the *need* for models and techniques in public participation. Subsequently, the difference between a public participation *process*, a public participation *technique* and a public participation *model* is explained. Brief descriptions are then provided of a number of well-known public participation *models*, after which a set of dimensions is proposed for characterising and comparing these models. Finally, a number of public participation *techniques* are identified.

#### 3.4.1 The need for models and techniques

The need for public participation models and techniques stems from the fact that “merely putting people in a room and telling them to work out a non-coercive consensual agreement is not always good enough” (Webler, 1995, p. 74). As Woltjer et al. (2002, p. 4) point out, the “institutional characteristics (rules about who has what authority for different elements of the process) and process (timing and resources) of the participatory decision-making process are crucial for the final outcome.” In fact, public participation may well *reduce* the quality of decisions if it is conducted according to inadequate or inappropriate procedures (Allen, 1998). This concept is illustrated in the figure below.

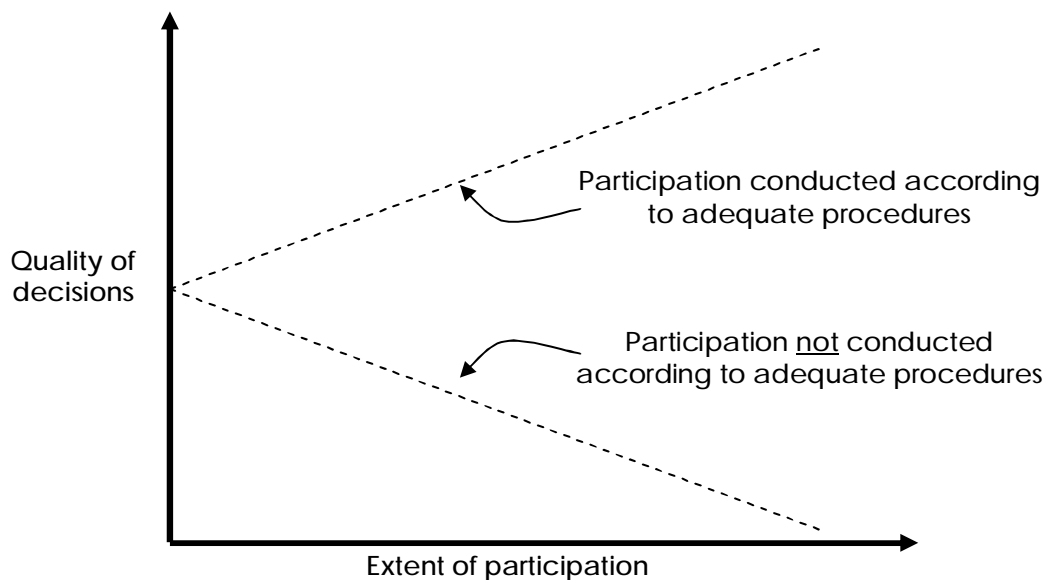


Figure 3.2 The effect of participation procedures on decision quality

### 3.4.2 Distinguishing between participation models, techniques and processes

As the foregoing discussion shows, the potential benefits of public participation will only accrue if the process is given a *structure* that is commensurate with the type of decision and the problem context. The function of participation models and techniques is to provide such structure. However, the structure of a public participation process can be conceptualised at various *levels* (Abelson, 2001). In its most basic sense, this term refers to the overall shape of the process itself – the content and timbre of discourse, the degree of conflict and consensus among participants, etc. Structure can also denote the *techniques* by which the public participation facilitator guides the process or moderates its proceedings. These include the methods and tools that are used to select or invite stakeholders, to disseminate information, to solicit inputs, to facilitate discussion and the like.

At a still more abstract level, the structure of a public participation process reflects the *model* on which it is based – in other words, the paradigm informing the selection of techniques and the relative timing of their implementation. The function of a model goes beyond the selection of techniques: it also specifies the overall *emphasis* of the process (whether it is primarily intended to build consensus, to educate and disseminate information, or to obtain input on an issue), how the process is linked to *other* political structures and institutions, who will be *involved* in the process (for example, whether it is open to the general public or limited to specific sets of stakeholders) and the like (Renn et al., 1995a). The relationship between public participation processes, techniques and models is depicted in the figure below.

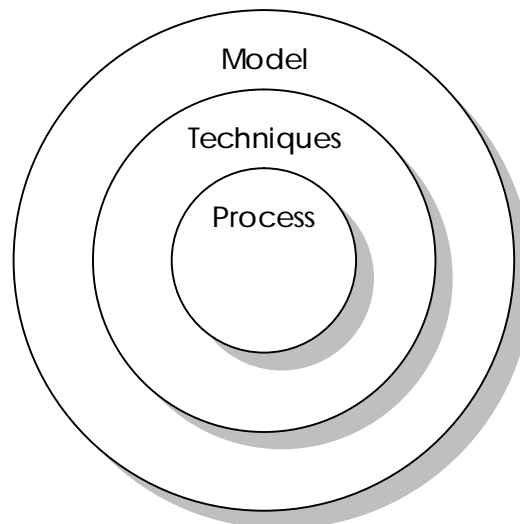


Figure 3.3 Levels of structure in public participation

### 3.4.3 Examples of public participation models

It would be impossible to provide a complete inventory of public participation models, as novel approaches and varieties of existing ones are continually being developed. This section therefore merely presents an overview of a fairly representative sample of models.

Most of these have been taken from the book, *"Fairness and competence in citizen participation: Evaluating models for environmental discourse"* (Renn et al., 1995b). The sequence in which they appear below also follows the order in which they are presented in that book. Two models discussed here that receive only a passing mention in Renn et al. are the *"Decide, Announce, Defend"* model and *referenda*. Other models that are attracting increasing attention, but have not been incorporated in this study, include *transactive planning* and *collaborative learning* (Krannich et al., 1994).

a) *The "Decide, Announce, Defend" model*

This model derives its name from the fact that its aim is often limited to "selling" a proposed project to the public. It follows a top-down approach to planning and management, and its underlying philosophy is embodied in the phrase: "If the public only knew, they would agree with us; how can they be taught that what we are doing is right?" (Krannich et al., 1994, p. 51). Its central technique is the *public hearing* or *public meeting*, which is by far the most common technique for public participation in the world today. Nevertheless, it is also among the least studied forms of participation (Webler & Renn, 1995).

Environmental legislation in many countries specifies that public hearings have to form part of the decision-making process surrounding actions with potentially significant environmental impacts (Bond et al., 2003; Krannich et al., 1994; Lynn & Kartez, 1995; Webler et al., 1995). Such public hearings must be widely advertised so that any interested party is able to attend. Participants at public hearings may therefore attend as private individuals representing their own interests, or as representatives of institutions or interest groups.

During a public meeting, a panel of government agency or industry representatives gives a presentation on a proposed action, after which the public is invited to ask questions and voice their thoughts with regard to the proposed action. Typically, public meetings are only attended by those people who are opposed to the proposition (DWAF, 2001), and they are limited in their ability to provide insight into the reasons behind public opinion, as "viewpoints tend to be expressed in positions and demand statements" (Adler & Kranowitz, 2005, p. 31). Consequently, they are usually ineffective at building consensus, promoting mutual cooperation or solving problems (Raimond, 2001). The model has also been criticised on the grounds that it promotes conflict rather than effective decision-making (Allen, 1998). Members of the public often accuse project proponents of ignoring their demands and concerns, while project proponents often retort that the demands raised at public meetings are so ill-informed and short-sighted as to be of no use to anyone.

b) *Referenda*

A referendum is a model of public participation in which an entire electorate is asked to accept or reject a particular proposal. The proposal in question might be the adoption of a new constitution, a constitutional amendment, a law or government policy, or even the recall of an elected official. Referenda therefore present a particularly powerful method for national, provincial or local governments to assess prevailing public opinion on specific issues (League of Women Voters, 2002; Renn et al., 1995a).

What referenda gain in terms of coverage, however, they sacrifice in terms of the ability to promote discourse. In contrast with models of public participation in which citizens are given the opportunity to exchange ideas, experience mutual learning and engage in joint

problem solving, the approach to dispute resolution in this model is purely statistical. The outcome of a referendum simply represents the preference held by the majority of voting citizens, and does not provide information on the reasons underlying those preferences. Referenda have also been criticised on the grounds that they tend to oversimplify issues by reducing them to “yes-no” questions (Constitutional Arrangements Committee, 2005).

Despite these shortcomings, referenda have been implemented in many parts of the world. The country in which this model enjoys the most extensive use is Switzerland, where referenda at national as well as local levels are held on a regular basis (Feld & Kirchgassner, 2004). In 1998, for example, Switzerland held a national referendum to decide whether to endorse an initiative banning the production and distribution of transgenic animals and the patenting of genetically modified animals and plants. Swiss voters rejected the proposed ban by a margin of two to one (Mach, 1998).

The outcomes of referenda are usually binding, which means that their results are legally enforceable. Such provisions serve to give citizens direct control over certain legislative and policy decisions. Even in cases where referendum results are not binding, however, they are usually honoured by governments (Woltjer et al., 2002).

#### c) *Citizen advisory committees*

The term “citizen advisory committee” (CAC) is a generic one that can refer to any participatory model in which a relatively small group of citizens are called together to represent the views and interests of organisations and/or communities. Participatory processes falling under this term display considerable diversity in terms of their formal charges, discourse procedures, contexts of application, etc. Nevertheless, they tend to have a number of features in common. First, the purpose of a CAC is to act as a “sounding board” to assess community acceptance of a proposed action (Woltjer et al., 2002). A CAC will typically be presented with a charge, which involves the formulation of recommendations with regard to the proposed action. Second, membership of a CAC is by invitation only. Although members can be nominated by citizen groups, they must be approved by the sponsor. Third, CACs usually meet on a regular basis until they have finalised their recommendations. These recommendations are non-binding, although the sponsor is sometimes required to give a formal response (Vari, 1995).

Historically, CACs first appeared in the USA, where they were used as a tool in local government reform politics. Today, this model of participation is ubiquitous in the USA, where every city or county has an officially recognised CAC. In environmental decision-making such as the siting of hazardous waste disposal facilities, CACs are often used to supplement the obligatory *public hearings*. Although CACs are mainly instituted by local governments, they are also sometimes used by certain major industries (Lynn & Kartez, 1995).

#### d) *Planning Cells*

A planning cell is a *randomly selected* group of citizens temporarily released from work to discuss certain issues in seminar form. These issues usually relate to problems of assessment, planning or control. Planning cells were first applied in Germany in 1969 (Hill & Zammit, 2000). Their applications in Germany have included urban planning; in Switzerland, they have been used for waste planning; in Spain, to facilitate decisions regarding public

buildings and infrastructure; and in the United States, they have been applied in relation to sewerage management (Woltjer et al., 2002).

Each planning cell concentrates on a single issue, although multiple cells can meet in parallel to discuss related issues. Members of planning cells are provided with the necessary background information by means of material prepared by the facilitation team, and are presented with certain alternatives. They are then asked officially to prepare recommendations. Having completed their deliberations, a planning cell presents its recommendations in the form of a "citizen report." Although this report is non-binding, it is used as a basis for official decision-making (Allen, 1998).

e) *Citizens' Juries*

The Citizens' Jury model of public participation, which is in many respects similar to planning cells, was developed in 1971 by Ned Crosby and trademarked by the Jefferson Centre for New Democratic Processes. A Citizens' Jury is a panel consisting of a randomly selected group of citizens. This group is intended to be representative of the community at large. Members of a Citizens' Jury are paid a nominal fee to attend a series of meetings in order to learn about and discuss a specific public policy issue or a set of candidates in an election. They are then expected to reach a consensual position by means of a majority vote, and to make public their conclusions (Crosby, 1995).

The major difference between Citizens' Juries and Planning Cells is that the former is much more focused: jury members are required to express a preference among a small number of *predefined policy options*, whereas Planning Cells are more involved in the *design* of policy options. Citizens' Juries have been used in the United States to discuss agricultural pollution, organ transplants and the appointment of candidates for public positions. In the United Kingdom, they have been used to discuss waste and health policies (Woltjer et al., 2002).

f) *The Varresbecker Bach participatory process: an example of a citizen initiative*

The residential area of Varresbecker Bach is located in Wuppertal, Germany. In the early 1990s, it came to light that the Varresbecker stream had been used as dumping site by surrounding chemical industries, and that the area was seriously contaminated with arsenic, lead, copper, mercury and cyanide. An innovative public participation model was developed to involve local residents in decisions about whether there was a need to clean up Varresbecker Bach, how the cleanup should proceed and – since it was not possible to identify the chemical factories responsible for the contamination – who should bear the costs (Claus, 1995).

A central role-player in the process was the Wuppertal Environment Agency, which was mandated to make recommendations to the Wuppertal City Council on environmental issues. Other stakeholders mainly consisted of the residents and property owners of Varresbecker Bach. During the first large public meeting, when information regarding possible health risks was distributed to participants, residents and property owners formed the Varresbecker Bach Contaminated Site Interest Group. Later in the process, a second interest group was formed consisting of residents opposed to the proposed cleanup.

The process was characterised by "early involvement [of] the public in a consensual decision process and by involvement of an outside independent mediator facilitating agreement among stakeholders. The overall agenda was set by the local government and

within this the public was authorised to make recommendations” (Söderberg & Kärman, 2003, p. 118). The process employed a variety of communication methods, including public meetings, working groups, roundtable discussions and “sofa talks” (small meetings or individual interviews conducted in people’s homes). Participants succeeded in reaching a consensual decision about who should pay for decontamination of the area.

The public participation model developed to deal with the crisis at Varresbecker Bach has the potential to facilitate dispute resolution and joint problem solving in other contexts where significant public concern exists about a specific environmental or social problem, where large numbers of people are potentially affected, and where a degree of social mobilisation has taken place. In order to distinguish the participatory *model* from the particular *process* in which it was first applied, it can be called a “*citizen initiative*” *model of public participation*. This name is derived from the fact that public participation according to this model is as much a “grass roots movement” as a tool in the hands of government and industry.

#### g) *Regulatory negotiation*

Regulatory negotiation (“reg-neg”) emerged in the United States in the 1980s as a way for government agencies to balance the demands of diverse interest groups when taking administrative decisions. Representatives of various affected interests are brought together to agree on the content, and sometimes on the language, of regulations (Fiorino, 1995). Strongly endorsed by the erstwhile Clinton administration, regulatory negotiation has been used for rulemaking by the US Environmental Protection Agency, the Department of Transportation and the Occupational Safety and Health Administration.

In the context of environmental rulemaking, participants in regulatory negotiation may include “representatives of industrial firms who must comply with the regulation; ... state and local pollution control, health, or regulatory agencies; environmental groups; ... and sometimes people who can provide important kinds of industrial or scientific expertise that will support the negotiations” (Fiorino, 1995, p. 225). Motivation for interest groups to participate in regulatory negotiation is provided by the fact that decisions taken by administrative agencies can have significant economic and environmental consequences.

Because regulatory negotiation is not open to the general public, but limited to specific stakeholder and interest groups, it can be regarded as an instance of “*neo-corporatist*” decision-making. As was mentioned in Chapter 1, the neo-corporatist model represents one of the possible midway points between representative and direct democracy. It is a mode of political interaction in which key social actors formulate mutually acceptable courses of action without the direct involvement of the public at large. The method of dispute resolution employed in regulatory negotiation may be described as *confrontational* (Vari, 1995), as considerable emphasis is placed on exploring the *reasons* underlying differences in opinion or preference.

#### h) *Mediation*

Mediation is a voluntary process in which parties involved in a dispute enter into discourse with the purpose of exploring and reconciling their differences. A mediation process is usually facilitated by a neutral facilitator or mediator, but this facilitator does not have any



authority to impose a settlement. Instead, the mediated dispute is settled when all parties are satisfied that they have reached a workable solution (Baughman, 1995).

In contrast with regulatory negotiation, mediation follows a *reconciliatory* approach to dispute resolution – that is to say, participants largely avoid discussing their differences (Vari, 1995). Instead, they focus on reaching mutually acceptable trade-offs. Such trade-offs are only possible if parties have some leverage in terms of resources that they are willing and able to trade. These may include financial resources, political strength, opportunities for legal challenge, control of natural resources, etc.

Mediation has been applied at various scales. It has been used extensively in the United States to solve *site-specific* disputes such as conflicts over land use, land and water resources, the siting of incinerator plants and energy facilities, and air quality and toxics (Nothdurft, 1995). It has also been used to address disputes over environmental *policy* and to resolve conflicts *among nations*.

#### i) *Dutch study groups*

This model of public participation derives its name from its first application, which occurred in the Netherlands. It is characterised by large-scale involvement of the public in policy-related decisions at a national level. In terms of its scale and type of application, it is therefore similar to a *referendum*. However, the two models differ in that a referendum does not allow for discussion and an exchange of viewpoints among participants, whereas Dutch study groups have the facilitation of such discourse as its central aim (Midden, 1995). The origins of this model are outlined below.

In the mid-1970s, the Dutch government made a principle decision to expand the use of nuclear power for electricity generation. Plans were formulated to build three large nuclear power stations. When these plans were announced, however, they elicited strong public opposition. The government then decided to “solve this decision problem through a national debate to create a socially responsible and widely accepted decision” (Midden, 1995, p. 307).

The process consisted of two phases: an *information* phase and a *discussion* phase. The objective of the information phase was to compile an inventory of existing public opinions, beliefs and attitudes regarding energy policy. This was achieved by inviting individuals, groups and organisations to submit their views on the matter in writing. Regional hearings were also conducted in which various organisations (including anti-nuclear groups, consumer organisations, energy companies and political parties) were given the opportunity to state their views. A third component of the information phase was a series of “controversy sessions” that served to clarify differences of opinion among groups (Mumpower, 1995).

The objective of the discussion phase was to allow an exchange of information and views among members of the general public. This was achieved by means of nearly two thousand local meetings facilitated by trained discussion leaders. Two local meetings were held at each venue: an initial meeting for discussion, and a second meeting to provide participants with the opportunity to state their preferences and opinions subsequent to the debate.

The possibilities for applying Dutch study groups in other contexts are limited by the fact that it is *resource-intensive*. Its usefulness is therefore more or less restricted to highly controversial policy decisions in countries relatively free from budgetary constraints. It may also not be transferable to less consensus-based political cultures. Another possible problem associated with the Dutch study group model is that a failure on the part of government to act on the recommendations formulated during the process may undermine public confidence (which is approximately what happened in the Dutch case) (Woltjer et al., 2002).

### 3.4.4 Dimensions for characterising public participation models

One of the difficulties in comparing models with one another is the fact that there are so many respects in which they can differ from or resemble one another (Webler, 1999). In an attempt to circumvent this difficulty, a set of dimensions was developed during this study that can be used to characterise public participation models. This set of dimensions is presented in the tables below, where it is divided into three categories of variables:

- ✓ Those related to the *main features* of a public participation model;
- ✓ Those describing the *procedural characteristics* of the model; and
- ✓ Those describing its *applications, strengths and weaknesses*.

**Table 3.1 Dimensions describing the main features of public participation models**

Dimension	Description
Convenor/ sponsor	Whether the participation process can be initiated by members of the public, or only by government agencies. The convenor is also often the party that supplies the financial resources for the process.
Techniques used as part of model	Specific techniques used to disseminate information, solicit inputs from participants, etc.
Stage of decision- making at which participation is solicited	Decision-making processes normally proceed through the following stages: (1) needs assessment (“What should be done?”); (2) identification of options (“What can be done?”); (3) planning and design (“What will be done?”); (4) implementation; and (5) monitoring and evaluating (Sinclair & Diduck, 2001). This dimension denotes the stage(s) of the decision-making process during which stakeholder involvement is sought.
Timeframe of deliberations	The usual length of a public participation process employing this model.
Typical number of participants	The number of stakeholders typically involved in a process.
Range of potential participants	These may include the general public, parties that stand to be directly affected by a decision and representatives of stakeholder groups (such as industry, government departments, environmental organisations, etc.)
Method of soliciting participants	Whether the process is open to anyone who wishes to participate. If not, the method by which participants are invited or selected is also included in this dimension.

**Table 3.2 Dimensions describing the procedural characteristics of public participation models**

Dimension	Description
Type of representation	Whether participants represent their <i>individual</i> interests or speak on behalf of organised <i>interest groups</i> .
Indirect involvement of other parties	Examples of indirect involvement include <i>education of the general public</i> regarding issues being contemplated by participants. Such measures are important to ensure general public acceptance of decisions taken during a participation process. If participants represent organised <i>interest groups</i> , these are also indirectly involved.
Extent to which participants are educated/ supplied with technical information	The extent to which discussion is preceded by the provision of background information on the proposed action, relevant issues and concerns, evidence regarding possible consequences of alternative courses of action, etc.
Main objective(s)	Whether the process is primarily intended to articulate public values and preferences, to resolve disputes, solve problems, collect information, etc.
Extent to which model allows discourse	Whether the model allows for mutual exchange of information, ideas, concerns, etc. This dimension also includes whether interaction during the process is <i>one-way</i> (as when expert witnesses try to educate or persuade participants of their point of view), <i>two-way</i> (as when participants ask questions of expert witnesses) or <i>multi-way</i> (as when participants discuss issues in a group).
Approach to dispute resolution	(Vari, 1995, p. 108) defines three basic approaches to conflict resolution: “(i) the statistical approach – aimed at finding a solution on the basis of the statistical analysis of opinions, (ii) the reconciliatory approach – aimed at finding, in an interactive group setting, a mutually acceptable solution without trying to address all disagreements, and (iii) the confrontational approach – aimed at finding a creative solution via direct confrontation of the different opinions.”
Degree of control participants have over final decisions	Whether decisions taken during a participation process are binding, or merely serve as recommendations that can be ignored.

**Table 3.3 Dimensions describing the applications, strengths and weaknesses of public participation models**

Dimension	Description
Number & scope of problems	Whether the model is applicable in situations characterised by single problems of limited scope, or can be used to address multiple, ongoing issues.
Complexity of issues to which model is applicable	Whether the model is suitable for dealing with problems that require the assimilation of large amounts of information.
Degree of conflict in which model is applicable	Whether the model is suitable for dealing with issues surrounded by a high level of controversy.
Strengths of model	Characteristics of the model that recommend it for application.
Weaknesses of model	Aspects of the model that might reduce its effectiveness.

It should be noted that these dimensions are not all independent of one another. For example, if a model requires the involvement of a *large number of participants*, its typical *timeframe* will necessarily be longer than that of a model concentrating on a select sample

of stakeholders. The timeframe will also depend on whether the model is used to address *single issues* of limited scope, or a range of long-standing issues. Similarly, the *level of discourse* allowed by a model influences the *approach to dispute resolution* it is able to follow. If there are limited opportunities for discussion and exchange of views, reconciliatory or confrontational methods of dispute resolution will not be applicable.

The tables on the following pages apply this set of dimensions to summarise the main features of each model discussed in Section 3.4.3 above.

**Table 3.4 Main features of public participation models (I)**

MODEL:	a) "Decide, Announce, Defend"	b) Referenda	c) Citizen advisory committees	d) Planning cells
Description of procedure	Meeting led by facilitator; proponents give presentations	A legislative act is referred for final approval to a popular vote by the electorate	Small groups meet on a regular basis. Procedures led by neutral facilitator	Experts and stakeholders serve as witnesses, participants as "jury." Led by neutral facilitator.
Convener/ sponsor	Government agency or private institution	Government	Usually government institution. Can also be private company	Government agency
Techniques used as part of model	Newspaper advertisements, public meetings, open days, focus groups	Information dissemination through media; voting procedures	Working groups, public workshops, attitude surveys	Small group discussions, hearings, plenary sessions, consensus-building exercises
Stage of decision making at which participation is solicited	Decision-making	Decision-making	Decision-making. May also be involved in problem definition & implementation	Problem definition, goal-setting and decision-making. Not implementation
Timeframe of deliberations	A few hours per meeting	Not applicable	Varies	Continuous meeting over 3-5 days
Typical number of participants	Varies greatly	Depends on scale (national/ local)	10-20 people	About 25 people
Range of potential participants	By law, public hearings must be widely announced and open to all interested citizens, regardless of their stake in the matter	Potentially all voting members of national or local population	Community leaders representing major public interest positions. May also include representatives of problem owners and other affected institutions	General public
Method of soliciting participants	Voluntary	Voluntary	Appointment. Members can be nominated by citizen groups, but must be approved by sponsor	Random selection by sponsor, although selected individuals may refuse the role

Table 3.5 Main features of public participation models (II)

MODEL:	e) Citizens' Juries	f) Citizen initiatives	g) Regulatory negotiation	h) Mediation	i) Dutch study groups
Description of procedure	Similar to planning cells. Decisions made by voting. Concludes with oversight meeting to discuss rules and staff performance.	Outside mediator organises process and communicates with public and agency. Working group (consisting of interest groups and government agency) established to ensure information flow. Participants choose experts to perform technical assessments.	Administrative agency appoints outside contractor to facilitate process. Representatives of affected interests are convened. Committee is formed to give input into decisions on the content of a rule. Decisions taken by consensus	Neutral mediator facilitates process. Mediator conducts extensive preliminary work to assess the nature of the dispute. Process then focuses on formulation of mutually acceptable trade-offs. Parties are able to withdraw and any time	Two-phased approach: (1) Information was obtained on public opinions, beliefs, etc. (2) Discussion by means of local meetings, after which information on public preferences were collected through a questionnaire
Convener/ sponsor	Government agency	Government agency, although interest groups formed as citizen initiatives	Government agency	Conflicting interest groups	Government
Techniques used as part of model	Hearings with expert testimonies	Public meetings, working groups, roundtable discussions, "sofa talks"	Alternative dispute resolution, work groups	One-on-one discussions, group discussion, joint fact-finding,	Public information campaigns, small discussion groups, surveys
Stage of decision making at which participation is solicited	Problem usually defined by sponsor. Participants involved in decision-making.	Potentially involved in all stages	Decision-making regarding content (and sometimes language) of regulations	Agenda-setting, decision-making and implementation	Problem definition and goal-setting
Timeframe of deliberations	4-5 days	Several months	Sessions of 2 or more days, over several months	Varies	2 years
Typical number of participants	12-20 people	Several hundred	Small, typically 10-20	Varies	Several tens of thousands
Range of potential participants	General public	Directly affected parties, government agencies, independent experts	Representatives of industry, environmental organisations, govt., etc.	Representatives of stakeholder groups	General public
Method of soliciting participants	Random selection through quota system	Voluntary	Invitation by agency	Voluntary. Facilitator may help to identify interested and affected parties	Voluntary



Table 3.6 Procedural characteristics of public participation models (I)

MODEL:	a) "Decide, Announce, Defend"	b) Referenda	c) Citizen advisory committees	d) Planning cells
Type of representation	Individual or group	Individual	Usually group	Individual
Indirect involvement of other parties	No	No	No	Stakeholder groups can testify or give input to discussions.
Extent to which participants are educated / supplied with technical information	Relatively high. Information supplied through presentations and background information documents	Varies	Moderate. Training in group processes, conflict resolution and decision analysis provided. Technical information made available in simplified form, but access to external expertise is limited	High. Receive info on likely consequences of each action through lectures, videos, etc.
Main objective(s)	Exchanging information, obtaining info on public opinion	Obtaining information on public preferences	Articulation of public values and interests	Articulation of public values
Extent to which model allows discourse	Low. A small proportion of the population gets an opportunity to speak	None	High. More on normative than factual issues	High. Concentrates on assignment of relative weights to value dimensions
Approach to dispute resolution	Conflict resolution not emphasised	Statistical	Reconciliatory	Confrontational
Degree of control participants have over final decisions	Low. Minimal evidence that participation in public hearings affects policy	High. Outcome is usually binding	Low. However, formal response to recommendations sometimes required	Low. Make recommendations to legal decision maker in "citizen report"



Table 3.7 Procedural characteristics of public participation models (II)

MODEL:	e) Citizens' Juries	f) Citizen initiatives	g) Regulatory negotiation	h) Mediation	i) Dutch study groups
Type of representation	Individual	Group and individual	Group	Group	Group and individual
Indirect involvement of other parties	Stakeholder groups can testify or give input to discussions.	Yes. Interest groups represent and report to affected public	Participants are accountable to interest groups. However, unorganised interests are excluded	Low. Involves negotiation behind closed doors	Not applicable - all interested and affected parties are directly involved
Extent to which participants are educated / supplied with technical information	Relatively high. Supplied with information through witnesses and advocates	High. Working group ensures flow of information from experts to public	Interest groups usually already have the necessary knowledge, but may also acquire information during the process. Parties present own technical evidence to influence decisions	Varies. Joint fact-finding may form part of preparations	High. Involved media presentations and dissemination of educational material
Main objective(s)	Articulation of public values	Dispute resolution, joint problem solving	Formulation of mutually acceptable decisions	Formulation of mutually acceptable trade-offs	Obtaining information on public values, opinions and preferences
Extent to which model allows discourse	Moderate. Concentrates on normative issues. Because of public hearing format, discourse among participants is limited	High. Includes discourse on factual issues and normative choices	High. Concentrates on factual issues	Low. Mediator works independently with disputing parties to develop trade-offs	High. Involved large numbers of local meetings
Approach to dispute resolution	Statistical (majority vote among jury members)	Reconciliatory	Confrontational	Reconciliatory	Confrontational
Degree of control participants have over final decisions	Low. Recommendations are made public, but are not binding	Low. Recommendations are not binding	High. Participants have power over final decisions	High. Written agreements are produced following consensus, and mechanisms to bind parties to agreements are established.	Low. Outcomes limited to recommendations, while final decisions are left to politicians



**Table 3.8 Applications, strengths and weaknesses of public participation models (I)**

MODEL:	a) "Decide, Announce, Defend"	b) Referenda	c) Citizen advisory committees	d) Planning cells
Number & scope of problems	Set of related issues, usually problem- or site-specific	Single issues related to policy or national/ local legislation	Varies. Can, in principle, be used to address multiple ongoing issues	Most appropriate for issues that can be isolated, as each cell concentrates on single issue
Complexity of issues to which model is applicable	Low. Public meeting format does not allow for presentation or discussion of complex issues	Medium. Information on complex issues may be disseminated before referendum, but this does not guarantee that information will be assimilated	Moderate, because access to technical information is limited	Moderate. Because participants are randomly selected, all may not have equal ability to understand complex issues
Degree of conflict in which model is applicable	Moderate. Incompatible views may lead to escalating conflict	High, although parties do not have the opportunity to explore reasons for divergent views	Low. Works best if there are no essential differences between interests and values of participants	Effective in high-conflict situations, as random selection ensures that the affected population is fairly represented
Strengths of model	Offer citizens and government / project proponents the opportunity to get first-hand information from one another	Cost-effective way of eliciting information on preferences of large numbers of people	Valuable for flagging errors by experts or political leaders; for determining extent of public opposition to a plan	Random selection ensures that participants are representative of population
Weaknesses of model	Often disempowering, with slight attendance. Can become adversarial, providing a stage for political posturing. A vocal minority might dominate	Does not provide opportunities for exploring basis of differences in values or opinion	Frequently used by government institutions to rationalise established power structures. May lose touch with the communities they represent. Decisions may be rejected by other parties	Organised stakeholders may be unwilling to relinquish decision-making power to randomly selected citizens. Affected parties not selected to participate cannot bring in their concerns

**Table 3.9 Applications, strengths and weaknesses of public participation models (II)**

MODEL:	e) Citizens' Juries	f) Citizen initiatives	g) Regulatory negotiation	h) Mediation	i) Dutch study groups
Number & scope of problems	Mostly used to discuss policy issues	Site-specific	Policy decisions, administrative rule-making Not suited for making decisions related to values	Most effective for addressing site-specific disputes	Policy decisions
Complexity of issues to which model is applicable	Moderate. Because participants are randomly selected, all may not have equal ability to understand complex issues	Medium. All participants may not have equal ability to understand complex issues	High, because participants are knowledgeable in their fields	Medium. Does not guarantee that relevant factual information will be taken into account	High. Ample opportunity is provided for gaining understanding of issues
Degree of conflict in which model is applicable	Effective in high-conflict situations, as random selection ensures that the affected population is fairly represented	Moderate. May be inappropriate for resolving highly contentious issues	Low. Concentrates on factual rather than normative issues	Moderate. Depends on willingness of participants to find joint solution	High. Opportunity is provided for exploring basis of differences
Strengths of model	Random selection ensures that participants are representative of population	Provides a structured approach for meaningfully involving large numbers of citizens	Can help to avoid costly litigation	Highly flexible to accommodate participant needs. Effective for overcoming entrenched conflicts between interest groups	Effective for involving large numbers of people in policy decisions, and for assessing public preferences and values
Weaknesses of model	Similar to those of planning cells. Witnesses and advocates tend to highlight emotional claims & ignore facts. High potential for coercion among participants. Relatively expensive	Applicability limited to non-confrontational political culture. Limited emphasis on personal reflection	Adversarial: parties strive to maximise own positions. Exaggerated reliance on factual proof. Limited resources may constrain ability of weaker groups to influence process	Does not promote reconciliation of values/ beliefs. Entry into process is difficult for parties who do not possess bargaining power	Resource intensive. May not be transferable to less consensus-based political cultures. Failure of government to act on recommendations may undermine public confidence

### 3.4.5 Examples of public participation techniques

As the foregoing tables show, one of the dimensions along which public participation models may differ is in terms of the types of *techniques* they employ. However, these tables do not provide a complete inventory of all techniques that public participation facilitators have at their disposal. In the tables below, a more comprehensive list of techniques is provided. These tables are based on the Public Participation Toolbox developed by the International Association for Public Participation (IAP2) (undated). The techniques have been grouped into four categories:

- ✓ Techniques for sharing information with the public;
- ✓ Techniques for soliciting input from and providing feedback to the public;
- ✓ Techniques for bringing people together and encouraging the exchange of ideas; and
- ✓ Techniques for facilitating the development of consensus.

**Table 3.10 Techniques for sharing information with the public**

Technique	Description
Printed public information materials	Fact sheets, newsletters, brochures, issue papers
Information repositories	Libraries, city halls, distribution centres, schools, and other public facilities make good locations for housing project-related information
Technical reports	Technical documents reporting research or policy findings
Advertisements	Paid advertisements in newspapers and magazines
Newspaper inserts	A "fact sheet " within the local newspaper
Feature stories	Focused stories on general project-related issues
"Bill stuffers"	Information flyer included with monthly utility bill
Press releases	Prepared statements on the proposed actions that are presented to the press
News conferences	Representatives of the news media are invited to ask questions about the proposed action
Television	Television programming to present information and elicit audience response
Information centres and field offices	Offices established with prescribed hours to distribute information and respond to inquiries
Expert panels	Public meeting designed in "Meet the Press" format. Media panel interviews experts from different perspectives
Briefings	Use regular meetings of social and civic clubs and organizations to provide an opportunity to inform and educate
Central information contact	Identify designated contacts for the public and media
Websites	Provides information and links to other sites through the World Wide Web. Electronic mailing lists are included
Technical information contact	Providing access to technical expertise to individuals and organizations

**Table 3.11 Techniques for soliciting input from and providing feedback to the public**

Technique	Description
Information hot line	Identify a separate line for public access to pre-recorded project information or to reach project team members who can answer questions/obtain input
Interviews	One-to-one meetings with stakeholders to gain information for developing or refining public involvement and consensus building programs
In-person surveys	One-on-one "focus groups" with standardised questionnaire or methodology such as "stated preference"
Response sheets	Mail-in forms often included in fact sheets and other project mailings to gain information on public concerns and preferences
Mailed surveys and questionnaires	Inquiries mailed randomly to sample population to gain specific information for statistical validation
Telephone surveys/polls	Random sampling of population by telephone to gain specific information for statistical validation
Internet surveys/polls	Web-based response polls
Computer-based polling	Surveys conducted via computer network
Community facilitators	Use qualified individuals in local community organisations to conduct project outreach
Focus groups	Message testing forum with randomly selected members of target audience. Can also be used to obtain input on planning decisions
Deliberative polling	Measures informed opinion on an issue

**Table 3.12 Techniques for bringing people together**

Technique	Description
Simulation games	Exercises that simulate project decisions
Tours	Provide tours for key stakeholders, elected officials, advisory group members and the media
Open houses or open day	Allows the public to tour at their own pace. The facility should be set up with several stations each addressing a separate issue. Resource people guide participants through the exhibits
Community fairs	Central event with multiple activities to provide project information and raise awareness
Coffee klatches or "sofa talks"	Small meetings within neighbourhood, usually at a person's home
Meetings with existing groups	Small meetings with existing groups or in conjunction with another event
Web-based meetings	Meetings that occur via the Internet
Computer-facilitated workshop	Any sized meeting when participants use interactive computer technology to register opinions
Public hearings/ meetings	Formal meetings with scheduled presentations
Design charrettes	Intensive session where participants redesign project features
Role-playing	Participants act out characters in pre-defined situation followed by evaluation of the interaction
Samoan circle	Leaderless meeting that stimulates active participation
Workshops	An informal public meeting that may include a presentations and exhibits but ends with interactive working groups

Table 3.13 Consensus-building techniques

Technique	Description
Delphi technique	Each participant prepares a written assessment of the situation, and receives anonymous feedback on other participant's assessments. The feedback process is repeated until all assessments converge
Nominal group technique	Participants propose ideas, which are recorded. After all ideas have been recorded, they are discussed and prioritised by the group
Public value assessment	Participants prepare statements on the value they attach to various assets or resources. Statements are then discussed and the reasons for value differences explored

### 3.5 PUBLIC PARTICIPATION IN SOUTH AFRICA

The previous sections in this chapter depicted public participation from a global perspective. In this section, the field of vision is narrowed to the South African context. The following section presents a synopsis of the history of public participation in South Africa, after which its applications in this country are discussed. Finally, a few of the challenges associated with public participation in South Africa are identified.

#### 3.5.1 The history of public participation in South Africa

The historical development of public participation at the southern tip of Africa may be described as the meeting, clash and eventual confluence of two very different socio-political streams. The first of these streams is the *indigenous African tradition* of decision-making. This tradition has a strong community-based participatory ethos that is many centuries old. Even today, there are tribes and villages across the continent where "elderly and married men meet daily to advise the local chief on important community issues" (SAIEA, 2003, p. 32).

It is tempting to idealise this way of life and to regard it as a model of constructive collaboration founded on egalitarian social values. However, the reality is somewhat more complex and less idyllic. Because traditional African society is predominantly patriarchal, key positions in community-based decision-making forums are usually occupied by men. Women – although they are frequently expected to *implement* decisions – are regarded as "perpetual minors" where the *making* of decisions is concerned" (SAIEA, 2003, p. 33). Young men are likewise excluded. In most traditional contexts, the poor are also often marginalised in decision-making, as they tend to be overshadowed by more affluent (and more vocal) community members (DWAF, 2001; Kelly & Van Vlaederen, 1995).

The second historical stream is the *Western European tradition* of political decision-making, which was initially introduced into South Africa in 1652 with the arrival of the Dutch settlers at the Cape and reinforced by the establishment of British colonial rule in 1814 (Leacock, 1914). This stream closely followed the evolution of democracy in Europe. The Great Trek of the Boers moving away from the British at the Cape led to the founding of the Republics of Natal and the Orange Free State in 1838 and 1854, respectively (Pakenham, 1982). It may be argued that the choice of the term "republic" for these newly-established states carried with it all the connotations of representative democracy that were part of the European political consciousness at the time.



a) *Apartheid and the Struggle*

The meeting of the African and European cultures in South Africa therefore brought into contact two very different schools of thought regarding participative decision-making. The one system was based on traditional tribal authority with strong elements of oligarchy. The other involved a centralised government populated by state-appointed officials and elected representatives.

The meeting was not a happy one, and it may be argued that both systems suffered a degree of degeneration as a result. On the one hand, the European political establishment quickly closed its doors to participation by the region's indigenous population. Black people were denied basic rights and were regarded as aliens in "white South Africa." When British dominion came to an end in 1934, the system that replaced it (and eventually led to the National Party's rise to power and the introduction of Grand Apartheid by Prime Minister H. F. Verwoerd in 1958) conferred political rights to white citizens only. Even for the white population, however, opportunities to participate in governance were mostly limited to the casting of votes at election time. In all other respects, the government jealously guarded its power and resisted attempts at interference (Mermelstein, 1987).

Meanwhile, the traditional African system of participative decision-making was also being steadily eroded. As more and more black people left their communities behind to seek employment in white industrial centres and residential areas, formerly strong social networks and tribal authority began to crumble. As poverty became increasingly widespread, the importance of extended cooperative mechanisms was also eclipsed by the need to ensure basic survival through concentrating on "immediate nuclear family needs" (SAIEA, 2003, p. 33).

Under apartheid rule, many black people – especially those living in townships close to white urban centres – therefore found themselves cut off from both mainstream politics and their tribal roots. However, as resistance to the racist regime mounted, new forms of participation and political organisation began to emerge. In the 1980s, communities who rejected imposed institutions that were regarded as illegitimate organised themselves into civics, street committees and other local organisations. Organised labour also closed its ranks to form powerful structures that played a key role in the struggle against apartheid (De Villiers, 2001).

b) *The change of 1994*

By the late 1980s, the winds of change had begun to blow through the South African political system. When State President F. W. de Klerk assumed office, a new era of negotiation and reformation was ushered in. These developments elicited a fair amount of conservative resistance. In order to test his mandate for change, De Klerk availed himself of one of the tools of direct democracy: a *referendum*. On 17 March 1992, the following question was posed to white voters: "Do you support continuation of the reform process which the State President began on 2 February 1990, and which is aimed at a new constitution through negotiation?" The outcome of this referendum was a resounding 68.6 percent "Yes" (US Library of Congress, 2004).

The reform process culminated in South Africa's first multiracial, multiparty elections on 27 April 1994. Over the next two years, a new constitution was drafted and enacted, formalising the right of all South Africans to participate in the government of the country

(Reddy & Choudree, 1996). The type of democracy enshrined in this constitution is described in the following section.

c) *Public participation in contemporary South Africa*

In many countries, the constitution merely serves to formalise and affirm existing consensus on values and aspirations (De Villiers, 2001). The Constitution of South Africa (Republic of South Africa (RSA), 1996), however, serves a different purpose. It may be regarded as a *tool for change* – an unequivocal break with an authoritarian, insular and oppressive past and an impetus for the establishment of more equitable institutions and the cultivation of humanitarian values.

In the drafting of its constitution, South Africa had the advantage of access to contemporary thought on the role of government and its relation to the people. As such, it contains unmistakable elements of both *representative* democracy (including the principle of universal adult suffrage) and *direct* democracy (in that transparency, accountability and broad public input in government decisions is promoted) (African National Congress, 1994). However, the Constitution of South Africa also resonates with the African collaborative tradition in that it emphasises sharing, collective responsibility and the role of communities in safeguarding collective interests. It can thus be regarded as a *participative democracy* that synthesis the best elements of both the African and the Western socio-political streams.

Other characteristic features of the Constitution are that:

- ✓ It recognises the danger that direct public control over government decisions might impose a “tyranny of the majority” by disregarding individual rights in favour of general preferences. For this reason, Section 25 of the Constitution refers to an “an equitable balance between the public interest and the interests of those affected.”
- ✓ It contains a Bill of Rights which states, amongst other things, that everyone has the right of access to any information held by the state, as well as to information that is held by another person and that is required for the exercise or protection of any rights (Section 32).
- ✓ It “defines the role of the public in the activities of all three spheres of government, namely national, provincial and local government” (Consultative Forum on Mining and the Environment, 2002, p. 1).

Public participation is also mentioned in various other pieces of South African legislation. These include:

- ✓ The *Promotion of Access to Information Act (Act No. 2 of 2000)*, which elaborates the principle (enshrined in the Bill of Rights in the Constitution) that every citizen has the right of access to information held by the state that may be relevant to him or her. The objectives of the Act include empowering people to scrutinise and participate in decisions made by public bodies, especially when these decisions impact upon their lives (Republic of South Africa (RSA), 2000a);
- ✓ The *Promotion of Administrative Justice Act (Act No. 3 of 2000)*, which gives effect to the right of all citizens to lawful, reasonable and fair administrative action. It also gives the public the right to demand written explanations for the reasons behind administrative actions (Republic of South Africa (RSA), 2000b);

- ✓ The *National Environmental Management Act (Act No. 107 of 1998)*, which is South Africa's overarching environmental law, and which promotes the participation of all interested and affected parties in environmental governance. It places particular emphasis on the participation of women and youth, on the recognition of traditional knowledge and on community empowerment;
- ✓ The *Environmental Impact Assessment Regulations (Government Notices No. 1182 and 1183 of 5 September 1997)*, which give effect to Sections 21, 22 and 26 of the Environment Conservation Act (Act No. 73 of 1989) (Republic of South Africa (RSA), 1989). These regulations specify that any action or development that might have an impact on the environment must be subject to an environmental impact assessment (EIA) before it is approved. It also specifies that public participation must form part of any EIA.
- ✓ The *National Water Act (Act No. 36 of 1998)*, which obliges the Department of Water Affairs and Forestry (DWAf) to ensure that South Africa's water resources are "protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner for the benefit of all persons" (DWAf, 2001, p. 10). The Act emphasises public consultation, and serves as the basis for the development of the DWAf's *Generic Public Participation Guidelines* (DWAf, 2001) to guide public participation in water-related matters.
- ✓ The *Water Services Act (Act No. 108 of 1997)*, which requires that the DWAf create a developmental regulatory framework for the provision of water services. It recognises that community involvement in the planning, design, financing, construction and maintenance of water services is essential to ensure sustainable progress.

### 3.5.2 Applications of public participation in South Africa

As the foregoing paragraphs indicate, South African legislation makes provision for public participation at various levels (ranging from national and regional governance to programmes, plans and projects) and in a variety of activities. Two examples are provided below of applications of public participation in South Africa. The first concerns participation in legislative and policy-making processes, while the second concentrates on public participation in environmental impact assessment. These examples are followed by a brief comment on the participation models and techniques most frequently employed in South Africa.

#### a) *Legislative and policy-making processes*

In a purely representative democracy, the government may simply formulate its policies in accordance with its party manifesto. The participatory democratic system of South Africa, however, demands that the executive engage with the public when drafting legislation and policy. The development of the Constitution was itself a participatory process (SAIEA, 2003). A Constitutional Assembly Public Participation Programme (CAPPP) was established, and its aim was to involve as large a section of the population as possible in the process. A specific priority for this Programme was to ensure that marginalised groupings were able to contribute to constitution-making (De Villiers, 2001).

Theme committees were established by the Constitutional Assembly for the purpose of collating and considering submissions from various stakeholders, including civil society organisations, political parties and ordinary individuals. Hundreds of advertisements in newspapers and on buses, taxis, billboards, pamphlets, posters, radio and television encouraged South African to become involved in the process. As a result of these efforts, approximately 2,5 million written submissions were received (De Villiers, 2001).

In general, policy-making in South Africa is a two-step process. The first step, after a policy has been broadly conceptualised by the executive, is the formulation of a Green Paper. This Green Paper is then published for discussion and comment, and is subsequently finalised in the form of a White Paper (PMG, 2005). The process may involve consultation with government departments, experts, particular stakeholders and the public at large. A particular point of entry of the public to contribute to the policy-making process is provided by *Parliamentary Committees* – an institutional sub-structure that has extensive powers to monitor, investigate and make recommendations with regard to any aspect of legislation (IDASA, 2004).

#### b) *Environmental impact assessment*

The objectives of an environmental impact assessment (EIA) are to identify and evaluate the potential effects of a proposed development on the environment, and to formulate measures by which negative impacts can be avoided or mitigated (DEAT, 1998). The South African EIA Regulations identify a number of activities for which an EIA must be undertaken before the Department of Environmental Affairs and Tourism will grant authorisation for those activities to proceed. These include:

- ✓ The construction or upgrading of power station, roads, railways, etc.;
- ✓ Changes of land use, for example from residential use to industrial or commercial use;
- ✓ The release of any organism outside its natural area of distribution for the purpose of biological pest control;
- ✓ The genetic modification of any organism;
- ✓ The reclamation of land below the high water mark of the sea and in inland water including wetlands;
- ✓ The disposal of waste; etc.

In accordance with current South African legislation, an EIA normally proceeds along the following steps (DEAT, 1998):

1. *Screening*, which involves determining whether a proposed activity requires an EIA and, if so, what the scale of this assessment should be.
2. *Scoping*, during which the study area is defined and key issues (or possible impacts) are identified that will require further investigation. Stakeholders, including members of the public, are often involved in the identification of key issues. The outcome of this phase is a *Scoping Report* that must be made available to stakeholders in draft form for review and comment before it is finalised.

3. *Impact Assessment*, which involves conducting these detailed investigations to analyse impacts and predict their significance. This phase of the process also entails identifying measures to reduce any negative impacts and enhance positive ones. The outcome of this phase is a draft Environmental Impact Report (EIR), which must again be subjected to public review. The final EIR is then submitted to the relevant government authority (usually the provincial Department of Environmental Affairs and Tourism).
4. *Decision-making*, during which the relevant authority determines whether the proposed development should be approved, approved with conditions or rejected completely. The outcome of this phase is a Record of Decision (RoD) against which stakeholders may lodge an appeal if they disagree with the decision reached by the authority.

Every EIA must furthermore be accompanied and informed by a public participation process (SAIEA, 2003). This process must meet the following criteria (DEAT, 1998):

- ✓ It must be facilitated by an *independent agency* in an open, transparent manner.
- ✓ The public participation facilitator must *identify* all parties, individuals and groups that may have an interest in or be affected by the proposed development.
- ✓ In order to ensure that all interested and affected parties (I&APs) are afforded an opportunity to comment on the proposed development, applications for environmental authorisation must be publicly *advertised*. Such advertising must, at minimum, involve on-site notices and advertisements in the press.
- ✓ I&APs must be afforded opportunities to *raise issues and concerns* and to participate in all appropriate stages of the EIA process (including the preparation of the Scoping Report and EIR).
- ✓ I&APs must be informed of the *nature and schedule* of both the EIA and the public participation process, including the reason for their participation, where and when draft reports will be made available for review, to whom comments on such reports should be addressed and the specified period for submitting comments.
- ✓ All activities forming part of the public participation process (including the methods used to notify I&APs, the opportunities provided for I&APs to express their views, and the issues and concerns raised during the process) must be *recorded*.

### 3.5.3 Challenges of public participation in South Africa

The challenges facing public participation in South Africa can be summarised in terms of four Ds: *Distance, Diversity, Disadvantage* and *Distrust*. The first “D” refers to *physical* distance – in particular, the difficulties posed by the sheer size of the country. Because settlements are often widely dispersed and transport links between them frequently inadequate, regular and intensive participation is sometimes impossible (De Villiers, 2001).

The second “D” refers to *psychological* distance and to the difficulties of “communicating with a range of stakeholders from the wealthy and empowered to the very poor and marginalized” (DWAf, 2001, p. i). President Mbeki aptly described his country as comprising “two South Africas” separated by a large socio-economic and cultural gap (De Villiers, 2001; Whiteman, 2004). Apart from the obvious fact that this diversity often imposes language

barriers that are difficult to breach, gathering a group of stakeholders with divergent backgrounds, customs, values and priorities under one roof to reach a consensual decision often creates a breeding ground for conflict (SAIEA, 2005).

The third “D” (disadvantage) refers to the fact that many South Africans suffer from poverty, a shortage of resources and the effects of limited education (UNDP, 2000). The most disadvantaged of all are poor, rural black women who not only have to divide their time between caring for families and earning a living (thus having little spare time for participation), but also have to contend with traditional value systems that confer on them an inferior social status (Schoeman, 2003). Tribal customs also sometimes make it difficult for men to participate, as “hierarchical structures where traditional leaders are very powerful” can prohibit them from speaking up without the chief’s permission (SAIEA, 2005, p. 6).

Furthermore, low levels of education mean that disadvantaged communities frequently have limited awareness of environmental issues and lack the literacy skills to read even the most basic information documents. People with limited education also often have limited understanding of the structure and functions of government. Officials of a particular government department are sometimes viewed as representatives of the entire government. Consequently, communities sometimes confront them with expectations and demands that they have no authority to fulfil (DWAF, 2001).

The final “D” (distrust) is part of the legacy of South Africa’s history, and refers to mistrust of government, of civil society and between communities. Despite the enormous strides taken since 1994, South Africa remains a deeply divided society (Landsberg, 2000). The scars of the past make their influence felt in various ways. First, the success of public participation processes hinges on mutual respect among stakeholders (Jackson, 2000) – and such respect is frequently lacking, especially among certain more conservative members of society. Second, the abuses of the past have created a climate in which government actions are frequently viewed with suspicion. Government officials and civil society organisations are often (and sometimes rightly) accused of corruption, self-enrichment, nepotism and plain incompetence (SAIEA, 2005).

In sum, it may be stated that South Africa is still in the process of creating its *public sphere* – that vital social space for discovering the general will linking people to their government – out of the fragments of the past. Legislation alone is not sufficient to call into being such a sphere (although, as was suggested in Section 3.1.6, it may be effective in destroying one.) It must be accompanied and supported by a process of healing and social change that can only come from the hearts of people.

### 3.6 THEORETICAL APPROACHES TO PUBLIC PARTICIPATION

In this final section of the chapter, attention is turned from the *practice* of public participation to its *conceptual analysis*. It does not attempt to provide a complete inventory of every theory ever developed to describe public participation. The perspectives that are discussed below have been selected by virtue of the fact that each contains elements that have been incorporated in the models developed during this study and are presented in Chapters 6 and 7.

The first model to be discussed is Sherry Arnstein’s (1969) “*ladder of citizen participation*,” which is arguably one of the most frequently cited works in the field (Webler & Renn, 1995).

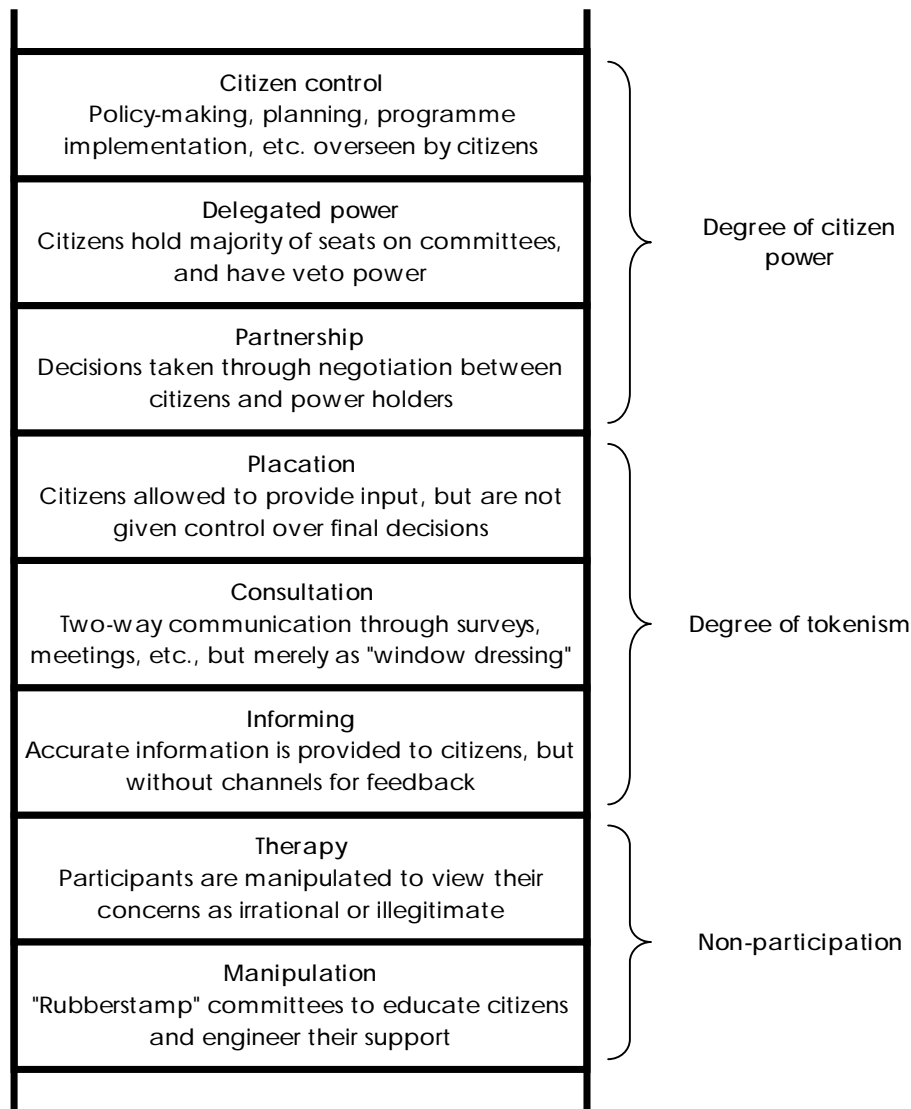


This model distinguishes between different degrees of participation and describes the characteristics and relative merits of each. This is followed by a discussion of the *competing values model*, originally developed by Quinn and Rohrbaugh (1981) to describe organisational effectiveness, and adapted for the description of public participation by Vari (1995) and Mumpower (1995). This model emphasises some of the inevitable trade-offs between the various objectives of public participation.

The third model to be presented is Ortwin Renn's (1992) *social arena theory*, which describes the various strategies that participants might use to influence the outcome of a debate. The largest amount of space in this section is devoted to the fourth model – Thomas Webler's (1995) "*fairness and competence*" model of the criteria for effective public participation. As a preamble to the discussion of this model, some of the problems inherent in the definition of effective participation are highlighted by means of an analogy to the psychological definition of "normality."

### 3.6.1 A ladder of participation

Sherry Arnstein's landmark analysis, published as a "Ladder of Citizen Participation" (Arnstein, 1969), has been reprinted more than 80 times and has been translated into several foreign languages (Webler & Renn, 1995). This publication overturned conventional wisdom about the relationship between public participation and institutional legitimacy. Prior to Arnstein, general opinion was that the central function of public participation is to *educate the public*. It was assumed that, if citizens were informed about the reasons underlying institutional decisions, the acceptability of these decisions would be enhanced. Arnstein, however, argued that public participation can improve the legitimacy of decisions only if the *direction of influence were reversed* – in other words, if participatory forums were used, not as an opportunity to manipulate the public, but as a means of giving citizens greater control over decisions that affect them. Arnstein's ladder is illustrated in the figure below.



**Figure 3.4 Arnstein's ladder of citizen participation**

### 3.6.2 The Competing Values model

It was mentioned earlier that it is not always possible for a public participation process to produce outcomes that satisfy all role-players. One of the reasons for this difficulty is the fact that general public preferences are sometimes in conflict with the interests of individuals or groups that stand to be directly affected by a decision. Public participation also presents other inevitable trade-offs. For example, the need to base decisions on the best available information is not always compatible with the requirement that the public be allowed to influence decisions. Members of the public do not necessarily have the necessary technical expertise to understand all issues relevant to the situation, and they do not always attribute credibility to experts who might wish to advise them on such matters.

In order to elucidate such trade-offs, a theoretical framework for organisational analysis has been adapted to describe conflicts among the various criteria for successful public participation (Mumpower, 1995; Vari, 1995). This framework is known as the *Competing*

*Values Approach* (Quinn & Rohrbaugh, 1981). It defines two basic dimensions along which contrasting perspectives on effective decision-making processes may be arranged. The first dimension is related to decision-making *structure*. At the one extreme of this dimension is an exclusive focus on *flexibility*; at the other extreme is an insistence on complete *control* over decision-making. The second dimension is related to the *focus* of decision-making. This dimension ranges from an internally-focused emphasis on the needs and desires of those *directly affected* by a decision to an externally-focused emphasis on the needs and desires of the *broader public*.

This two-dimensional typology makes it possible to distinguish between four general perspectives on decision-making:

- ✓ The *rational* perspective (high control, external focus);
- ✓ The *empirical* perspective (high control, internal focus);
- ✓ The *consensual* perspective (high flexibility, internal focus); and
- ✓ The *political* perspective (high flexibility, external focus).

Each perspective emphasises a distinct set of *procedures* (means), which are applied to achieve desired *ends*. For example, decision-making processes allied to the *political* perspective employ procedures that are *adaptable* (i.e. that can be changed to accommodate the demands of various stakeholders wishing to become involved in the process). Such adaptability enables them to reach decisions that are *legitimate* (i.e. inspire general public confidence in their fairness). The means and ends emphasised by each perspective are illustrated in Figure 3.5 below.

The central thesis of the competing values theory is that the “means” employed within each perspective generally conflict with the “ends” that the perspective in the opposite quadrant seeks to achieve. Thus:

- ✓ *Adaptable* processes make it difficult to achieve the type of *accountability* associated with the stable, consistent and predicable methods employed during data-based processes. More technocratic, *data-based* processes, on the other hand, often yield decisions that suffer from a lack of *legitimacy*, or general acceptance.
- ✓ Processes offering participation to directly affected parties are generally less *efficient* than the goal-centred processes associated with the rational perspective, while decisions taken through the latter approach are often not *supported* by those affected parties.

Because it is not possible for a public participation process to yield decisions that are simultaneously legitimate, accountable, supportable and efficient, each participation model has to sacrifice some priorities for the sake of others. Hence, different models also employ different types of procedures. The competing values approach may therefore be regarded both as an alternative *taxonomy* of participation methods and as a method of identifying trade-offs among the various *criteria* for successful participation.

The use of the competing values theory as a taxonomy may be illustrated by considering the differences between regulatory negotiation, citizen advisory committees and planning cells (see Section 3.4.3 above). Regulatory negotiation is highly goal-centred, and yields

decisions in an efficient manner. Citizen advisory committees are somewhat less goal-centred, and therefore also less efficient. Both models sometimes yield decisions that are not supported by stakeholders. Planning cells, by contrast, employ decision-making procedures that are far more geared toward direct participation by stakeholders. Consequently, their decisions enjoy greater support. However, they achieve this end at the expense of efficiency. The theme of conflicts among the criteria for effective public participation will be taken up again in Section 6.2.4.

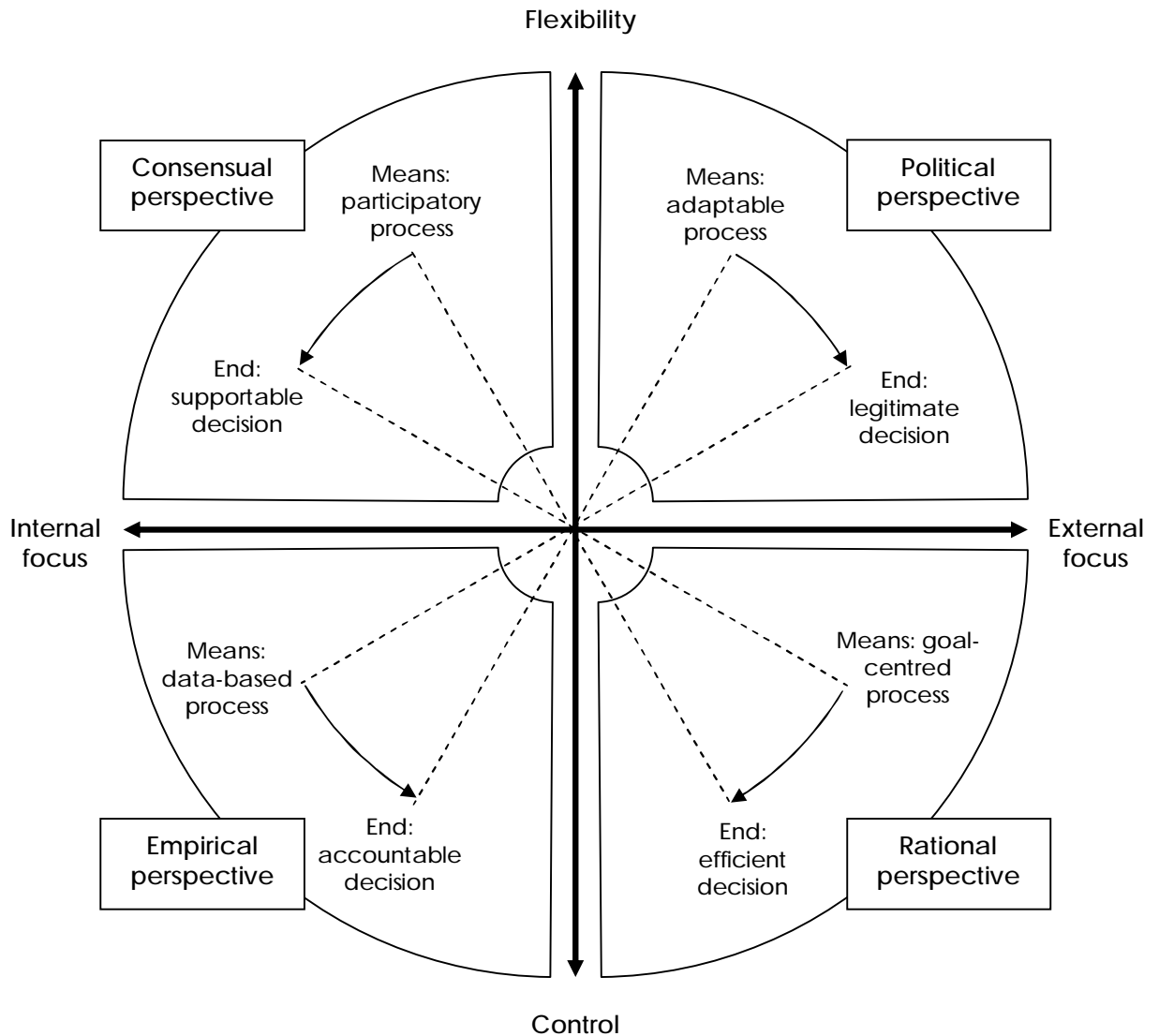


Figure 3.5 The competing values model

### 3.6.3 Arena theory

Because policy decisions can have economic, social or environmental consequences that are “quite substantial for organized interest groups” (Fiorino, 1995, p. 226), much political activity in open and decentralised democratic systems can be described in terms of

competition among such interest groups for influence over public policy. *Arena theory* (Jaeger, Renn, Rosa, & Webler, 2001; Renn, 1992) was developed to describe and analyse such competition, particularly in the context of debates over policies related to *risk*. Areas to which this theory has been applied include debates over genetically modified food and forest biotechnology (Rask, 2005).

a) *Actors in a social arena*

A social “arena” as conceptualised by this theory is not a geographical or organisational location, but a *symbolic space* in which political actions occur that influence collective decisions or policies. (It therefore bears some resemblance to the notion of a “public sphere.” It differs from a public sphere, however, in that it is limited to a particular set of issues rather than the entire range of a society’s political concerns.) This space is populated by a number of actors. The *principal actors* in the drama are those groups in society that seek to influence policies. They might do so for a variety of reasons, and they might differ in terms of the resources they have at their disposal (Jaeger et al., 2001). Representatives of industry, for example, might participate with the aim of forestalling the promulgation of strict environmental legislation that would increase the cost of doing business. Environmental interest groups, on the other hand, might participate with the hope of influencing policy in the opposite direction. In terms of the arena metaphor, actors with greater influence are located closer to the centre of the arena.

Beside the leading roles, other actors in the arena include *rule enforcement agencies* (who ensure that the actors abide by the formal rules of the debate, and may also coordinate the processes of interaction), and *issue amplifiers* (the media and policy analysts). The latter perform the role of professional “theatre critics” in that they “observe the actions on stage, communicate with the principal actors, interpret their findings, and report them to the audience” (Rask, 2005, p. 7). The *spectators* surrounding the arena include all parties who are interested in the debate but do not play an active part in it. Some spectators might, however, be enticed to enter the arena to show their support of or opposition to certain actors or performances.

b) *Sectors and resources*

The central hypothesis of arena theory is that individuals and organisations can influence policy-making process only if they have sufficient resources at their disposal. It is assumed that actors in an arena are goal-oriented and that they select the most effective means to mobilise their resources in order to achieve their goals. The strongest, most resourceful player then “wins the game” by exerting the greatest influence on the resultant policy decisions.

Arena theory also posits that society consists of a number of intertwined systems, or *sectors*, and that each sector has its own characteristic types of resources. These sectors and their concomitant resources are depicted in the table below. Each actor within an arena is assumed to have a particular “home sector,” which can be determined by identifying the social resource that forms that actor’s usual currency for obtaining and exerting influence. For example, commercial enterprises routinely exert influence through money; their home sector is therefore the *economic* sector. Environmental pressure groups, on the other hand, rely on shared meanings (for example, ideas regarding the value of the environment) and on group solidarity to promote their agenda; this places them within the *cultural* sector.

**Table 3.14 Social sectors and their characteristic resources**

Sector	Resource
Economics	Money
Politics	Power
Social relationships	Social influence (trust, prestige)
Culture	Value commitment (shared meaning, solidarity)
Science	Evidence

A characteristic feature of social resources is that they can be *traded* between sectors. For example:

- ✓ Religious or environmental organisations that raise funds by appealing to “the cause” are using *value commitment* (the currency of the cultural sector) to obtain *money* (the currency of the economic sector).
- ✓ A company might hire or subpoena experts to confirm that its activities do not have significant negative impacts on the environment. This implies trading *money* for *evidence*.
- ✓ A company that is concerned with its credibility in the eyes of the public might also hire a reputable figure (a sports hero, for example) to act as its representative or spokesperson. This amounts to trading *money* for *social influence*.
- ✓ Politicians frequently use solidarity and trust (resources in the sectors of social relationships and culture) to win votes (in other words, power).

This exchange of resources between sectors has its limitations, however. If a resource is used too extensively outside the sector in which it is based, its effectiveness might be eroded. For example, excessive use of money to win social influence or value commitment may be seen as bribery. On the other hand, actors in the economic sector who make too-frequent appeals to values may be regarded as betraying signs of weakness.

**c) *The relevance of arena theory to public participation***

As the discussion on applications of public participation earlier in this chapter indicates, policy-making represents a *particular instance* of citizen involvement in decision-making. The question therefore arises of whether arena theory is applicable to the entire spectrum of participation processes. In order to answer this question, it is necessary to explore the similarities and differences between policy debates and other participative forums. *Similarities* include the fact that every public participation process creates a symbolic space for debate, and that this space is invariably populated with a variety of role-players who try to influence decisions in their favour. Moreover, every public participation process has certain rules governing interaction, as well as a particular role-player (usually the public participation facilitator) who is charged with the responsibility of enforcing those rules.

Dimensions along which applications of public participation might *differ* include the identity of “*issue amplifiers*.” Generally, only very large or controversial public participation processes attract enough attention for the media to be interested in following and reporting on their progress. In smaller processes, principal role-players themselves might assume the



responsibility of reporting back to the organisations or communities they represent. Applications of public participation may also differ in terms of the identity of “principal actors.” In contrast with role-players in policy debates, participants in site-specific processes (such as environmental impact assessments) are not always limited to *organised interest groups*. They might also include *individuals* who stand to be affected by a proposed development, and who represent no-one’s interests but their own.

Perhaps most significant for the general application of arena theory to public participation, however, is the fact that *not all processes place equal emphasis on competition among actors*. In some cases, a public participation facilitator may go to great lengths to counteract the effects of competition by “levelling the playing field” among role-players (see Section 6.3.7 below). This might be accomplished by empowering and supporting parties who are less well-resourced or more vulnerable than others.

Despite these differences, arena theory represents a powerful tool for illuminating the misunderstandings, conflicts and other counterproductive behaviours that sometimes occur in public participation processes other than policy debates. For example, it explains the frequent disputes between technical experts and community organisations or environmental groups. From the perspective of arena theory, the experts form part of the scientific sector where influence is exerted by the provision of evidence based on hard data and rigorous inference. Environmentalists, by contrast, use value commitment to buy social influence. From their perspective, scientific evidence is “ammunition” to be used when (and if) it is able to further this aim (Fiorino, 1995). Consequently, experts often perceive environmental groups as exploiting people’s ignorance and fears.

At the same time, project proponents are often exasperated by the fact that the provision of more and better evidence does nothing to dispel public concerns that the proposed project will have disastrous consequences for the environment (Yim & Vaganov, 2003). Contrary to its intention, a stream of confirmatory evidence might actually increase public mistrust. Arena theory can explain this phenomenon by pointing out that the project proponent is making excessive use of the scientific sector’s dominant resource in a sector where it does not belong. They are trying to use evidence as a lever in the social sector to buy *trust*, thereby depleting the effectiveness of this resource.

The author of arena theory, Ortwin Renn (1992), also collaborated in the development of the “fairness-and-competence” model of public participation, which forms the topic of Section 3.6.5 below. Before this theory is described, however, it is necessary to sketch its context by discussing alternative approaches to evaluating public participation. This discussion is presented in the following section, where it is illuminated by means of an analogy to a similar situation in the field of psychology.

#### **3.6.4 The problem of defining effective participation: a psychological analogy**

The problem of defining what is meant by “successful” public participation is akin to a question that has been a source of much controversy in psychology: that of defining what is meant by “normal” behaviour (Weiten, 2001). There are three common approaches to the latter problem (Carson & Butcher, 1992), each with its own strengths and weaknesses:

- ✓ The first approach is to define “normal” behaviour as behaviour that contributes toward individual and group *well-being*. The term “well-being” is intended to denote more than survival and maintenance; it “also implies growth and fulfilment – the actualization of potentialities” (Carson & Butcher, 1992, p. 8). This approach presents an important problem: how does one define concepts such as “growth” and “fulfilment”? These are value-laden terms, and are therefore meaningful only with reference to a specific set of norms. What I regard as my “potentialities” will depend to a large degree on the values espoused by the culture in which I have grown up.
- ✓ In order to sidestep this difficulty, one might define “normal” behaviour as behaviour that *conforms to social norms and values* (Scheff, 1984). However, this approach has its own shortcoming: it does not take into account the possibility that some societies might be “sick” in the sense that their norms and values are patently distorted and pathological. If one is well-adjusted to a profoundly disturbed society, does this truly make one “normal”?
- ✓ Psychologists dissatisfied with the cultural relativism of the aforementioned approach might opt for a more operational definition of normality. According to this definition, normality is simply the *absence of symptoms*. Hence, one is “normal” if one’s behaviour does not fit the commonly accepted diagnostic criteria for any psychological disorder. This approach may be criticised on the grounds of its artificiality: diagnostic manuals such as the DSM series are not entirely free from the influence of cultural norms (Weiten, 2001). The question may also be raised of whether freedom from symptoms truly guarantees growth and self-fulfilment (Frankl, 1985). Despite its shortcomings, this approach is widely used in research and in clinical practice (Carson & Butcher, 1992). Its success may be ascribed to the fact that it lends a measure of objectivity (whether real or perceived) to a field that would otherwise elude all attempts at systematic investigation.

The contrast between the three approaches is depicted in the figure below.

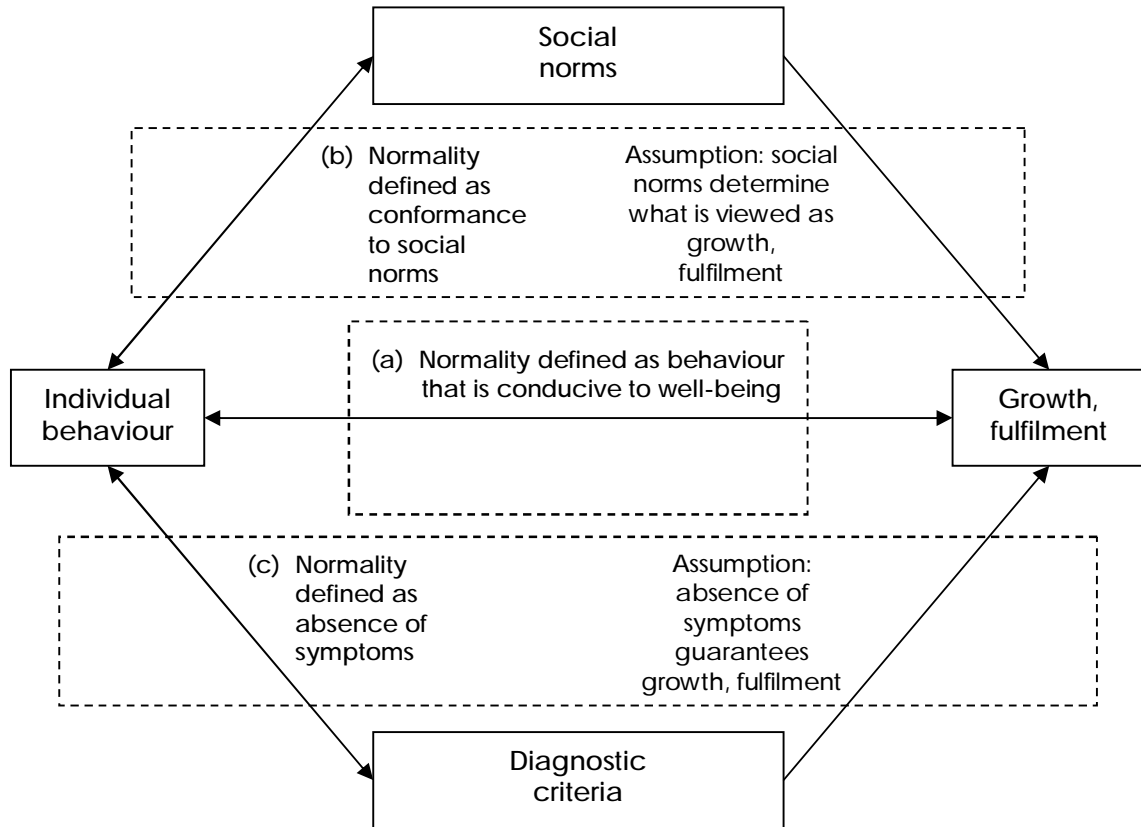


Figure 3.6 Three approaches to defining "normal" behaviour

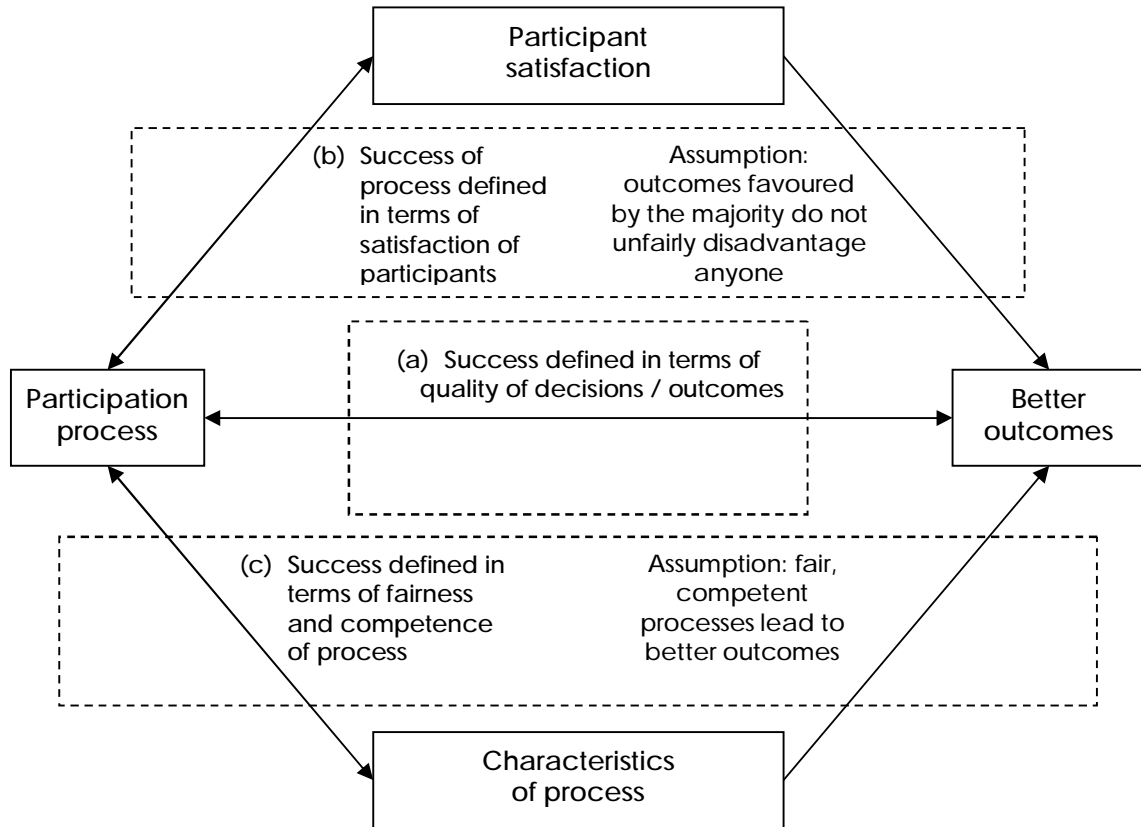
In the assessment of the success of public participation, three approaches may be discerned that are parallel to the three definitions of normality discussed above (Raimond, 2001; Webler, 1995):

- ✓ The first approach is to evaluate the success of a participation process, technique or model in terms of its substantive *outcomes*. This approach involves determining whether participation processes fulfil the various functions outlined in Section 3.2 – in other words, does it lead to better decisions, greater stakeholder support, etc. than would have been the case without participation? This approach has a number of shortcomings, however. First, it is not always possible to know how decisions would have turned out *without* participation. Second, it raises the difficulty of deciding *what counts as "good" decisions*. Like the assessment of psychological growth and fulfilment, evaluating the quality of a decision is a value judgement. Hence, the problem then arises of *whose values should be used to make this judgement*.
- ✓ The second approach (which is intended to overcome the problems associated with the aforementioned approach) involves evaluating a participation process in terms of the *subjective satisfaction of participants* (Carnes et al., 1998). This approach also has its shortcomings. The greatest difficulty is associated with the fact that, in many decisions, there are necessarily winners and loser. This is especially the case if different stakeholders have different values and preferences. In such cases, the participants who lost (whose values are most offended by the decision outcome) will

necessarily rate the participation process more negatively than those who won. Reconciling such divergent ratings may present a significant problem: what if a vulnerable minority group is under-represented in the participation process, and the outcome of the process significantly compromises its interests by being slanted in favour of dominant social groups? Such a process would receive a positive evaluation from the majority of participants – despite the fact that it is patently inequitable. Hence, evaluating participation processes in terms of participant satisfaction may subject some vulnerable groups to the “tyranny of the majority” – just as evaluating normality in terms of social norms may lead to unconventional (but not maladaptive) behaviour being labelled as “disturbed.”

- ✓ In order to overcome the shortcomings of the two approaches described above, Webler (1995) developed a set of criteria that are independent of outcomes and subjective satisfaction. These criteria are grouped under two main headings: *fairness* and *competence*. The defining feature of his approach is that, unlike the two alternatives discussed above, it does not focus on the *outcomes* that a participation process tries to achieve. Instead, it focuses on the characteristics of the process itself. (Greyling, 1998) uses the terms *content objectives* and *process objectives*, respectively, to denote the desired outcomes of a public participation initiative and the desired characteristics of the process. Evaluating public participation in terms of outcomes or participant satisfaction therefore entails assessing the extent to which it achieves its *content objectives*. By contrast, Webler’s approach involves assessing it against its *process objectives*. Defining the success of a public participation initiative in terms of its processes rather than its outcomes has its own shortcomings. Just as the absence of symptoms does not guarantee psychological growth and fulfilment, fair and competent processes do not necessarily lead to better outcomes.

The contrast between these three approaches is summarised in Figure 3.6 below. The subsequent section provides a more detailed discussion of Webler’s criteria of fairness and competence.



**Figure 3.7 Three approaches to defining the success of public participation**

### 3.6.5 Fairness and competence

The theory of fairness and competence builds on the work of the German sociologist and philosopher, Jürgen Habermas (1971) (who, as was mentioned in Chapter 2, is one of the major proponents of critical theory in the social sciences). Habermas developed a theory of *universal pragmatics* to explain how language is used in everyday life to produce collective understandings and mutual agreements. The theory states that every speech act makes at least one implicit *validity claim*. Part of the underlying agreement between human beings that makes speech possible is the presupposition that the speaker will be able to *redeem* each validity claim – in other words, verify its accuracy to the satisfaction of all participants – should this be required.

The theory also distinguishes between four types of validity claims. Redemption of each of these four types of validity claim is presumed to require a fundamentally different type of discourse, through which participants collectively decide whether a speaker’s claim is valid. The table below outlines Habermas’ typology of validity claims and their associated forms of discourse.

Table 3.15 Types of discourse in Habermas' theory

Type of speech act	Type of validity claim	Example	Type of discourse required for redeeming validity claims
Communicative	Comprehensibility (contention that statement is linguistically proper)	"A landfill site is a place where trash is buried"	Explicative (reference to terms, definitions, rules of grammar, etc.)
Constantive	Truth / correctness (claim that the statement is an accurate reflection of the external world)	"Landfill X occupies 20 hectares"	Theoretical (reference to facts, observations, etc.)
Regulative	Normative rightness (the statement accurately distinguishes right from wrong)	"A landfill site should not pose a hazard to health or the environment"	Practical (reference to social relations, norms, moral codes, etc.)
Representative	Sincerity (claim that the statement accurately represents the speaker's subjective experience)	"I am concerned about the possible effect of the landfill site on my health"	Therapeutic (reference to the speakers' experiences, emotions, perceptions, etc.)

How are validity claims redeemed? Habermas' answer is that redemption occurs through discussing, exploring and reflecting on validity claims so as to root them in the *background consensus of the lifeworld*. Redemption is essentially the act of answering the question: "Why do you say that?" Even though all participants might not have the specific knowledge required to make final judgements on all validity claims, everyone has the ability to recognise *what it would take* to prove a statement comprehensible, true, right or sincere.

Habermas then goes on to define an *ideal speech situation*, which is discourse in which:

1. All participants have an equal chance to employ communicative, regulative and representative speech acts. (Note the absence of constantive speech acts from this list. This omission implies that equal access to factual information is not a precondition for an ideal speech situation); and
2. All participants have an equal chance to make, interpret, explain, question or refute any validity claim.

Habermas accedes that the criteria for an ideal speech situation are never fully met in practice. He also acknowledges that language can be used to pursue strategic goals such as misrepresentation or manipulation. However, he maintains that such strategies are all *secondary forms of communication* that rely on the presupposition of language used for acquiring mutual understanding. In other words, it would not be possible to lie if people did not ordinarily trust the validity or sincerity of one another's speech acts.

a) *Fairness*

An ideal speech situation, then, is one that is characterised by *fairness*. Webler (1995) argued that such fairness represents one of two fundamental criteria for effective public participation. Elaborating on Habermas' definition, he laid down the following rules to which a public participation process or model must conform in order to ensure fairness:



1. All people who consider themselves potentially affected by the results of a discourse must have an equal opportunity to attend and participate in the discourse. Webler acknowledges that, in real life, the exclusion of certain potentially affected parties from discourse is sometimes a practical necessity (because of cost or time constraints, for instance). In such cases, exclusion should be done in a way that is fair to all – for example, by means of random selection of participants.
2. All participants must have an equal opportunity to *make* validity claims regarding comprehensibility, truth, rightness and sincerity.
3. All participants must have an equal opportunity to *challenge* the comprehensibility, truth, rightness or sincerity of one another's validity claims.
4. All participants must have an equal opportunity to influence the choice of (a) how the final judgement of validity claims will be made and (b) what course of action will be adopted if no consensus can be reached. In other words, all participants must have equal opportunity to determine the rules of the discourse.

In sum, *fairness* in public participation means upholding the ideals of political equality and popular sovereignty, thus providing each individual with an equal chance to

... defend his or her personal interests and values and to contribute to the definition of the collective will. ... When participation is fair, everyone takes part on an equal footing [which means that] not only are people provided with equal opportunities to determine the agenda, the rules of discourse, and to speak and raise questions, but also equal access to knowledge and interpretations (Webler, 1995, p. 38).

Webler points out that, for a public participation process to be fair, the four rules listed above must apply at three levels:

- A. *Agenda- and rulemaking.* By contributing towards setting the agenda, all participants have a chance to ensure that their concerns will be addressed. Fairness in this respect also implies that sufficient time must be allocated for every item on the agenda. Furthermore, all participants must have equal opportunity to influence the choice of such rules that will be used to prevent interruptions, threats, deviations from the agenda, etc. during the participation process.
- B. *Moderation and rule enforcement.* Discourse participants must agree on a means to enforce rules. This could involve appointing a neutral facilitator or moderator. To ensure fairness, the behaviour of the moderator should also be open to the scrutiny and subject to the approval of all participants.
- C. *Discussion.* Even though different participants may have different specialities, and hence access to different types of background knowledge, all must be able to argue for what they believe and to share the responsibility for making final judgements on one another's validity claims.

It is thus possible to summarise the fairness criteria of public participation in the form of a matrix. Such a matrix is presented in the table below.

Table 3.16 Webler’s framework for evaluating fairness in public participation

ACTIVITIES	MODEL PROVIDES ALL PARTICIPANTS WITH AN EQUAL CHANCE TO:			
	1. Attend	2. Initiate	3. Debate	4. Decide
A. Agenda and rule making	<ul style="list-style-type: none"> <li>Be present or represented during agenda-setting and rulemaking</li> </ul>	<ul style="list-style-type: none"> <li>Put concerns on the agenda and approve / propose rules for discourse</li> </ul>	<ul style="list-style-type: none"> <li>Debate and critique proposals for agenda and rules</li> </ul>	<ul style="list-style-type: none"> <li>Influence final decision about agenda and rules</li> </ul>
B. Moderation and rule enforcement	<ul style="list-style-type: none"> <li>Be present or represented at the discourse</li> </ul>	<ul style="list-style-type: none"> <li>Suggest moderator and method for facilitation</li> </ul>	<ul style="list-style-type: none"> <li>Challenge and support suggestions for moderator and method for facilitation</li> </ul>	<ul style="list-style-type: none"> <li>Influence final selection of moderator and method for facilitation</li> </ul>
C. Discussion		<ul style="list-style-type: none"> <li>Make and criticize validity claims</li> </ul>	<ul style="list-style-type: none"> <li>Make and criticize validity claims</li> </ul>	<ul style="list-style-type: none"> <li>Influence decision on method for resolving validity claim disputes</li> </ul>

b) *Competence*

Webler argues that fairness alone is not sufficient to ensure effective public participation. Participants’ discourse must also be *competent*. At the most basic level, this means that all participants have the ability and skill to make linguistically comprehensible and logically sound statements. However, competence is not just an attribute of individuals: it can also be a quality of the *rules* of discourse. Clearly, “there are better and worse ways to resolve validity claims. If we want to know the geology underlying a landfill, we do not vote, but conduct certain engineering studies” (Webler, 1995, p. 53).

“Competent” discourse rules, therefore, are rules that promote, complement and augment the communicative competence of individual discourse participants. Such rules enable participants to construct “the most valid understandings and agreements possible, given what is reasonably knowable at the time” (Webler, 1995, p. 58). While valid understanding does not necessarily lead to consensus among participants, it is a necessary precondition for consensus that is *rationaly motivated* – in other words, not based on indoctrination or brainwashing.

In order to fulfil these functions, discourse rules must meet the following criteria:

- ✓ They must provide all discourse participants with *access* to the *information* required to make validity claims and to criticise the claims of others. Such information might include standard lists of terminology, expert testimony, etc.
- ✓ Judgements about conflicting validity claims must be made according to the *most reliable procedures or techniques available*. These might include the standard rules for chairing formal meetings, the use of outside panels to peer review information provided by experts, etc.

- ✓ Given that it is sometimes necessary to *translate representative speech acts* into constative and/or normative ones (for example, it may be necessary to ask a participant, “Why do you find the proposed landfill so threatening?” to uncover his or her underlying beliefs and normative convictions), discourse rules must provide speakers with the opportunity to *verify* the attempts of others to make such translations.

In sum, competence in public participation implies that the rules governing the process must ensure (a) access to *relevant information* and (b) adherence to the *best available procedures*. Furthermore, the rules must ensure that these two conditions are met in all four types of discourse: explicative discourse (which is concerned with terms and definitions), theoretical (or factual) discourse, practical discourse (which is concerned with issues of right and wrong) and therapeutic discourse (which pertains to speakers’ subjective experience). These conditions are summarised in the table below.

**Table 3.17 Webler’s framework for evaluating competence in public participation**

TYPES OF DISCOURSE	MODEL ENSURES THAT:		
	(a) Access to knowledge	(b) Best procedures	
Explicative (terms, definitions)	<ul style="list-style-type: none"> <li>All participants have equal access to agreed-upon standards and definitions</li> </ul>	<ul style="list-style-type: none"> <li>All participants understand each other’s terms and definitions</li> <li>Disputes about definitions, etc. take advantage of pre-established reference standards</li> </ul>	<ul style="list-style-type: none"> <li>Misunderstandings are reduced before reaching agreement</li> <li>Prior consensus is reached on the technique to be used to decide which validity claims will be redeemed by the group</li> </ul>
Theoretical (facts)	<ul style="list-style-type: none"> <li>All participants have equal access to available and relevant systematic knowledge about the objective world</li> <li>All participants have equal access to available and relevant anecdotal and intuitive knowledge about the objective world</li> <li>Uncertainty of factual information is considered along with content</li> </ul>	<ul style="list-style-type: none"> <li>Mechanisms are available to check if factual claims are consistent with prevailing opinion in the expert community or with anecdotal knowledge of others not involved in the discourse</li> <li>Mechanisms are available to separate cognitive from normative claims</li> <li>Participants have the option to delegate determination of factual truth to an outside expert panel</li> <li>Cognitive claims are examined by legal experts</li> </ul>	
Practical (values)	<ul style="list-style-type: none"> <li>There are not implicit barriers that will bias the distribution of interests that participate</li> <li>The affected population is determined using objective criteria, but also allows people in the region to make subjective determinations</li> <li>The discovery and development of mutual understandings of values is promoted among all participants</li> <li>The factual implications of normative choices are considered</li> </ul>	<ul style="list-style-type: none"> <li>The discovery and development of a mutual understanding of values is promoted through rational and formal discourse procedures that build compromises, so as to formulate a generalised will</li> <li>Normative choices are not inconsistent with themselves or with the general will</li> <li>Normative choices are not incompatible with laws</li> <li>Normative choices are compatible with present expectations</li> </ul>	
Therapeutic (subjective experience)	<ul style="list-style-type: none"> <li>Discussion about the authenticity of the speaker’s expressive claims is promoted</li> <li>Examination into speakers’ sincerity is promoted</li> </ul>	<ul style="list-style-type: none"> <li>An examination into the qualities of the situation is promoted</li> <li>Individuals have enough time to accurately state and defend their expressive claims</li> <li>A translation scheme is used that is acceptable to everyone</li> </ul>	

### 3.7 CONCLUDING THOUGHTS

One message that emerges from the material presented in this chapter is that public participation is not a single “thing.” It is a beast with many heads, and it has taken innumerable shapes throughout a history that stretches back as far as the dim beginnings of the human race. It also offers a variety of benefits for communities and decision-makers – but not all of these benefits are necessarily regarded as equally important by all concerned. Furthermore, there is no universal formula for ensuring that public participation processes produce optimal results.

Given its mercurial nature, it is not surprising that there are diverse theoretical viewpoints on public participation, or that there are important questions (such as the criteria of good decisions, the optimal degree of participation and the relationship between conflict and cooperation) that have yet to be fully answered. A phenomenon of such prodigious complexity is not easily tied down by words and symbols and diagrams, nor does it allow itself to be caught in the net of sweeping generalisations. The most appropriate attitude for students of public participation is therefore one of determination tempered with humility and an awareness of the limitations of human knowledge.

The multifarious character of public participation also confirms the need for a suitable meta-theoretical or philosophical framework to guide research in the field. Such a framework must have the ability to capture detail and diversity – but without losing sight of the “big picture” constituted by overarching patterns and commonalities. It was argued in the introductory chapter that *systems theory* possesses these virtues, and that it has a history of successful application in a number of disciplines. In the following chapter, an arsenal of systemic concepts will be built up in preparation for the explorations of public participation embarked upon in Chapters 6 and 7.

## CHAPTER 4: AN OVERVIEW OF SYSTEMS THEORY

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*One of the tests of a theory is that, once grasped, it appears self-evident.*

– Arthur Koestler

In Chapter 1, it was argued that many phenomena can be described at more than one level, and that systems theory offers a set of tools for elucidating the relationships between contrasting levels of description. This chapter aims to explore some of these tools and illustrate a few of their applications. The exposition offered in this chapter relies on a central tenet of systems theory that was mentioned in Section 1.3 – namely, that diverse types of systems often display similar formal characteristics. Thus, if one wishes to understand the systemic properties of a complex or mysterious system (say, a group of people), it is often wise to look for analogies between this complex system and one that is simpler and more familiar (say, an elementary mechanical system) – provided, of course, that the power of the analogy does not lead one to overlook the essential differences between the two systems.

In keeping with this maxim, the chapter is structured around a recurring theme: a mechanical system of such simplicity that its design, once grasped, appears self-evident. Despite its simplicity, this system displays a number of properties that can also be found in highly complex biological, social and ecological systems. It is therefore employed as a “model system” to introduce systemic concepts before their application to more intricate phenomena is explored. The model system in question is a *domestic heater equipped with a thermostat*.

### 4.1 BASIC CONCEPTS OF SYSTEMS THEORY

Suppose one were asked to make observations of a particular thermostat and to compile a simplified description of it on the basis of those observations. The description could take many possible forms, two of which are provided below:

*Description 1:*

*It is a plastic box, approximately 5 cm to a side. Inside is a metal bar made of two alloys that have different thermal expansion coefficients. Because of the difference in expansion coefficients, changes in the bar’s temperature cause it to bend or straighten. The metal bar is connected to a circuit in such a way that it acts as a switch.*

*Description 2:*

*The thermostat responds to changes in ambient temperature. When the temperature rises above a particular value, the thermostat interrupts the power supply to a heater, thus causing the temperature to drop again. If the*



temperature drops a certain number of degrees below this value, however, the thermostat switches the heater on again. Thus, the thermostat maintains the temperature of the room within a given range despite fluctuations in external temperature.

These two descriptions are graphically depicted in the figures below.

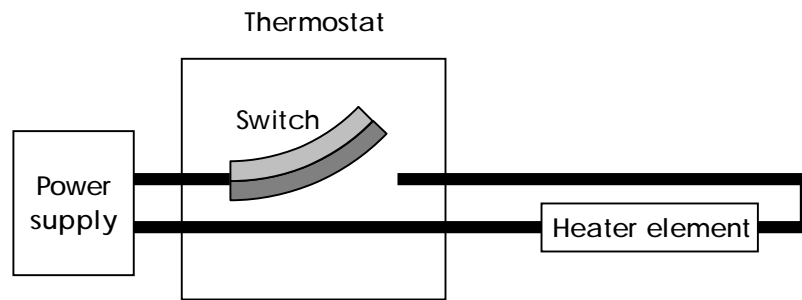


Figure 4.1 A possible description of a thermostat

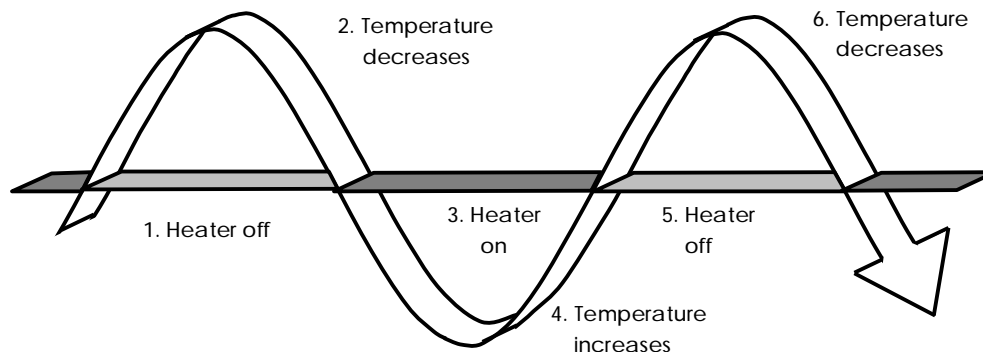


Figure 4.2 Another possible description of a thermostat

The difference between the two descriptions resides in the fact that, whereas the first concentrates on the *structure* or *substance* of the thermostat, the second concentrates on the *formal* properties underlying its *function*. The two descriptions represent two contrasting ways of looking at the world. Bateson (2000) argued that the history of these two modes of thought can be traced at least as far back as ancient Greece, and that they gave rise to two divergent scientific traditions. One of these traditions eventually developed into systems

theory, while the other is embodied in its antithesis – reductionism. This history is briefly outlined below.

#### 4.1.1 History of systems theory

According to Bateson (2000, p. 449), the earliest recorded instance of tension between the two modes of enquiry involves “the Pythagoreans versus their predecessors, and the argument took the shape of ‘Do you ask what it’s made of – earth, fire, water, etc.?’ Or do you ask, ‘What is its *pattern*?’ Pythagoreans stood for inquiry into pattern rather than inquiry into *substance*. That controversy has gone on through the ages, and the Pythagorean half of it has, until recently, been on the whole the submerged half.”

One reason why enquiry into pattern was pushed to the sideline is perhaps because the *other approach* proved to be so successful in answering questions about the nature of the world. By designing their research around an enquiry into substance, scientists have revealed to us that all living organisms are composed of cells, that cells are made up of complex chemical compounds, that these compounds can be disassembled into atoms, which in turn consist of nuclei surrounded by electrons, etc. Indeed, much of the progress achieved by Western science over the last two thousand years may be regarded as a progressive discovery of underlying substances, the rate of discovery being hampered only by the fact that “at each step there has been a level of fundamental constituents that could not be analysed any further” (Capra, 1996, p. 29).

The reductionist programme was (and is) guided by a number of assumptions. One of these is the belief that, once an entity has been reduced to its component parts, “the parts themselves cannot be analysed any further, except by reducing them to still smaller parts” (Capra, 1996, p. 29). It is also assumed that a phenomenon is best understood by studying its constituent parts in isolation, since “specific factors can be isolated from one another and examined for their independent contributions to the phenomena of interest” (Vallacher & Nowak, 1994a, p. 8). Thus, reductionist enquiry “consists, first, of taking apart what is to be explained, disassembling it, if possible, down to the independent and indivisible parts of which it is composed; second, of explaining the behaviour of these parts; and, finally, of aggregating these partial explanations into an explanation of the whole” (Blanchard & Fabrycky, 1990, p. 11). This approach was pursued in a variety of fields, each with its own set of fundamental entities to which it endeavoured to reduce observed phenomena: “atoms in physics, simple substances in chemistry, cells in biology, and monads, instincts, drives, motives, and needs in psychology,” etc. (Blanchard & Fabrycky, 1990, p. 11).

The Pythagorean side of the age-old argument was eventually to re-emerge, however. During the early years of the twentieth century, evidence from a number of fields (including Gestalt psychology, biology, ecology and quantum physics) amassed a convincing argument that “systems cannot be understood by [reductionist] analysis. [It became increasingly clear that] properties of the parts are not intrinsic properties, but can be understood only within the context of the larger whole” (Capra, 1996, p. 29).

One of the first authors to formalise these insights was the Austrian biologist Ludwig von Bertalanffy. He pointed out that complex systems (whether biological, mechanical or social) very often share formal similarities, and he argued for the establishment of a unified discipline to study these similarities. Such a discipline, he suggested, would enable scientists in various fields to avoid unnecessary duplication of work (Capra, 1996). During the late

1930s, von Bertalanffy also laid the foundations for such a discipline – a conceptual framework he called *general systems theory* (Von Bertalanffy, 1976).

Another important event in the development of systems thinking was “a series of legendary meetings in New York City, known as the Macy Conferences” (Capra, 1996, p. 52). These meetings were attended by scientists from various disciplines, including mathematics, neuroscience, the social sciences and engineering. Among the leading figures at the conferences were mathematician Norbert Wiener and anthropologists Gregory Bateson and his wife, Margaret Mead. An important theme of the conferences was the notion of *feedback*, or circular causality. The engineers attending the conferences contributed the insight that mechanical systems containing feedback loops (such as a thermostat – see Section 4.2.3 below) often display behaviour that appears to be *purposeful*. The social scientists, on the other hand, were quick to realise that many phenomena in their field of study might also be described in terms of feedback loops. The Macy Conferences led to the establishment of an intellectual movement that “made feedback loops and other dynamic patterns a central subject of scientific investigation” (Capra, 1996, p. 42). Wiener (1949) coined the term *cybernetics* (from the Greek word for helmsman) to describe the newly-founded discipline (Wiener, 1949).

A common denominator of both general systems theory and cybernetics is that they do not “concentrate on basic building-blocks but rather on basic principles of organization” (Capra, 1996, p. 29). They also emphasise the fact that “all objects and events, and all experiences of them, are parts of larger wholes” (Blanchard & Fabrycky, 1990, p. 12) and that phenomena are most appropriately viewed, not as isolated entities, but as “networks of relationships, embedded in larger networks” (Capra, 1996, p. 37). This systemic way of thinking represents a radical departure from reductionism, which views the world as a collection of *objects* rather than a network of relationships, and proceeds by “taking something apart in order to understand it” (Capra, 1996, p. 29). The systems thinker insists that “the first movement of understanding ... has to be outward, to grasp what is happening in the context” (Midgley, 2001, p. 68).

Numerous other thinkers in various parts of the world have contributed to the shaping of systems theory, including the Russian Alexander Bogdanov (Mikes, 1997), the Hungarian Andras Angyal (1941) and the South African statesman Jan Smuts (1926). In the later decades of the twentieth century, scientists from various disciplines built on the conceptual foundations laid by these visionary thinkers. Although the reductionist paradigm has not been completely displaced (see, for example, Dawkins, 1976), “many phenomena of interest to biologists (e.g., the immune system), ecologists (e.g., predator-prey relations), chemists (e.g., autocatalytic reactions), physicists (e.g., lasers), cosmologists (e.g., galactic evolution), epidemiologists (e.g., the spread of viruses), and economists (e.g., economic cycles) are viewed today as multidimensional systems that have certain general features in common” (Vallacher & Nowak, 1994a, p. 9). The Pythagorean vision of the world, which had fallen into disrepute for so long, has finally re-entered the mainstream of intellectual life.

#### 4.1.2 Maps and territories

As the foregoing narrative shows, systems thinking had diverse origins. It was pointed out in Section 2.2.2 that the scientists who were instrumental in shaping systems theory also brought with them contrasting philosophical convictions regarding the nature of theory and its relation to reality. For some (e.g., Prigogine & Stengers, 1984; Vallacher & Nowak, 1994b),

the aim of systems theory is to discover *universal organising principles*, and the best way of achieving this aim is through abstract modelling of hypothetical, ideal systems. Others (such as Maturana & Varela, 1980; and Von Foerster, 1992) point out that the process of discovery is itself a systemic phenomenon – a feedback loop involving the observer and that which is being observed. According to this view, it is misleading to talk of “discovering” universal organising principles, because any item of knowledge depends as much on the attributes of the knower as on the characteristics of the phenomena being investigated. The question “What does the world *really* look like?” can therefore never be answered with certainty – is in fact not a meaningful question at all.

The latter argument found what is perhaps its clearest expression in the phrase coined by Alfred Korzybski: “*The map is not the territory*” (Korzybski, 1958). This phrase “reminds us that ... in all thought or perception or communication about perception, there is a transformation, a coding, between the report and the thing reported...” (Bateson, 1979, p. 37). This is true in a very general sense, as “All description, explanation, or representation is necessarily in some sense a mapping of derivatives from the phenomena to be described onto some surface or matrix or system of coordinates” (Bateson, 1979, p. 58). It also reminds us that, in any description, explanation or representation, *something always gets lost*. A map is inevitably a *simplified* rendition of a landscape. In fact, this is precisely where its strength lies: a map that depicts every detail of a given territory would have to be just as large as that territory – and such a map would not be of any use.

Another meaning implicit in Korzybski’s phrase is that it is possible to compile *more than one* valid description, explanation or representation of any phenomenon. Because map-making involves simplification, you and I might select different aspects of the territory to capture on the map. Thus, even though both our maps might be accurate representations of the same territory, they might bear little resemblance to each other. Consider, for example, the two descriptions of the thermostat offered above. Even though they were used to exemplify the contrast between reductionist and systems thinking, both are valid and correct. The error of reductionism lies not in the fact that it describes phenomena by enumerating its component parts (as the first description does), but in its assumption that this type of description is *sufficient* to capture all relevant attributes of a phenomenon.

Bateson (1979) took this argument a step further by suggesting that it is not only *possible* to compile contrasting descriptions of the same phenomenon, but that it is often *necessary* to do so. By superimposing or setting two maps of the same territory side by side, and by noting the similarities and differences between them, one might gain insights into the territory that would not have been accessible otherwise. He used the phenomenon of *binocular vision* as an example. Because one’s eyes are set some centimetres apart, parallax effects create many small differences in the images that impinge on each retina. The optical centres of the brain combine these two images – and the *differences* between them are used to infer information about depth. The combination of the pair of two-dimensional images literally adds an extra dimension to visual experience (see Figure 4.3 below). Bateson suggested that analogous methods of “double description” represent a powerful set of tools for scientific investigation. By approaching a problem from two different angles – perhaps by employing a combination of qualitative and quantitative data, of rigorous and imaginative thinking, of structural and functional analyses or of deductive and inductive reasoning – one may get further than one would have done by using only a single approach.

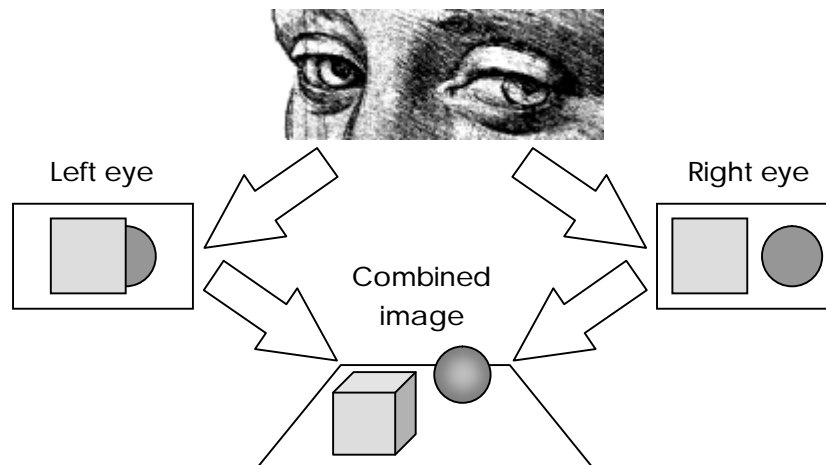


Figure 4.3 The principle of binocular vision

#### 4.1.3 What is a system?

Systems theory may therefore be regarded as a particular way of “mapping” the world – an approach that concentrates on contexts, patterns and relationships. Whether one believes that systems “really” exist in the world out there, or are simply convenient methods of visualising aspects of the world, depends on one’s philosophical predisposition – in particular, on whether one subscribes to an idealist or a constructivist notion of theory (see Section 2.2.2). Nevertheless, systems thinkers on both sides of the idealist/constructivist divide can agree on the attributes that a *description* should have to warrant the epithet “systemic.” For Capra (1996, p. 27), a disciple of constructivists Maturana and Varela (1980), describing an entity as a system means describing it as “an integrated whole whose essential properties arise from the relationships between its parts.” De Greene, (1991, p. 65), who draws heavily on the writings of constructivist Thomas Kuhn (1970), defines a system as an entity in which “interactions at a more microlevel generate structures with emergent new properties at a more macrolevel.”

Blanchard and Fabrycky (1990), on the other hand, seem to adopt a much more concrete view of systems. For argue, for instance, that one can distinguish between natural systems (such as river systems) and man-made systems (such as production systems). (A constructivist would retort that all systems are man-made, as they exist only in the human mind.) However, their definition of a system closely resembles those of Capra and De Greene: they define a system as “an assemblage or combination of elements or parts forming a complex or unitary whole” (Blanchard & Fabrycky, 1990, p. 1) where “the set of components comprising a system always has some characteristic or behavior pattern that cannot be exhibited by any of its subsets. A system is more than the sum of its component parts” (Blanchard & Fabrycky, 1990, p. 2).

In the light of these definitions, it is clear that the second description of the thermostat offered above fits the definition of a *systemic description*. It identifies three interacting elements:

- ▼ A temperature-sensitive switch;

- ✓ A heater element; and
- ✓ The power supply to the heater.

The properties of the system as a whole (in particular, the fact that it regulates ambient temperature) depend on the *interaction* between these elements. If they were separated from one another, the phenomenon of temperature regulation would not longer be present.

The example of the thermostat also indicates that the components of a system may be systems in their own right. For instance, the metal constituting the heater element is made up of atoms, and the properties of the metal (for instance, its ability to conduct electricity) depend on the interaction among these atoms. Elements of a system may therefore be regarded as *subsystems* comprising their own interacting elements. A system as a whole may also be an element in a still larger system – a *supra-system*. The thermostat and the heater, for instance, form part of the electrical system of the house, which in turn may form part of the municipal electricity reticulation system.

A great many entities in the world can be mapped onto this hierarchy of subsystems, systems and supra-systems. A human being, for instance, may be described as a biological system with organs as its subsystems. The components of these subsystems – tissues – are systems in their own right, as they consist of interacting cells. A human being, in turn, is part of a larger social or ecological system. An abstract rendition of this hierarchy is depicted in the figure below.

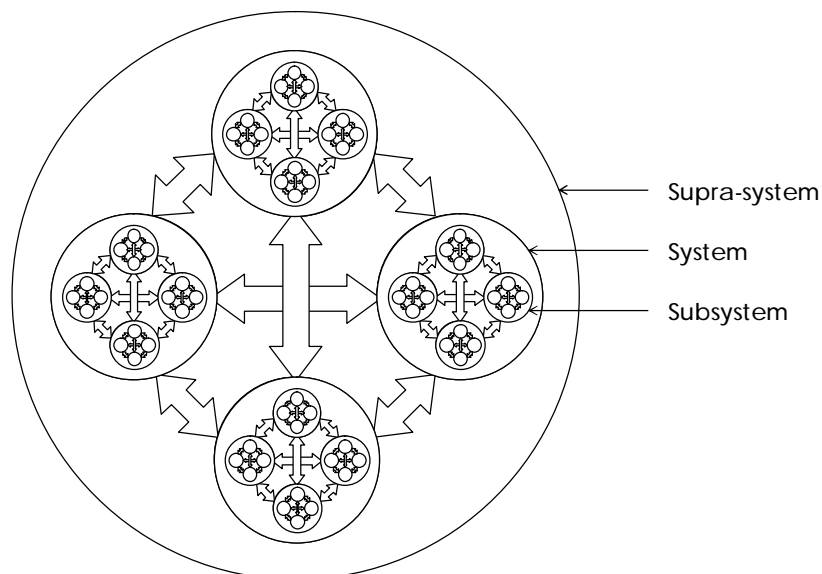


Figure 4.4 Subsystems, systems and supra-systems

## 4.2 SYSTEMS AND VARIABLES

Another characteristic of systemic description is that it often involves the definition of *variables* to denote alternative states that a system (or its components) might assume (Bateson, 2000; Nowak & Lewenstein, 1994). Changes in these variables therefore trace the dynamics of the system. Consider, for example, Description 2 of the thermostat. This description implicitly defines three variables:



- ✓ The state of the *switch* (a nominal variable that can assume two values: “open” and “closed”);
- ✓ The state of the *heater* (another nominal variable with two values: “on” and “off”); and
- ✓ The *temperature* of the room (a numeric variable that can range over a continuum of values).

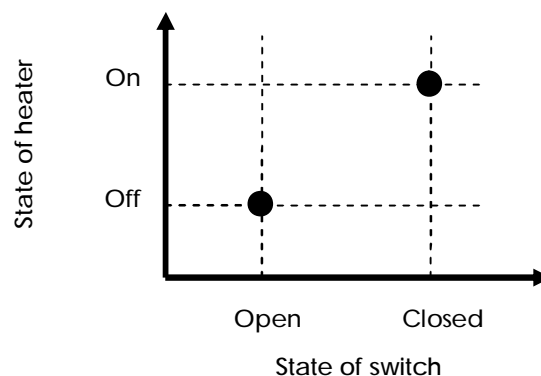
Just as it is possible to compile different descriptions of the same phenomena, so variables denoting the state of a system can be defined in different ways. The variable “State of the heater,” for instance, could have been replaced with a variable “Power output of heater” with two possible values – say, zero and 500 Watts. One could also define a *dichotomous variable* “temperature gradient” (with values “temperature is rising” and “temperature is falling”) to replace the numeric variable reflecting the temperature of the room.

### 4.2.1 Relationships among variables

Variables denoting the state of a system do not, of course, exist in isolation. If the value of one of these variables changes, this very often brings about a change in one or more other variables. (If the state of the switch changes from “open” to “closed,” for instance, the state of the heater will change from “off” to “on”.) Such interdependencies among variables can be defined in terms of logical or mathematical functions. These functions can be very simple or very complex, depending on the nature of the system and the manner in which the variables were defined. In the case of the thermostat switch and the heater, the relationship between the two relevant variables is a simple “If-then” function:

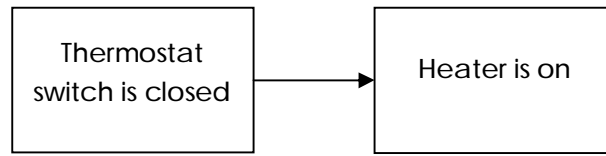
*IF state of switch = “closed” THEN state of heater = “on” ELSE state of heater = “off.”*

Such a relationship can be depicted in various ways. The figure below, for instance, plots this relationship on a Cartesian axial system.



**Figure 4.5** A possible rendition of the relationship between two variables

A simpler rendition of the same relationship is depicted in Figure 4.6 below. The arrow in the figure indicates that the condition “heater is on” depends on the condition “switch is closed” – the proposition “the heater is on” will be true if and only if the proposition “the switch is closed” is also true.



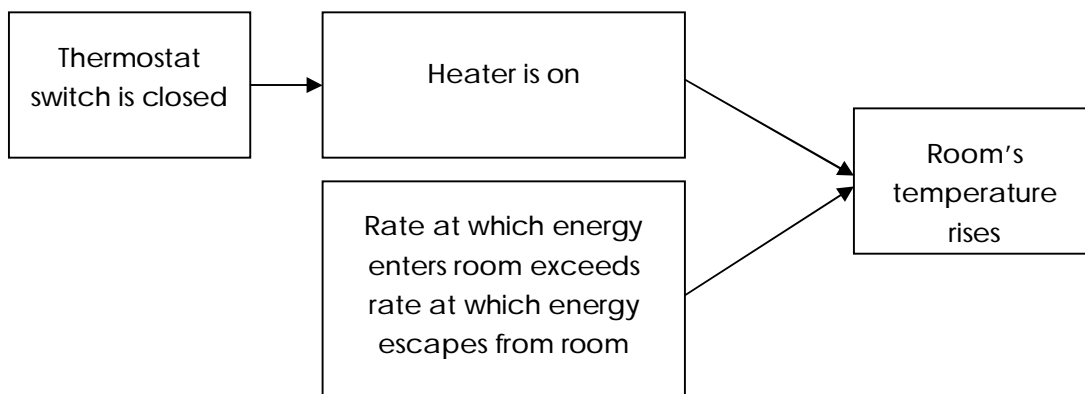
**Figure 4.6 Another possible rendition of the relationship between two variables**

A similar relationship exists between the state of the heater and the temperature gradient: if the heater is on, the temperature rises; if the heater is off, the temperature decreases. The relationship between the state of the heater and the *numeric* variable “Temperature,” on the other hand, is somewhat more complex. If the heater is on, the value of this variable will gradually increase. However, this increase will not be linear: the warmer it becomes in the room, the more heat will escape to the outside. Hence, temperature will increase asymptotically to a point where the rate at which heat escapes from the room equals the rate at which thermal energy is being pumped *into* the room by the heater (assuming that the thermostat does not switch the heater off before then). If the heater is off, however, temperature will *decrease* asymptotically, this time until the interior and exterior of the room are in thermal equilibrium.

In many cases, the truth of a particular proposition about a system depends on more than one variable. As was indicated above, for example, the truth of the statement “Temperature is rising” does not depend only on whether the heater is on; it also depends on whether the rate at which the heater warms the room exceeds the rate at which heat escapes to the outside. This relationship can be summarised as follows:

*IF state of heater = “on” AND rate at which energy enters room exceeds rate at which energy escapes from room THEN temperature increases, ELSE temperature decreases*

The figure below graphically depicts this relationship. It also indicates that the state of the heater depends, in turn, on the state of the thermostat switch.

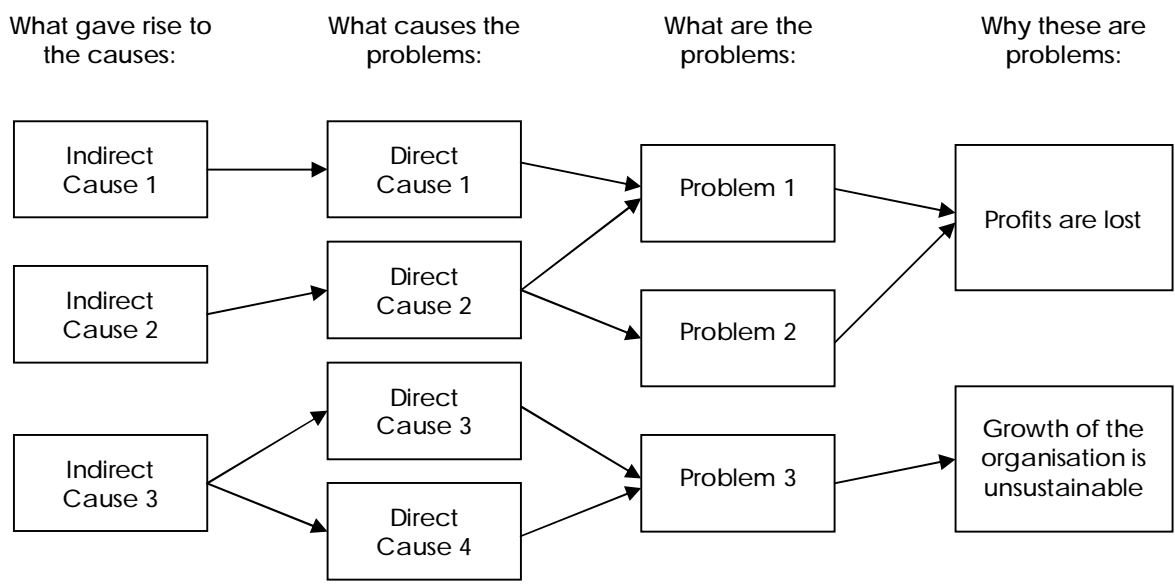


**Figure 4.7 Relationships among four variables**

### 4.2.2 “Reality trees”

Because of their shape, diagrams such as the one depicted in the figure above are sometimes referred to as “reality trees” (Goldratt, 1992; Mann & Stratton, 2000). Such trees present a powerful way of visualising complex systems without the aid of mathematics. They are also useful for analysing systems for which insufficient information is available to define numeric variables and mathematical functions to describe its dynamics. Because of these virtues, reality trees are sometimes used to analyse complex socio-technical systems such as production processes and organisations (Dettmer, 1997).

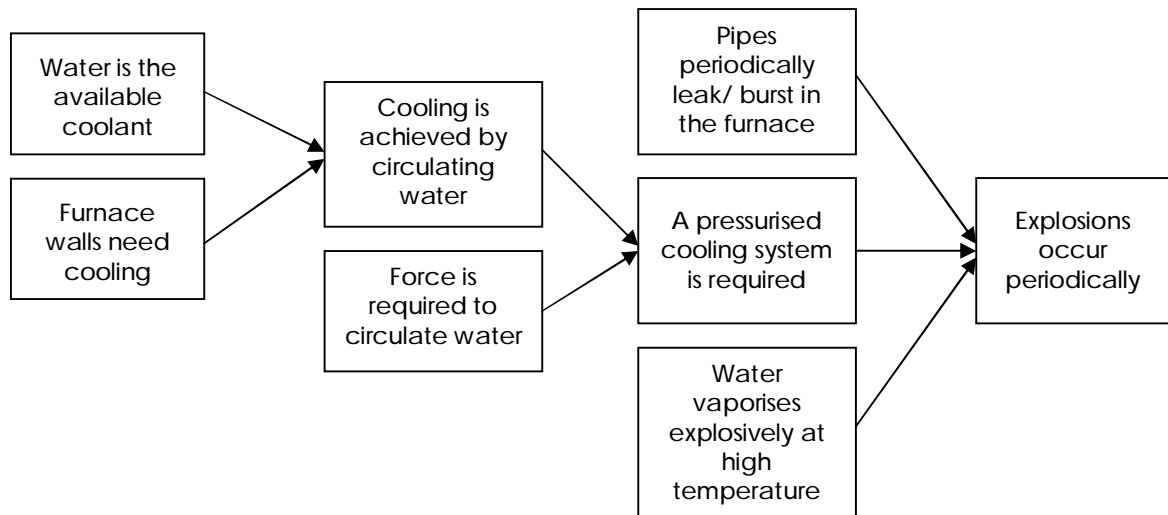
In process or organisational analysis, reality trees can serve two purposes: they can depict *problems* afflicting a system (in which case the tree is sometimes referred to as a “current reality tree”) or to depict the desired *future state* of the system (in which case they may be called “future reality trees”). Such analyses can be used to design appropriate interventions to address an organisation’s problems – in other words, to transform its current reality tree into the envisaged future reality tree (Mann & Stratton, 2000). The process of constructing a current reality tree and that of constructing a future reality tree employ similar procedures. In the case of a current reality tree, staff and managers of the organisation may be asked to identify what they regard as problems in the organisation or process. They are also requested to determine *why* each particular situation or state of affairs is problematical – in other words, which necessary conditions for the success or survival of the business are threatened by it. In addition, the direct and indirect *causes* of the various problems are identified. The figure below depicts a generic example of a current reality tree.



**Figure 4.8 A hypothetical example of a “current reality tree”**

The figure below (adapted from Mann & Stratton, 2000) depicts a more concrete example of a current reality tree. The tree in this example depicts problems related to a furnace cooling system. As the figure indicates, periodic explosions in the cooling system result from the combination of three factors: the fact that pipes sometimes leak or burst, the fact that a

pressurised cooling system is required, and the fact that water vaporises explosively at high temperature. If any of these three conditions were absent, explosions would not be a problem. The tree also identifies *why* a pressurised cooling system is required (namely, because cooling must be achieved by circulating water, and because the only way of circulating water is by applying force). Although this tree does not trace the effect of the problem to its eventual impact on business success or survival, it would not be difficult, in principle, to extend the model in that direction.



**Figure 4.9 A current reality tree for problems in furnace cooling**

When constructing a *future* reality tree, on the other hand, members of the organisation may be asked to identify propositions describing *desired* characteristics of the organisation or process. They are also requested to state *why* these characteristics are desirable – in other words, how they would contribute to the organisations’ success or survival. They might then be asked to determine the necessary conditions for realising these desired characteristics, the means required to fulfil these conditions, and so on. A generic example of a future reality tree is depicted in the figure below. Current and future reality trees feature again in Sections 6.2 and 6.3, where they are employed to represent systemic models of the functions of public participation and the problems that frequently afflict public participation processes.

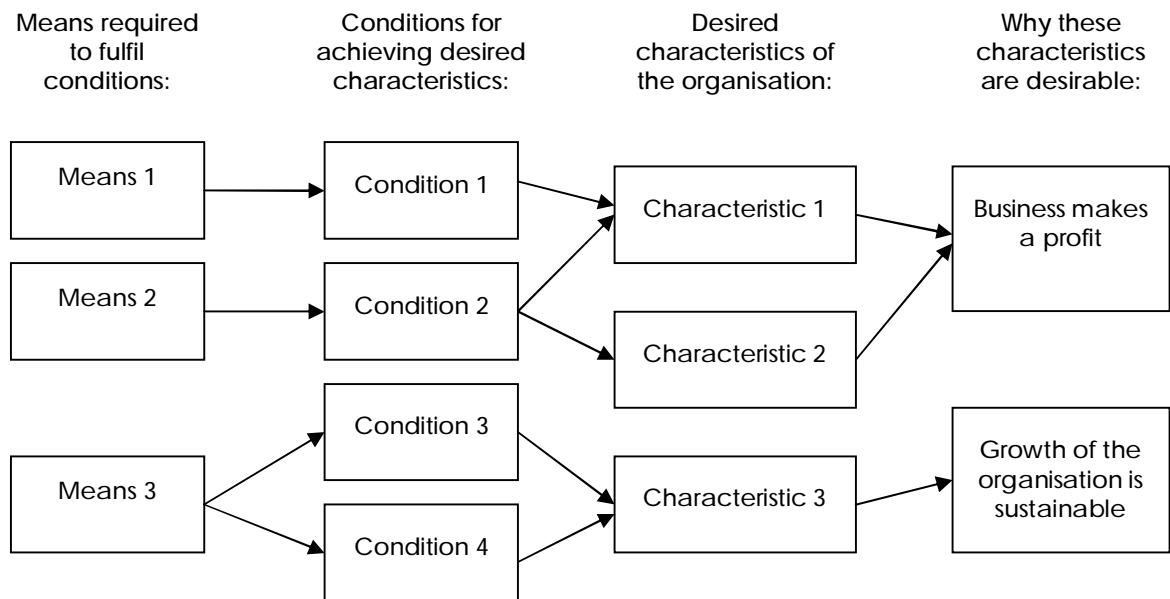


Figure 4.10 A hypothetical example of a “future reality tree”

### 4.2.3 Feedback loops

As the preceding discussion indicates, reality trees are useful tools for analysing cause-and-effect chains in a variety of systems. However, not all systems are amenable to such analysis. A heater-thermostat is one of the exceptions. What sets a thermostat system apart from, say, the problems of the cooling system depicted in Figure 4.9 is the fact that, in this system, it is impossible to separate causes from effects. If the switch closes, the heater turns on. The heater, in turn, increases the temperature of the room. But, because the thermostat switch is temperature-sensitive, a sufficient increase in temperature will cause the switch to open again. A change in temperature is therefore both a cause and a consequence of a change in the state of the switch. The chain of cause-and-effect in this system does not branch to form a tree; it closes in on itself to form a circle. In technical terms, if two or more variable describing the state of a system are related to one another in such a way as to form a circle, the system is said to contain a *feedback loop* (Wiener, 1949).

#### a) Negative feedback loops

There are two basic varieties of feedback loops: *positive* feedback loops and *negative* feedback loops. A positive feedback loop is a *self-amplifying* circuit of cause-and-effect, while a negative feedback loop is a *self-correcting* circuit. A thermostat system is therefore an example of a negative feedback loop, because it serves to counteract large fluctuations in temperature. Another mechanical example of a negative feedback loop is afforded by a device known as a *governor*. The first governors were constructed in the early nineteenth century, and their purpose was to keep steam locomotives running at a constant velocity despite changes in load or in the slope of the track (Bateson, 1979). A typical governor consists of a flywheel such as the one depicted in the figure below. The angular velocity of the flywheel is determined by the speed at which the locomotive’s engine is

running. If the engine speeds up, centrifugal force drives the arms of the flywheel apart, thereby partially obstructing the channel through which the engine receives its supply of steam. If the engine slows down, so does the flywheel. Its arms then converge again, opening the channel and increasing the engine's energy supply. As with the thermostat, the functional relationships between the parts of the engine-governor system are *circular*: the speed of the engine determines the rotation of the flywheel, which changes the energy supply to the engine – which, in turn, determines the speed of the engine.

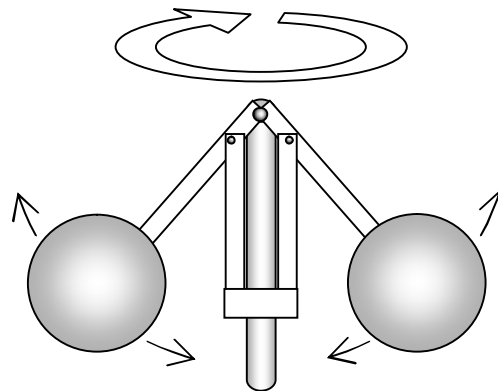


Figure 4.11 A governor

The figure below depicts the formal similarity between a heater-thermostat system and a steam engine-governor system. This figure is a good illustration of the fact that systems may sometimes embody the same abstract principles, even though little resemblance between them is evident on a physical level. In these figures, a "+" sign denotes a positive correlation between two variables, while a "-" sign denotes a negative correlation. In other words, an increase in the steam supply causes an increase in the speed of the locomotive; inversely, a reduction in steam causes the locomotive to slow down again. The relationship between the angle of the flywheel's arms and the fuel supply is exactly the opposite, however: an increase in the angle *reduces* the supply of steam.

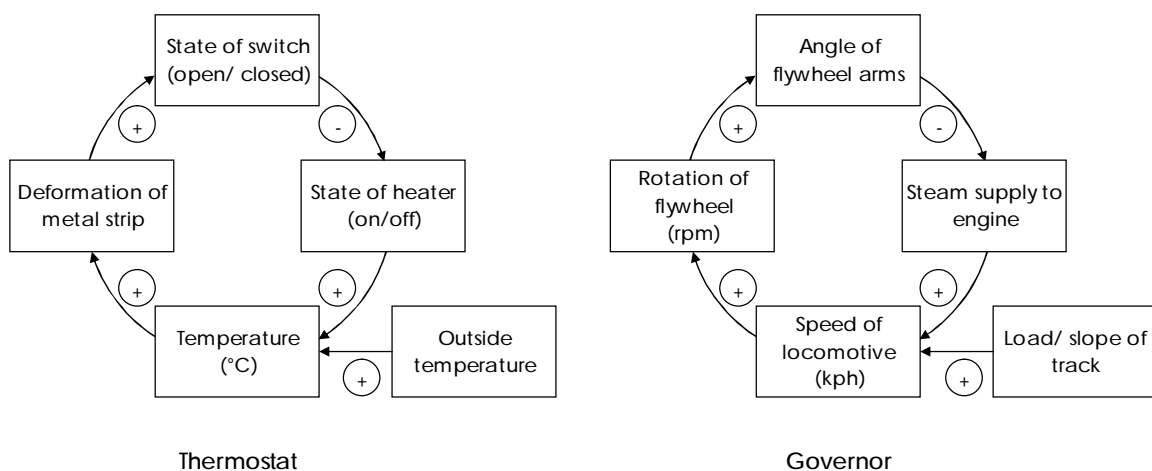


Figure 4.12 Two systems containing negative feedback loops



There are numerous non-mechanical examples of negative feedback loops, a few of which are briefly mentioned below:

- ✓ *The act of balancing* is probably the most familiar example of a negative feedback loop. Consider a tightrope walker: whenever she feels herself beginning to topple towards the right, she adjusts her position so as to shift her centre of gravity slightly to the left. If she overbalances towards the left, she shifts her centre of gravity slightly to the right again, thus maintaining her position on the wire by countering each deviation from a vertical position with a slight correction in the opposite direction. Just like the thermostat counteracts the influence of variations in external temperature, the motions of the tightrope walker neutralises the effects of air currents, tiny vibrations in the wire and other factors that might unbalance her.
- ✓ *Homeostasis*. Negative feedback loops play an important part in maintaining the stability of various biological and ecological systems (Bateson, 1979). The metabolisms of living organisms, for instance, contain numerous feedback loops that keep body temperature, blood pressure and several other important physiological variables in dynamic balance despite considerable fluctuations in external conditions – a phenomenon known as *homeostasis*.
- ✓ *Predator-prey dynamics*. Imagine a hypothetical ecosystem containing two species, one of which feeds on the other. If the numbers of the prey species increase, the abundance of food leads to an increase in the numbers of the predator species. However, the more predators are about, the more the prey species will be hunted. If the prey population collapses from overkill, the resultant shortage of food will also deplete the numbers of the predator species. With fewer predators around, the prey species can multiply again with relatively little interference. Thus, the numbers of the two populations may oscillate over time (Vallacher & Nowak, 1994b).

#### b) *Positive feedback loops*

It was mentioned above that, whereas a negative feedback loop involves a self-correcting circuit, a positive feedback loop is self-amplifying. To understand how a positive feedback loop might be created, consider the following thought experiment proposed by Bateson (1979, p. 116). He invites the reader to contemplate a locomotive in which the governor is connected to the steam supply “in a way no engineer would approve, namely, so that the more the arms of the governor diverge, the more the fuel. So rigged, the machine will go into a *runaway*, operating exponentially faster and faster, until either some part breaks or perhaps the fuel duct can deliver fuel at no greater rate.”

The negative feedback loop embodied in the thermostat system could also be turned into a positive feedback loop. This would involve changing the connection between thermostat and heater so that an increase in temperature switches the heater *on*, not off. The result would be, not a fluctuation of temperature within a given range, but a steady increase in temperature.

A few more examples of positive feedback loops are listed below:

- ✓ *An armaments race*. If Nation A sees Nation B stockpiling weapons and perceives this as a threat to national security, it will probably respond by increasing its own arsenal. If B now learns that A is producing more weapons, and also perceives this as

a threat, it will be likely to stockpile even more weapons, thus increasing even further the threat perceived by B – and so on.

- ✓ *The “bandwagon effect.”* This term refers to “the tendency of a cause to gain support simply because of its growing number of adherents” (Capra, 1996, p. 62). Thus, the greater the number of people supporting the cause, the greater the rate at which people join the cause – which, in turn, increases its number of supporters.
- ✓ *The relationship between motivation and achievement.* It might be that more motivated students tend to perform better, but that academic success also tends to increase their motivation, leading to still more success, and so on. This process may also work in the opposite direction, creating what is commonly known as a “vicious circle”: poor motivation may lead to poor achievement, which causes students to become even less motivated and therefore to perform even worse, and so on. Even though the direction of the process has been reversed, it is still self-amplifying, and is therefore still a *positive* feedback loop. The two figures below depict the variables involved in this feedback loop and the contrast between the two scenarios that might unfold as a result of the interaction between the two variables.

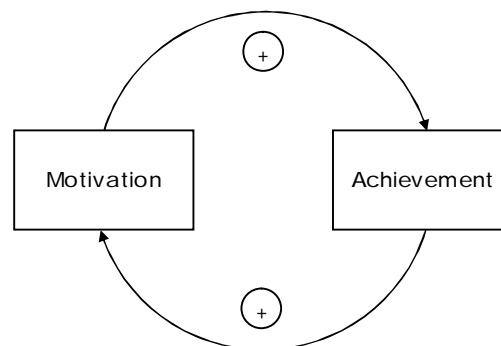
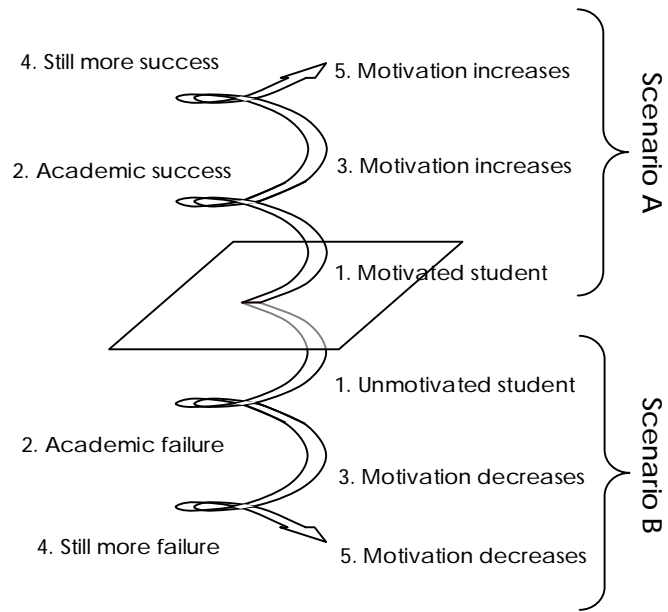


Figure 4.13 A positive feedback loop involving achievement and motivation



**Figure 4.14 Two possible outcomes of a positive feedback loop involving achievement and motivation**

### 4.3 LEVELS AND HIERARCHIES IN SYSTEMS

This section takes up four themes that were introduced in the previous two sections, namely:

- ✓ The notion that it is possible to compile *more than one valid description* of a phenomenon;
- ✓ That a system displays *emergent properties* not displayed by its component parts;
- ✓ That the dynamics of a system or its components can be described by defining numeric or nominal *variables* and mathematical or logical *functions* by which the values of those variables are related to one another; and
- ✓ That the relationships among such variables may sometimes form closed cycles, or *feedback loops*.

The first sub-section below takes up the second and fourth themes listed above; it explores the manner in which *feedback loops* can give rise to *emergent properties*. The second sub-section elaborates on the third theme by exploring the types of relationships that might exist among variables and showing that differences in such relationships allow for variables to be classified in a *hierarchy*. Finally, the third sub-section draws together the first and third themes by showing that alternative *descriptions* can often be arranged in a hierarchy, and that this hierarchy is related to the *hierarchy of variables* characterising the system.

#### 4.3.1 Emergent properties and feedback loops

In this study, the term “emergent properties” was first introduced in Chapter 1, where it was defined as properties of a system that are not displayed by its component parts. It was noted, for instance, that *life* is an emergent property of certain systems of interacting

molecules, since the molecules themselves are not alive. Capra (1996, p. 28) offers a few more examples of emergent properties: “the concept of temperature, which is central to thermodynamics, is meaningless at the level of individual atoms where the laws of quantum theory operate. Similarly, the taste of sugar is not present in the carbon, hydrogen, and oxygen atoms that constitute its components.” In Section 4.1.3 above, it was pointed out that emergent properties derive from the interaction between a system’s components, not from the sum of their individual attributes.

Lorenz (1996) offers yet another example of an emergent property, this time with regard to the behaviour of electronic components in a circuit. His example is presented in the figures below. The top left-hand figure depicts a circuit containing a capacitor and a resistor connected in series, while the top right-hand figure depicts the resultant voltage over the capacitor as a function of time. The middle left-hand figure depicts another type of component – an inductor – in series with the same resistor, while the middle right-hand figure depicts the voltage over the inductor. The bottom left-hand figure shows all three components connected in series, while the bottom right-hand figure shows the voltage over the capacitor and inductor in such a circuit. As this figure shows, the voltage inscribed by a circuit containing a set of components *cannot be predicted by summing over the voltages inscribed by the components in isolation.*

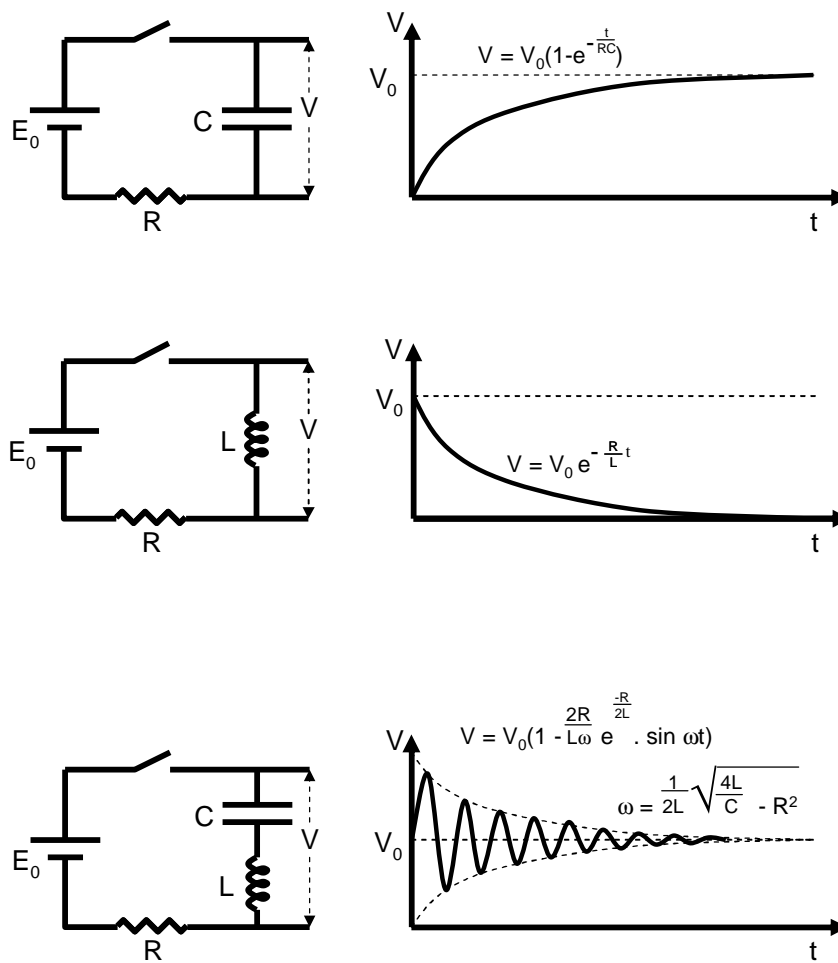


Figure 4.15 Emergent properties in the behaviour of an electronic circuit

All of these definitions and examples leave something to be desired, however: they do not explain *how* the interaction between a system's components can give rise to emergent properties. The discussion of *feedback loops* offered in Section 4.2.3 above paves the way for a more detailed exploration of emergent properties and their origins. Once again, the example of the heater-thermostat system provides an appropriate starting-point for such exploration.

It was mentioned earlier that *the ability to regulate a room's temperature* is an emergent property of such a system, since this attribute is not possessed by any of its parts; neither the switch nor the heater nor the heater's power supply would be able to regulate temperature if they were not connected to one another in a specific way. This argument implicitly defines a single *variable* to describe the overall behaviour of the heater-thermostat system – a variable with two possible values: “regulates temperature” and “does not regulate temperature.” It is possible, however, to analyse the behaviour of the system in much more detail. One way of doing so is by plotting a graph depicting changes in temperature over time. The shape of this graph would be roughly sinusoidal, denoting oscillations in temperature as the heater switches on and off. These oscillations, in turn, would have a characteristic wavelength and amplitude.

The question now arises: what determines the wavelength and amplitude of temperature oscillations in a heater-thermostat system? One of the relevant factors is the *physical distance* between the heater and the temperature-sensitive switch of the thermostat. If this distance is large, it would take a long time for changes in temperature brought about by the heater to register with the thermostat. Consequently, the average temperature of the room will have increased by a significant amount before the thermostat turns the heater off again. It would also take a long time for news of the ensuing drop in temperature to reach the thermostat. It is therefore possible to relate two aspects of the overall behaviour of the system – the wavelength and amplitude of temperature oscillation – to an aspect of the relationship between its parts – namely, the distance between heater and thermostat switch.

The extracts below describe a similar instance of relating the overall properties of a system to the properties of its parts. This example, recounted by Bateson (1979), deals with the early history of steam engine governors. It is set in the nineteenth century, and its central character is the great English physicist James Clark Maxwell:

Some sort of governor was added to the early steam engine, but the engineers ran into difficulties. They came to Clark Maxwell with the complaint that they could not draw a blueprint for an engine with a governor. They had no theoretical base from which to predict how the machine that they had drawn would behave when built and running. ...

There were several possible sorts of behaviour: Some machines went into runaway, exponentially maximising their speed until they broke or slowing down until they stopped. Others oscillated and seemed unable to settle to any mean. Others – still worse – embarked on a sequence of behaviour in which the amplitude of their oscillation would itself oscillate or would become greater and greater. Maxwell examined the problem. He wrote out formal equations for relations between the variables at each successive step around the circuit. He found, as the engineers had found, that combining this set of

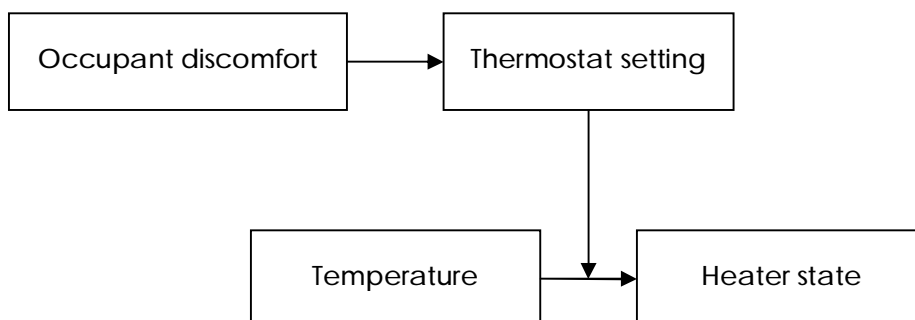
equations would not solve the problem. Finally, he found that the engineers were at fault in not considering *time*. Every given system embodied relations to time, that is, was characterized by time constants determined by the given *whole*. These constants were not determined by the equations of relationship between successive parts but were *emergent* properties of the system...

The question which the engineers brought to Maxwell was about the circuit as a whole: How can we plan it to achieve a steady state. They expected the answer to be in terms of relations between the individual variables. What was needed and supplied by Maxwell was an answer in terms of the time constant of the total circuit. This was the bridge between the two levels of discourse. (pp. 118-120)

### 4.3.2 Logical types

As the previous section indicates, the dynamics of a heater-thermostat system depends on a number of factors, including the type of connections among its elements and the physical distance between the heater and the thermostat sensor. Another factor that influences its dynamics is the *thermostat setting* – in other words, the “critical temperature” at which the heater is switched on or off. In most thermostats, this setting can be manually adjusted. Hence, it can be included in the description of the system as a *variable*. Changes in the value of this variable may occur if the occupant of the room feels uncomfortably cold (or hot) and decides to increase (or lower) the thermostat setting.

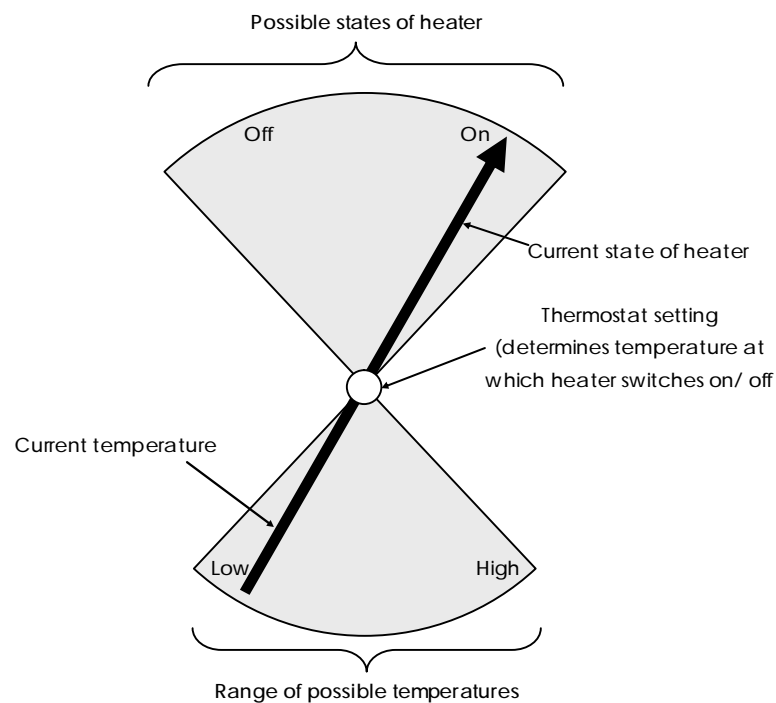
A difference can be discerned between the variables denoting the discomfort experienced by the room’s occupant and the thermostat setting, on the one hand, and the variables denoting the temperature and the state of the thermostat, on the other. A change in the level of comfort experienced by the occupant might lead him or her to adjust the thermostat setting. Likewise, a change in temperature may bring about a change in the state of the thermostat – but the thermostat setting determines the *specific temperature that will be required to precipitate this change*. In other words, a change the thermostat setting will bring about a change in the *parameters* determining changes in the state of the heater. The relationship between these variables is depicted in the figure below.



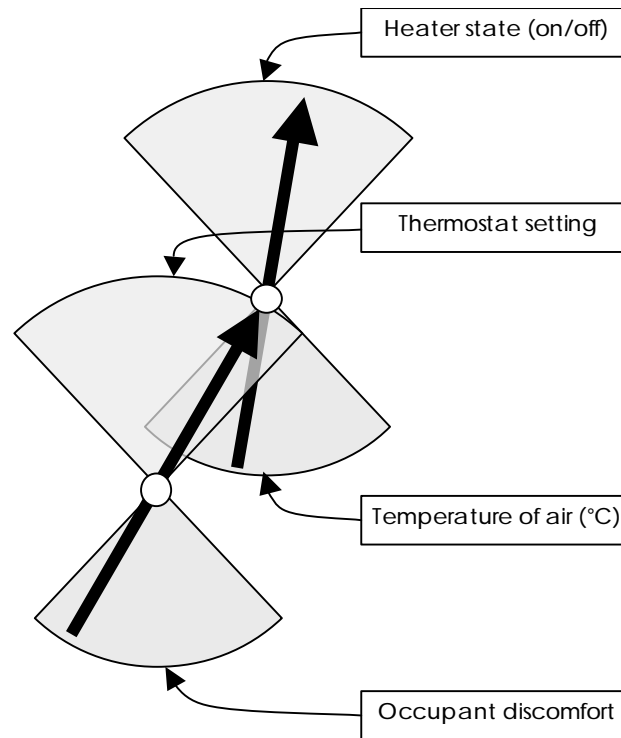
**Figure 4.16** The relationship between temperature, the state of the heater, the thermostat setting and occupant discomfort



The two figures below offer an alternative way of depicting the relationships between these variables. Figure 4.17 shows the relationship between temperature and the state of the heater: while temperature is low, the heater is switched on. If temperature increases sufficiently, however, the point of the arrow will move to the left, denoting the fact that the heater will be switched off. The “fulcrum” governing the relationship between these two variables is the thermostat setting: it determines what temperature is required to change the state of the heater. Figure 4.18 shows that the thermostat setting, in turn, is dependent on yet another variable: the degree of discomfort experienced by the room’s occupant.



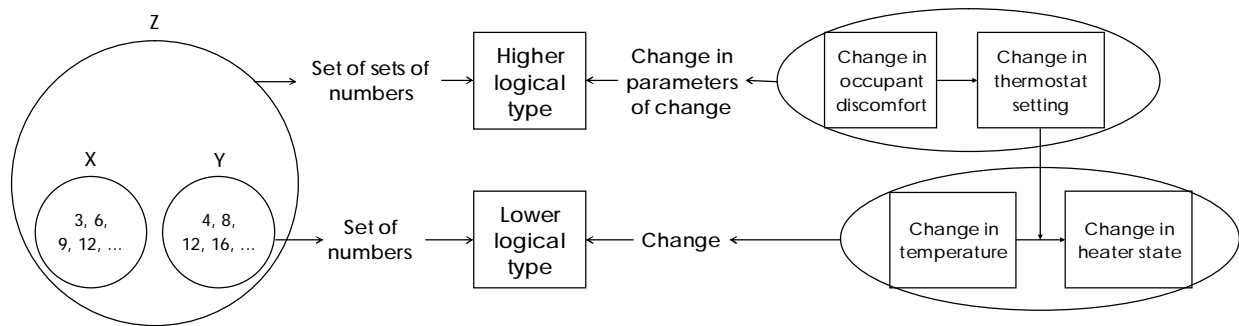
**Figure 4.17** An alternative view of the relationship between temperature, the state of the heater



**Figure 4.18 An alternative view of the relationship between temperature, the state of the heater, the thermostat setting and occupant discomfort**

The four variables in the figure above can therefore be divided into two categories. The one category contains the variables “heater state” and “temperature,” while the other contains the variables “thermostat setting” and “occupant discomfort.” Bateson (1979) adopted the term *logical typing* to denote the difference between these two categories of variables. As was mentioned in Section 2.2.2, this term was originally employed in mathematics, by Alfred North Whitehead and Bertrand Russell (1910), to distinguish between different types of mathematical sets. Elementary set theory states that it is possible to define various sets of numbers or objects. However, it is also possible to define sets of sets. For example, if  $X$  were the set of all multiples of three and  $Y$  the set of all multiples of four, one could define another set (say,  $Z$ ) as a set whose elements are Set  $X$  and Set  $Y$ . Russell and Whitehead employed the term “logical type” to distinguish between sets such as  $X$  and  $Y$ , on the one hand, and sets such as  $Z$  on the other. According to their definition, Set  $Z$  belongs to a *higher logical type* than Sets  $X$  and  $Y$  because  $X$  and  $Y$  are sets of numbers, while  $Z$  is a set of sets of numbers.

Bateson broadened the meaning of term “logical type” to include not only “sets of sets” but also “changes in the parameters of change,” “messages about messages,” etc. Thus, according to Bateson’s definition of the term, the variables “occupant discomfort” and “thermostat setting” belong to a *higher logical type* than the variables “temperature” and “heater state” because a change in thermostat setting (resulting from an action triggered by a change in the occupant’s discomfort) alters the *manner in which the heater responds* to changes in temperature. This analogy between the mathematical and the expanded definition of logical typing is spelled out in the figure below.



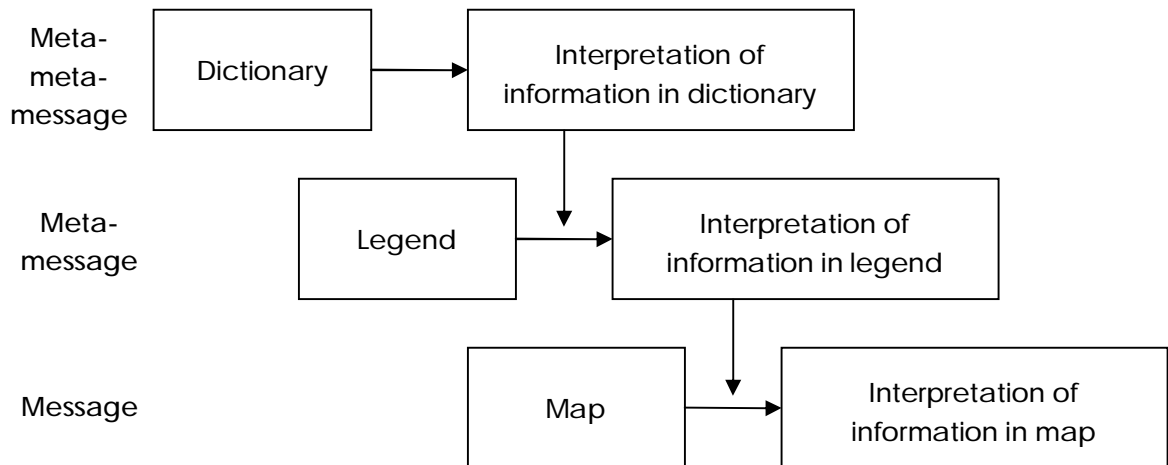
**Figure 4.19 Logical typing in a thermostat and in set theory**

Moving beyond the thermostat, it is possible to identify a great number of instances where processes or events can be distinguished in terms of their level of logical typing. Some of the clearest examples of such distinctions may be found in the realm of *communication*. Bateson (2000, p. 475) offers the following example: “the message ‘Let’s play chess’ is not a move in the game of chess. It is a message in a more abstract language than the language of the game on the board.” In other words, the message “Let’s play chess” (or, for that matter, any discourse about chess or about the rules of chess) belongs to a higher logical type than the types of messages players exchange by moving chess pieces on a board. In Bateson’s terminology, it is a *meta-message* in relation to the chess game.

Another example of logical typing can be devised by returning to the analogy of *maps and territories*. Every serious map is accompanied by a *legend*, the function of which is to explain the rules that were used to construct the map – its scale, the meanings of various symbols, etc. Consider the difference between the type of information contained in the legend and that contained in the map itself. While the map tells one something about a particular landscape, the legend tells one how the content of the map should be interpreted. While the map provides us with guidance with regard to a particular territory, the legend provides us with guidance when reading the map. Thus, the legend conveys information of a *higher logical type* than the map.

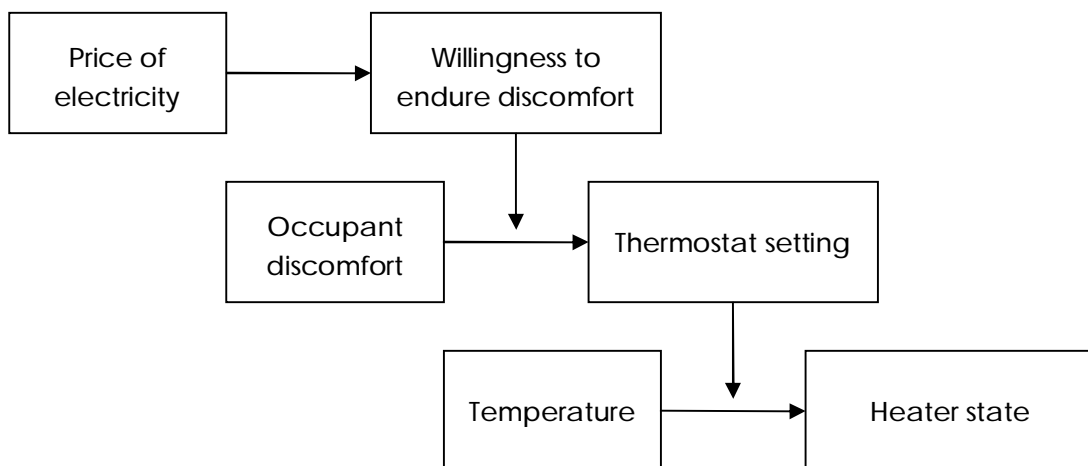
Russell and Whitehead recognised that there are not just two logical types, but a theoretically infinite hierarchy. One can construct sets of numbers, sets of sets, sets of sets of sets, and so on. It is also possible to identify hierarchies of logical types in many phenomena beyond the world of mathematics. Once again, the image of the map provides a simple example.

Consider the experience of being handed a map of which the legend is written in Chinese. If I do not understand Chinese, the map would only be useful to me if I also have access to an English-Chinese dictionary. The information conveyed by the dictionary would then belong to a higher logical type than the information conveyed by the legend, as it would “tell” me how to interpret the symbols in the legend. As the figure below indicates, the relationship between the dictionary and the legend is analogous to the relationship between the legend and the map. The dictionary is a *meta-message* to the legend, and thus a *meta-meta-message* to the map.



**Figure 4.20 Three levels of logical typing pertaining to a map**

It is also possible to identify a possible third level of logical typing in variables describing the *heater-thermostat system*. As was mentioned above, the thermostat setting determines the temperature at which the thermostat switches the heater on or off. The thermostat setting, in turn, depends on the occupant's level of discomfort. However, the level of discomfort at which the occupant decides to change the thermostat setting might depend on a number of variables, such as the cost of electricity. If electricity is expensive, he or she might be willing to endure a significant amount of discomfort before deciding to increase the setting. The three levels of variables involved in this scenario are depicted in the figure below.



**Figure 4.21 Three levels of logical typing pertaining to a heater-thermostat system**

### 4.3.3 Levels of description

The previous discussion showed that the variables describing a system can be arranged in a hierarchy of logical types, where variables occupying higher positions in the hierarchy denote the relationships among variables at lower levels. This was not the first time that the notion of a hierarchy of levels appeared in this study, however. In Chapter 1, it was argued that the various sciences can be arranged in a hierarchy according to the scale and level of abstraction of their subject matter. This hierarchical classification of sciences arises from the fact that the world can be *described and analysed at various levels*. As Capra (1996, p. 35) put it, the world consists of “networks within networks. At each scale, under closer scrutiny, the nodes of the network reveal themselves as smaller networks.”

But what is the relationship between (a) a hierarchy of *levels of description* and (b) a hierarchy of *logical types*? The aim of the following section is to answer this question. The centrepiece of the discussion below is the familiar example of the heater-thermostat system, and the discussion is structured around the *stepwise addition of elements* to construct such a system.

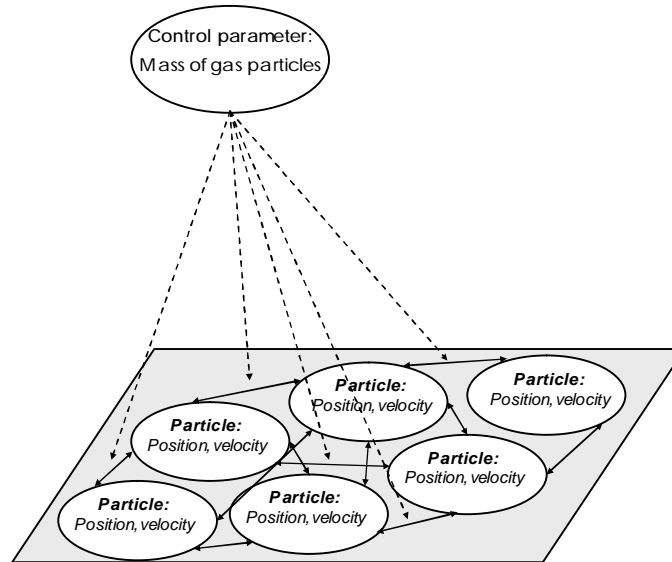
#### a) *Levels of description in a heater-thermostat system*

Consider, as a first step toward the construction of a heater-thermostat system, a room *without* a heater or thermostat – in other words, a room filled with nothing but air. In order to find anything of interest to a systems theorist in such a room, one would have to view it at a sub-microscopic level – that is, at a resolution fine enough to discern the individual molecules of which the air in the room is constituted. Viewed at this level, the air in the room would appear as an extremely complex system, the dynamics of which consists of the continuous motion and collisions of air molecules.

A description of such a system would require an extremely large number of variables. To be more precise, it would require six variables for each molecule – three to describe its position in three-dimensional space and three to describe the speed and direction of its movement (Nowak & Lewenstein, 1994). With these variables in hand, one could set up mathematical equations to describe the *changes* that occur in the velocity and position of a pair of molecules whenever they collide. What variables would have to be included in such equations? Obvious candidates include the respective positions and velocities of the two molecules *before* the collision, as these values determine the angle and speed at which they would collide. The inclusion of these variables is necessitated by the fact that the angle and intensity of the collision would determine the molecules’ velocity and position *after* the collision.

The equations would also have to include variables denoting the *mass* of the particles. These variables would appear in the equations as *constants* that determine the manner in which the two molecules influence one another’s position and velocity. (If a heavy molecule collides with a lighter one, for instance, the velocity of the former will be less affected than the velocity of the latter.) The relationship between the mass of the particles, their position and their velocity is analogous to the relationship between the setting of a thermostat, the temperature of the room and the state of the heater: just as the thermostat setting determines the interaction between temperature and the state of the heater, so the mass of air particles determines the interaction between their respective positions and velocities. In equations describing the motion of the particles, mass therefore occupies a

higher logical type than position and velocity. Variables that have a significant effect on the overall dynamics of a system without being affected by that dynamics are also often referred to as *control parameters* (Nowak & Lewenstein, 1994). The figure below depicts the relationship between the mass of the gas particles and their various positions and velocities.



**Figure 4.22 Mass as a control parameter mediating the collisions of molecules**

A description such as the one offered above is conceptually simple, but rarely achievable in practice for systems of macroscopic dimensions. An average room may contain in the order of  $10^{23}$  (a hundred thousand million million million) molecules, and assigning six variables to each molecule to describe its behaviour would yield a description of such complexity that it would surpass the abilities of even the most powerful computer. Fortunately, it turns out that the macroscopic properties of many systems can be adequately described by using a very much smaller set of variables. In the case of the system described above, one such variable is the average kinetic energy (or mass multiplied by the square of velocity) of the gas molecules. In everyday language, this average value is known as *temperature*. (A "warm" object is nothing other than an object composed of energetic, rapidly moving atoms and molecules.) Variables that reflect the macroscopic global characteristics of a system are often referred to as *order parameters* (Nowak & Lewenstein, 1994).

It is therefore possible to distinguish between three types of variables in the dynamic description of a system:

- ✓ *Dynamic variables*, or variables describing the state of a system at a given instant in time (such as the positions and velocities of all the molecules constituting the air in the room);
- ✓ *Control parameters*, or variables describing the relationships among dynamic variables (such as the mass of the air molecules); and



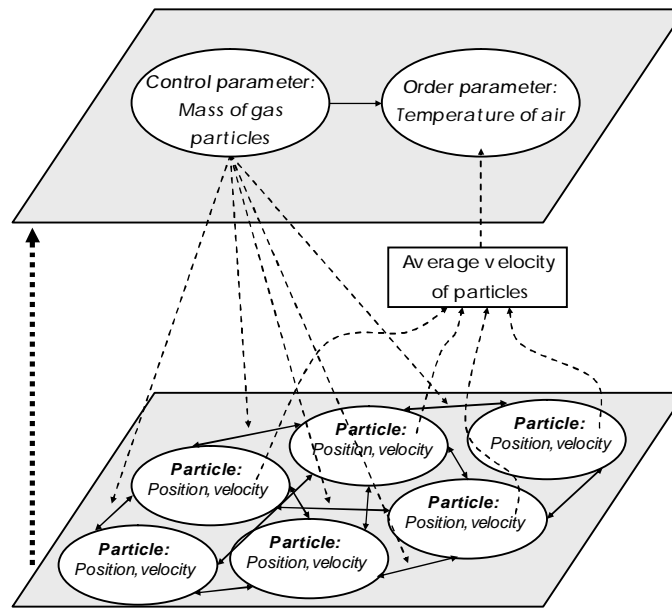
- ▼ *Order parameters*, which denote trends or patterns in the values assumed by dynamic variables (such as the temperature of the room, which denotes the average kinetic energy of the molecules).

Both control parameters and order parameters may be regarded as occupying a *higher position in the hierarchy of logical types* than the dynamic variables. They are also comparatively stable: if they do change over time, these changes occur at a much slower rate than changes in the dynamic variables.

Although control parameters and order parameters are relatively stable in comparison to dynamic variables, they are not completely static. Hence, it is possible to compile descriptions that focus on *changes* in the values of these parameters, and on the manner in which such changes are related to one another. For example, one might devise a mathematical formula that identifies the manner in which different variables influence the temperature of the air in the room. These variables would include the *density* of the air (which, in turn, depends on the mass of the air molecules and on the number of them present in the room).

In equations describing the relationships among parameters, control parameters normally emerge as *independent* variables and order parameters as *dependent* variables. For instance, if more air were to be pumped into the room, or if it were possible to increase the mass of air molecules, the density of the air would increase. This, in turn, would increase the average kinetic energy of the molecules. The rise in temperature merely *reflects* or *summarises* this change; it cannot be said to have *caused* it.

The foregoing discussion has paved the way for a more precise definition of levels of description than has been offered hitherto in this study. A system can be described in terms of the relationships among its dynamic variables (in this case, the positions and velocities of molecules constituting the air in the room) or in terms of the relationships among its control parameters and order parameters (in this case, between the mass of the air molecules and their average kinetic energy, or between pressure and temperature). The latter description belongs to a *higher level* than the former; it essentially treats the control parameters and order parameters as if they were dynamic variables (Scott, 2004). These two levels of description are depicted as parallel planes in the figure below. The upward arrow connecting the two planes denotes the fact that, while temperature (a variable at a higher level of description) is an emergent property of processes at the lower level, it does not have a reciprocal influence on these processes.



**Figure 4.23** Two levels of description pertaining to a set of molecules

It was mentioned above that this discussion would follow a progression whereby elements of a heater-thermostat system are added in a stepwise manner. Having employed the case of a room filled only with air to define the difference between dynamic variables, control parameters and order parameters, a second element will now be added to the system: the heater. This addition brings another variable into the description of the system – namely, a variable denoting the *state of the heater* (whether it is switched on or off). Like the density of the air molecules, this variable exerts an effect on the temperature of the air: if the heater is on, temperature tends to rise. The state of the heater is therefore appropriately regarded as an additional *control parameter* on the same level as the mass of the air molecules.

Note that it would be possible to add the heater at the lower level of description as well. Such an addition would necessitate increasing the number of dynamic variables to include, not only variables describing the behaviour of the air molecules, but also variables describing the behaviour of the molecules constituting the heater element, the electrical current flowing through this element, etc. This extra degree of complexity is foregone in the present discussion, however.

If one were to compile a mathematical equation to describe the relationship between the state of the heater and the temperature of the room, this equation would resemble those describing the behaviour of the individual gas particles in that it would contain certain *constants*. One of these constants would denote the *volume of the room*. (All other things being equal, a large room takes longer to heat up than a small one.) If the state of the heater and the temperature of the room were regarded as dynamic variables, the volume of the room would therefore feature as a *control parameter*; it mediates the relationship between these two variables, just as the mass of air particles mediates the relationship between the positions and velocities of these particles. The relationships among these variables are depicted in the figure below.

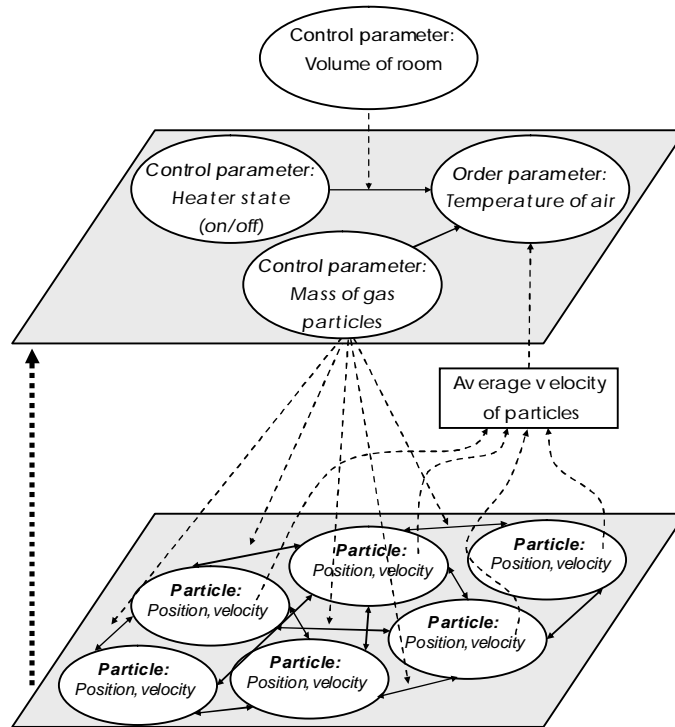


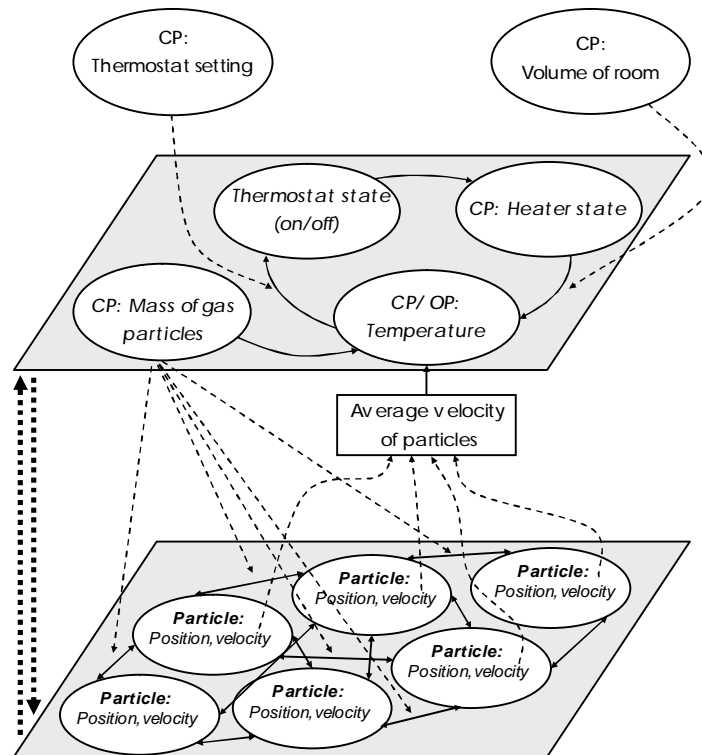
Figure 4.24 Variables describing a system containing a heater

Thus far, we have compiled two descriptions of the system under discussion. These two descriptions occupy contrasting *levels*, in that the control parameters and order parameters of the one description become the dynamic variables of the other description. The addition of the heater did not change the nature of the relationship between temperature and the other variables: changes in temperature still merely *describe* changes in the behaviour of air molecules; it does not *bring about* those changes.

The status of temperature as an order parameter can, however, be changed by adding yet another element to the system: the *thermostat switch*. As was mentioned earlier, this switch acts as a temperature sensor, and an appropriate change in temperature will cause the thermostat to switch the heater on or off. The feedback loop that is created through the addition of the thermostat allows the temperature to the room to exert an influence (albeit an indirect one) on the global dynamics of the molecules constituting the air in the room: because a change in temperature can now bring about a change in the state of the thermostat switch, it can thereby cause a change in the state of the heater. This, in turn, changes the amount of thermal energy being pumped into the room by the heater, and thus changes the average kinetic energy of its constituent molecules. Hence, the creation of the feedback loop may be regarded as having bestowed the status of a *control parameter* on the variable denoting temperature. Because the feedback loop establishes a pathway whereby temperature can influence the state of the heater, a change in temperature can now *bring about* a change in the behaviour of individual molecules instead of just *reflecting* this change.

The figure below depicts the change in the variable denoting temperature from order parameter to control parameter. In this figure, "OP" and "CP" are abbreviations for "order

parameter” and “control parameter,” respectively, while the downward arrow between the two levels of description denotes the reciprocal influence between the two levels. The figure also includes the thermostat setting alongside the volume of the room as a second-level control parameter, as this setting mediates the relationship between temperature and the state of the thermostat switch.



**Figure 4.25 A feedback loop between temperature and the state of the heater**

It is now possible to construct a *third level of description* of the heater-thermostat system. This description would necessitate the addition of an order parameter at the same level as the thermostat setting and the temperature of the room. A prime candidate for such an order parameter is the *average temperature* of the room – in other words, the value about which the temperature fluctuates under the regulation of the thermostat. This average value stands in the same relationship to temperature as temperature stands to the kinetic energy of individual molecules. Taken together, these three variables therefore form a *hierarchy of logical types*. As the figure below shows, this third-level description would include propositions regarding the relationship between thermostat setting and average temperature – that is, propositions indicating that a change in the thermostat setting would induce a change in the average value about which temperature fluctuates.

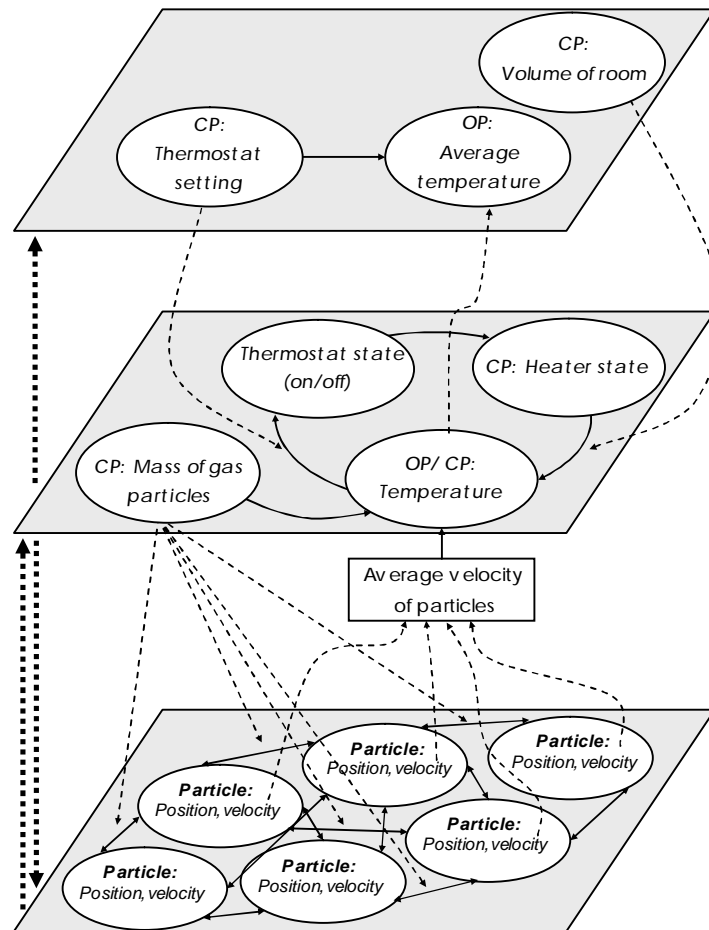


Figure 4.26 Three levels of description of a heater-thermostat system

The final element to be added to the system is its *human occupant*. This addition brings about the same change in the third-level description as the addition of the thermostat switch made to the second-level description: it creates a *feedback loop*. This feedback loop incorporates average temperature, the level of discomfort experienced by the occupant as a result of this average temperature, and the thermostat setting. If the occupant experiences the average temperature as uncomfortably hot or cold, he or she may change the thermostat setting. This, in turn, will change the average temperature, thereby changing the occupant's level of discomfort, and so on. The creation of this higher-order feedback loop gives the variable denoting average temperature the status of *control parameter*: since average temperature can now exert an indirect influence on the thermostat setting, it becomes part of a causal chain influencing the state of the thermostat switch, the state of the heater and the temperature at any given instant. The figure below depicts the relationship between the two levels of feedback.

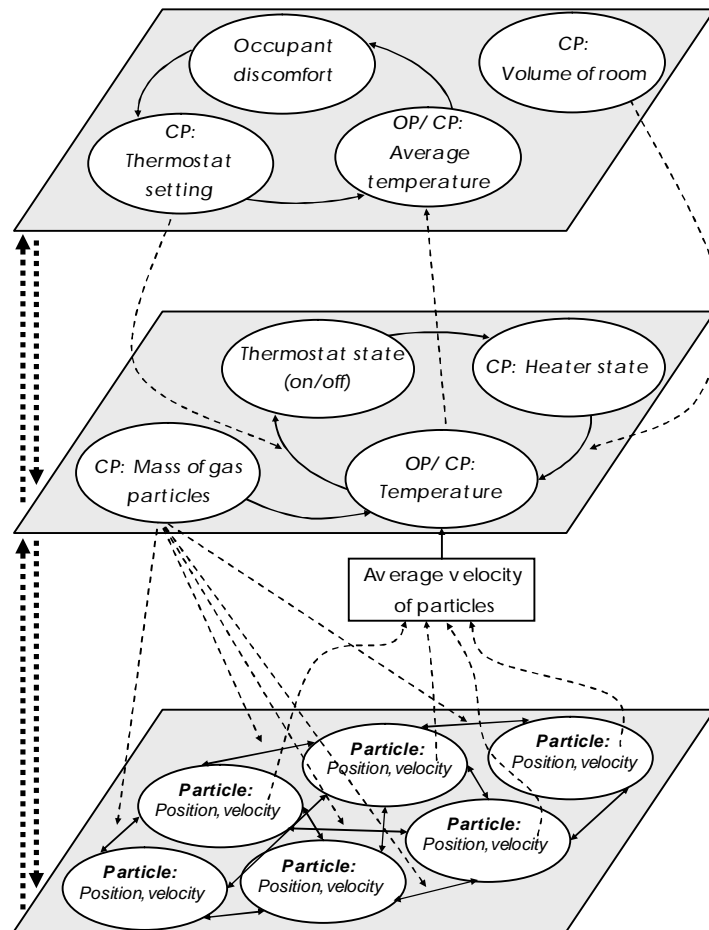


Figure 4.27 Two levels of feedback in a heater-thermostat system

In the previous paragraph, it was asserted that the addition of a human occupant to a room regulated by a thermostat creates a higher-order feedback loop that regulates the parameters of the feedback loop at the second level of description. Adding a human being to the system is not the only way of creating this higher-order feedback loop, however. It is instructive to note the *minimum* addition that would have been required to close the loop between average temperature and the thermostat setting. At the very least, one would have had to add a mechanism (say, an electronic circuit) that has four attributes:

- ✓ A memory, so that fluctuations in temperature over a time interval can be recorded;
- ✓ The ability to calculate the average temperature over this time interval;
- ✓ A control parameter specifying the “preferred” average temperature; and
- ✓ The ability to change the thermostat setting if the average temperature falls above or below this preferred value.

Whereas the “vocabulary” of an ordinary heater-thermostat system is limited to “It’s too hot” and “It’s too cold,” the addition of this mechanism gives the system the ability to create and respond to messages such as “The correction of ‘It’s too cold’ is excessive” or “The correction of ‘it’s too cold’ is insufficient” (Bateson, 1979).



It would be possible, in principle, to add yet another level of description to those presented above. As was mentioned earlier, a fourth-level description of the heater-thermostat system might contain variables such as the price of electricity, as this variable could influence the human occupant's propensity to change the thermostat setting if he or she experiences a given level of discomfort related to the average temperature of the room. However, the discussion presented above is sufficient to achieve the objective of this discussion – namely, to define the relationship between hierarchies of logical types and hierarchies of description. This relationship may be summarised as follows: a particular level of description incorporates dynamic variables, control parameters and order parameters, where the control parameters and order parameters belong to a higher logical type than the dynamic variables. At the next level of description, these parameters are treated as dynamic variables presided over by their own set of control parameters and order parameters. At the third level, these parameters would be regarded as dynamic variables, and so on.

In closing, it is worthwhile to summarise the difference between control parameters and order parameters. An order parameter is a pattern or trend in dynamic variables at a particular level of description. This pattern may be discernable to an observer *outside* the system, but it does not necessarily affect the dynamics of the system to which it belongs. It is an artefact of description, not an inherent property of the system. In this sense, order parameters are distinct from control parameters, as the latter are variables that have causal links to lower-level dynamic variables. An order parameter can, however, assume the role of control parameter. This change can be brought about by adding an element to the system that is capable of registering and responding to changes in the pattern represented by the order parameter. The capability exhibited by such an element is suggestive of *learning*, since some forms of learning also involve recognising and responding to patterns. This analogy between pattern recognition and learning is explored in greater detail in Section 5.2.4 below.

The notion of levels of description will appear in numerous guises in later chapters of this study. In Chapter 5, for instance, it is used to explicate the relationships between various psychological concepts. It also forms a central theme of the model of public participation presented in Section 7.2. Both these applications build on the idea that *human behaviour and experience can be described at more than one level*. This idea is explored in greater detail in the following section.

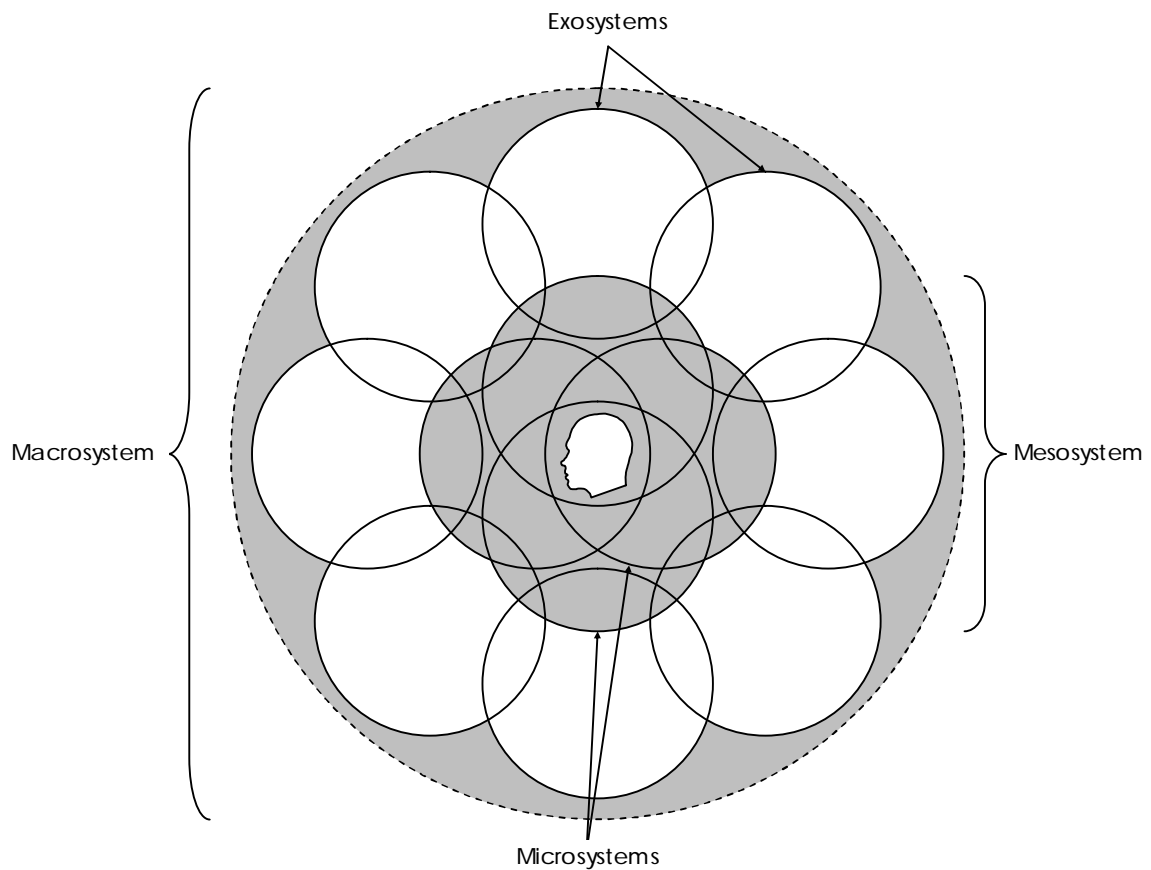
#### *b) Levels of description in psychology*

Several authors have argued that psychological and social phenomena can be analysed at various levels (see, for example, Alexander & Giesen, 1987; Peele, 1981). Many of these authors agree that no single level is consistently superior to any other; consequently, scientific investigations in the behavioural sciences should proceed concurrently at all of these levels. A number of models have also been proposed that delimit the set of levels required for a comprehensive understanding of human behaviour. Willner (1985), for instance, suggests that there are four possible levels of analysis in psychology: the biochemical, physiological, cognitive and experiential level.

Another psychological model that distinguishes between levels of description is the *ecological model of human development* proposed by Urie Bronfenbrenner (1976; 1979). Bronfenbrenner's taxonomy of levels differs from that of Willner in that it does not stop at the experiential level. Instead, Bronfenbrenner argues that people cannot be adequately

understood without the aid of still higher-level descriptions – in particular, descriptions that include their social and cultural milieu.

Bronfenbrenner developed his model in the context of developmental psychology as a means of distinguishing between proximal and distal factors that influence human development. The model (which is depicted in the figure below) postulates that the human ecosystem can be divided into four sets of concentric subsystems: microsystems, mesosystems, exosystems and macrosystems. He defined a microsystem as “a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics” (Bronfenbrenner, 1979, p. 22). Families, classrooms and peer groups are therefore all examples of microsystems.



**Table 4.1 Bronfenbrenner’s model of concentric systems**

A mesosystem, on the other hand, consists of the *links between a person’s microsystems* – the relationship between a person’s family and school, between family and peers, between peers and school, etc. The mesosystem may therefore be regarded as a set of order and/or control parameters that describe or determine the “rules of interaction” among microsystems. Thus, the difference between mesosystem and microsystems exemplifies a *difference in logical typing*, the former occupying the higher level.

Every person participates in a number of microsystems. However, people who share a particular microsystem do not necessarily have *all* their microsystems in common. For instance, parents and children share the same family microsystem, but the parents might also inhabit a workplace microsystem not shared by their children. Insofar as the microsystems inhabited by the people sharing my own microsystems have an indirect influence on my life, they are regarded as my *exosystems*. (My father's workplace, for instance, would be part of my exosystem.) Microsystems and exosystems therefore belong to the same level of abstraction, the difference between them being one of perspective: my microsystem might be your exosystem, and vice versa.

Finally, a *macrosystem* may be defined as a set of social and cultural consistencies in which microsystems, exosystems and mesosystems are embedded. In other words, a macrosystem consists of the values, norms and customs that regulate interaction within and between mesosystems. In the hierarchy of logical types, it therefore occupies a higher level than either microsystems or mesosystems.

#### 4.4 ECONOMICS OF FLEXIBILITY

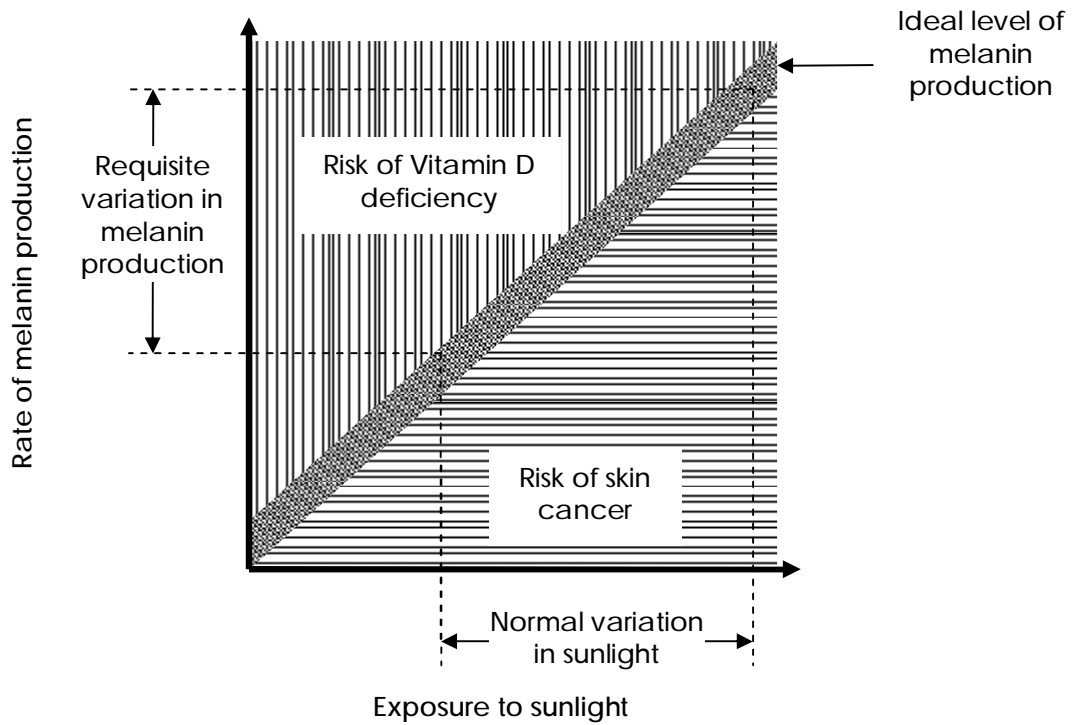
In the preceding sections, the example of the heater-thermostat system was used to demonstrate that a system may be regarded as a network of interlinked variables, that these variables can be arranged in a hierarchy of logical types, and that alternative descriptions of the same system can be compiled by concentrating on subsets of variables that are located at different levels in the hierarchy. The example of the thermostat can also be used to illustrate another general systemic principle – namely, that in many systems, the stability of certain variables depends on the ability of other variables to *fluctuate*. The thermostat can only compensate for changes in external temperature if the state of the switch (and, hence, the amount of electrical current flowing through the heater) is able to *change*. Likewise, the average temperature can only be maintained within the occupant's range of tolerance if the thermostat setting can be adjusted.

Bateson (1979, p. 74) uses another simple example of a negative feedback loop to illustrate the same principle: "The statement 'The acrobat is on the high wire' continues to be true under impact of small breezes and vibrations of the wire. This 'stability' is the result of continual changes in ... the acrobat's posture and the position of his or her balancing pole." Thus, if the tightrope walker were deprived of the ability to change her posture or the angle of the balancing pole, the slightest perturbation would cause her to fall.

Each variable in the description of a dynamic system therefore has a range of *requisite flexibility* – that is, a spectrum of potential alternative states that it must be able to adopt in order to ensure the survival of the whole system. This is particularly true of living systems such as organisms, ecosystems, social systems and the like. In such systems, "for any given variable there is an upper and a lower threshold of tolerance beyond which discomfort, pathology, and ultimately death must occur. Within these limits, the variable can move (and is moved) in order to achieve *adaptation*" (Bateson, 2000, p. 496).

The human physiological system may be described as a network containing many thousands of interlinked variables, each with its own range of requisite flexibility. One of these variables is the rate of melanin production in the skin. If one spends a lot of time in the sun, melanin is increased to protect the skin from the effects of radiation – a familiar process known as *tanning*. If one spends time in the shade, on the other hand, melanin is reduced.

The reason why we lose our colour when we stay indoors is that it allows more sunlight to penetrate to the deeper layers of the skin, where it stimulates the production of Vitamin D – an essential adaptive trait in the days before artificial vitamins. As the figure below illustrates, the requisite flexibility of melanin production can be defined as the range of production rates needed to minimise both the risk of skin cancer and Vitamin D deficiency – in times of plentiful sun as well as during the rainy season.



**Figure 4.28 Melanin production as an example of requisite flexibility**

If any of the variables in such a network are tied down for some reason, the effect is much the same as that of tying a tightrope walker’s hands behind her back – it places the system at risk by reducing its ability to respond to changes in the environment. Albinism, for instance, is a congenital defect that robs the skin of the ability to produce melanin. By removing this dimension of flexibility, it prevents the body from responding appropriately if it is exposed to the sun, and thereby increases the risk of skin cancer.

One of the basic challenges facing all adaptive systems is that of matching the *actual* flexibility of their constituent variables to their ranges of *requisite* flexibility. Since requisite flexibility was defined above as the range of alternative states that are needed to ensure survival of the system, it stands to reason that actual flexibility must not be *less* than requisite flexibility. What is less obvious, however, is that actual flexibility must not significantly exceed requisite flexibility. This is because it necessarily costs a system some energy and information processing resources to maintain its flexibility. For skin cells to be able to change their pigmentation in response to varying intensity of sunlight, for instance, they must maintain certain biochemical pathways through which the signal “I am getting more sun” can be received and translated into the command “Produce more melanin.” Maintaining

unnecessary flexibility very often implies that some resources are being consumed that could have been more profitably spent elsewhere.

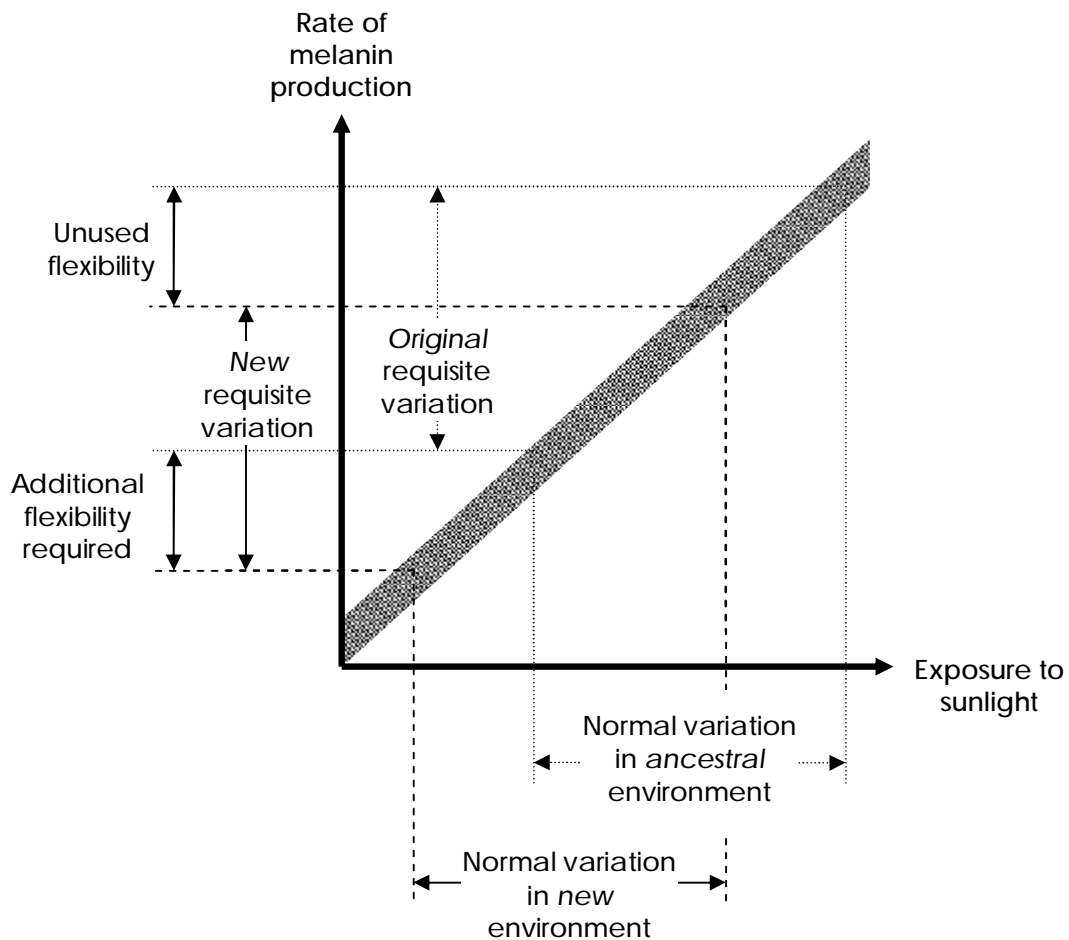
All adaptive systems have developed ways of *expanding* flexibility where it is needed (in order to cope with changing external and internal conditions), while at the same time *reducing* flexibility where it is superfluous (in order to conserve energy and information processing resources). Bateson (2000) dubbed this general principle “*the economics of flexibility*.” One of the most common solutions to the problem of balancing the “flexibility budget” is that of developing differentiated *subsystems* endowed with varying degrees of flexibility. Systems that have adopted this solution also possess mechanisms by which *consistently successful solutions become “hardwired” into their less flexible subsystems* – thus freeing up resources and flexibility – while untried or conditionally successful solutions are maintained in states of greater flexibility.

Another consequence of the economics of flexibility is the fact that any complex adaptive system has a *finite amount of flexibility at its disposal at any given time*. Hence, if a large proportion of this flexibility has to be channelled into one part of the system, the amount of flexibility available to *other parts* will be correspondingly reduced. A more precise way of explaining this general phenomenon is by drawing attention to the fact that, if a task or adaptive challenge places high demands on one region of a system, some variables in that region will inevitably be pushed towards their limits of tolerance. Variables that have their “backs pressed against the wall” in this manner will have less room available in which to fluctuate – much as the ability of a guitar string to vibrate is reduced if one presses one’s finger against it. Consequently, variables that are directly or indirectly linked to these immobilised variables will also be pinned down to some extent. In this manner, the loss of flexibility may spread throughout the system, thus putting its survival at risk (Bateson, 2000).

Evidence of the economics of flexibility at work can most easily be obtained by searching for instances where it has failed, or is only partially successful. In many cases, such conspicuous failures involve solutions that have been *prematurely hardwired*, leading to their application in circumstances under which they are no longer appropriate. Failures of this nature are always a possibility when faced with the challenge of deciding when something has worked well enough, for long enough, to conclude that alternative courses of action will not be required in future. Underlying this challenge is the more fundamental problem of deciding when something has remained constant for long enough to warrant the conclusion that it will not change again. A few examples of both the successes and the failures of the economics of flexibility are listed below.

#### 4.4.1 Exposure to sun and melanin production

When early human beings migrated from Africa into Europe, they encountered a climate that differed in several respects from that of their ancestral home. For instance, while they still experienced seasonal variations in the average intensity of sunlight, both the upper and lower boundaries of this range of variation had shifted downwards. Sunny months were no longer quite as sunny, while cloudy months were considerably more overcast. This change placed their physiological systems for varying melanin production under pressure in two ways. During the long periods of limited sunlight, it was no longer possible to reduce skin pigmentation sufficiently to ensure adequate production of Vitamin D. At the other extreme, there was now a large range of flexibility that was no longer required to cope with the harsh African sun. This change in requisite flexibility is graphically illustrated in Figure 4.29



**Figure 4.29** An example of change in requisite flexibility

Over several millennia, evolution provided the solution to both these problems. As always happens during reproduction, small, random genetic mutations gradually accumulated over successive generations. Of those mutations affecting the parameters of melanin production, the ones that had the greatest survival value – and were therefore passed on to the greatest numbers of offspring – were those that *increased* flexibility at the low end of the range of melanin production rates, and *eliminated* unnecessary flexibility at the high end. Through this process of random mutation and natural selection, the genetically determined upper and lower boundaries of melanin production were eventually “hardwired” to new values (Bateson, 1979).

The economics of flexibility impacted negatively on those light-skinned Europeans returning to Africa many centuries later – or would have done so, were it not for the invention of clothing and sunscreen. As was mentioned above, their ancestors had long since discarded the ability to increase melanin production to rates comparable with those of native Africans – a step that was favoured by natural selection because it conserved certain physiological resources. Because of this loss of flexibility, however, colonists who did not resort to artificial protection were now faced with increased risk of painful sunburn and skin cancer.



#### 4.4.2 The cardiovascular system and atmospheric pressure

The responses of the cardiovascular system to changes in atmospheric pressure provide a good example of an adaptive system with *more than two levels of flexibility*. Imagine the example of a fisherman who leaves his home by the sea to visit relatives in an Alpine village. Upon arrival in the village, he feels his heart pound and his breath race. These changes are part of his body's response to the reduction in atmospheric pressure. He can still survive in the thin mountain air, but only as a relatively inflexible creature: should he now meet with some emergency – say, being chased by a wolf – he would not have breath enough to run away. Some of his physiological variables are operating close to their limits of available flexibility (Bateson, 1979).

If the fisherman stays in the village for some weeks, his body will gradually become *acclimatised* to the new environment: his heart will no longer pound and he will no longer be short of breath unless he undertakes some special exertion. His cardiovascular system will have restored its flexibility by achieving certain changes at a *deeper, less flexible level*. But this adjustment is only achieved at a price: should the fisherman now return to sea level, he may well experience drowsiness and discomfort, and it may take some time to re-adjust to the denser air.

Suppose now that the fisherman decides to stay in the Alpine village for the rest of his life, and to raise his children there. If all his descendants remain in the same environment for thousands of generations, evolution will “hardwire” the high-altitude adaptations at yet a deeper, more inflexible level – that of genetics. Once this has happened, complete re-adaptation to life at low altitudes will no longer be possible within the course of a single human lifetime.

#### 4.4.3 Habit formation

Habit formation provides an example of *psychological “hardwiring.”* Consider the process of learning to drive an automobile. Initially, the mechanics of driving require all one's conscious attention – one must think about operating the pedals, activating the indicator before turning, and the like. Through frequent practice, however, these actions become more and more automatic – they become “hardwired” into the unconscious. As Bateson (2000) often pointed out, *we are least aware of that which we know best*. This process of automation has the undoubted advantage of allowing one to pay more attention to the things happening on the road around one. However, the concomitant loss of flexibility also has its disadvantages. Consider the experience of having to drive an unfamiliar car in which the indicator is located on the other side of the steering wheel. Although one may consciously be aware of this fact, one will still mistakenly activate the windscreen wipers at most turns. It is only when such “automatized procedures repeatedly fail” that they are re-assigned to the realm of mind characterised by “conscious access” (Franklin, Baars, Ramamurthy, & Ventura, 2005, p. 35).

#### 4.4.4 Institutionalisation of successful solutions

In an organisation or business, consistently successful solutions usually become “hardwired” as *policies* or *procedures*. In a society, actions with the greatest average benefit to all its members become enshrined as *laws*. As Cortner et al. (1998, p. 160), put it, “Values of the past created the institutions of the present, while changing social values will affect the

institutions of the future.” Policies, procedures and laws have the advantage that they save people the trouble of having to “re-invent the wheel” – of weighing the merits of all possible courses of action – each time a new problem or moral choice presents itself (De Greene, 1991).

This “hardwiring” also has its disadvantages, however: it is responsible for the fact that “institutions are often characterized by inertia” (Jentoft et al., 1998, p. 428). Changes in the economic or corporate environment might invalidate established policies and procedures, and an organisation might be unable to respond to such changes in time by modifying its strategies – a failure that places it at risk of extinction. Similarly, there will always be instances in which proclaimed legislation is inappropriate or unjust – where the letter of the law violates its spirit. The economics of flexibility in psychological and social systems forms a central theme of the model of public participation presented in Section 7.1.

#### 4.5 PHASE SPACE

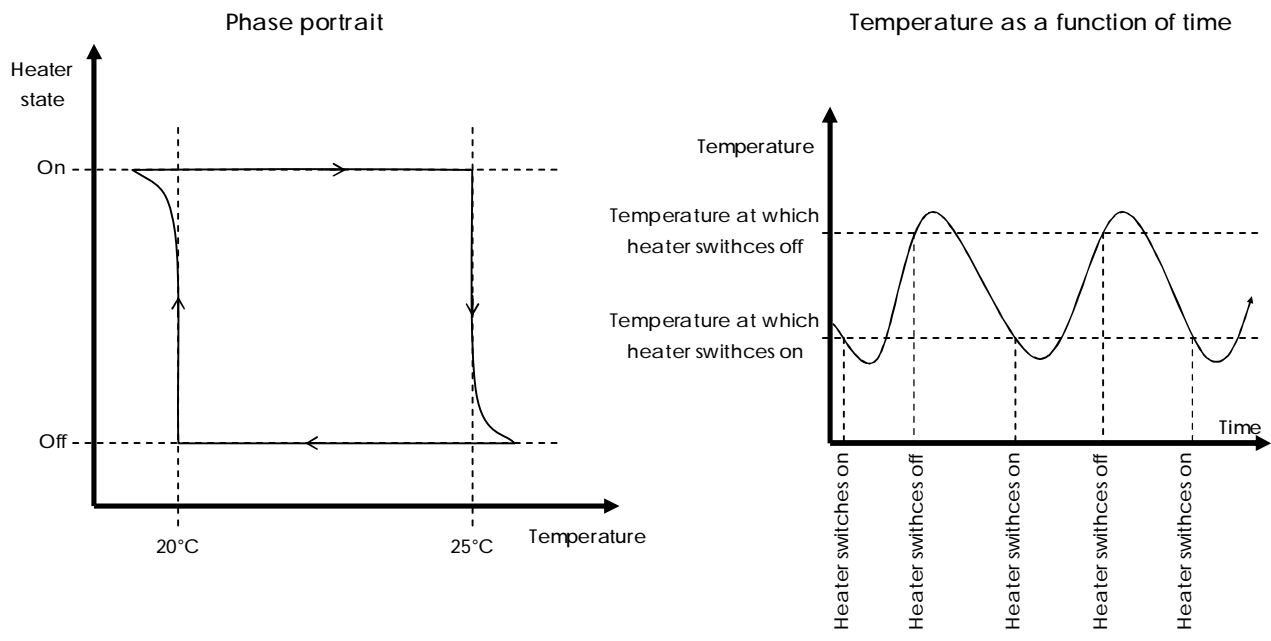
One of the reasons why one might describe a system as a network of interlinked variables is because such a description may enable one to discern *patterns* or *regularities* in the system’s behaviour. Patterns, in turn, enable an observer to predict the behaviour of a system to some extent. As was mentioned earlier, patterns in the values assumed by variables are also a prerequisite for the definition of *order parameters* – which, in turn, offer the advantage of reducing the number of variables needed to capture the macroscopic properties of a system.

Unfortunately, the patterns exhibited by many systems (especially living ones) are much more subtle and elusive than those found in the behaviour of a thermostat. In such cases, systems theorists often employ *geometrical methods* to depict a system’s dynamics. Because such methods offer a visual representation of a system’s behaviour over time, they capitalise on the human brain’s ability to discern spatial patterns. In this way, they can bring to light trends or regularities that might otherwise have remained obscure.

Constructing a geometrical representation of a system’s dynamics involves the creation of an abstract mathematical space of which each dimension represents one of the variables describing the state of the system. Hence, “the actual state of the system, described by the actual values of the dynamical variables, is represented as a point in this space. The dynamics of the system correspond to the motion of this point” (Nowak & Lewenstein, 1994, p. 21). The  $n$ -dimensional space created by the set of variables is called a *phase space*, and the curve inscribed in this space by the point denoting the state of the system is often referred to as a *trajectory* or *phase portrait*.

The notion of phase space may be illustrated with the example of the heater-thermostat system. If one considers only two variables of this system – temperature and the state of the heater – the corresponding phase space would consist of two dimensions. Suppose that the thermostat is set so that the heater turns on if the temperature falls below 20°C and turns off again if it rises above 25°C. The trajectory that would be inscribed by these two variables is depicted in the figure below. The trajectory in this figure is not a perfect rectangle, as it is assumed that the thermostat would “overshoot the mark” to some extent. If the room’s temperature reaches 25°C and the heater switches off, for instance, it might continue to grow hotter for a few seconds as the heat of the element dissipates through the room.

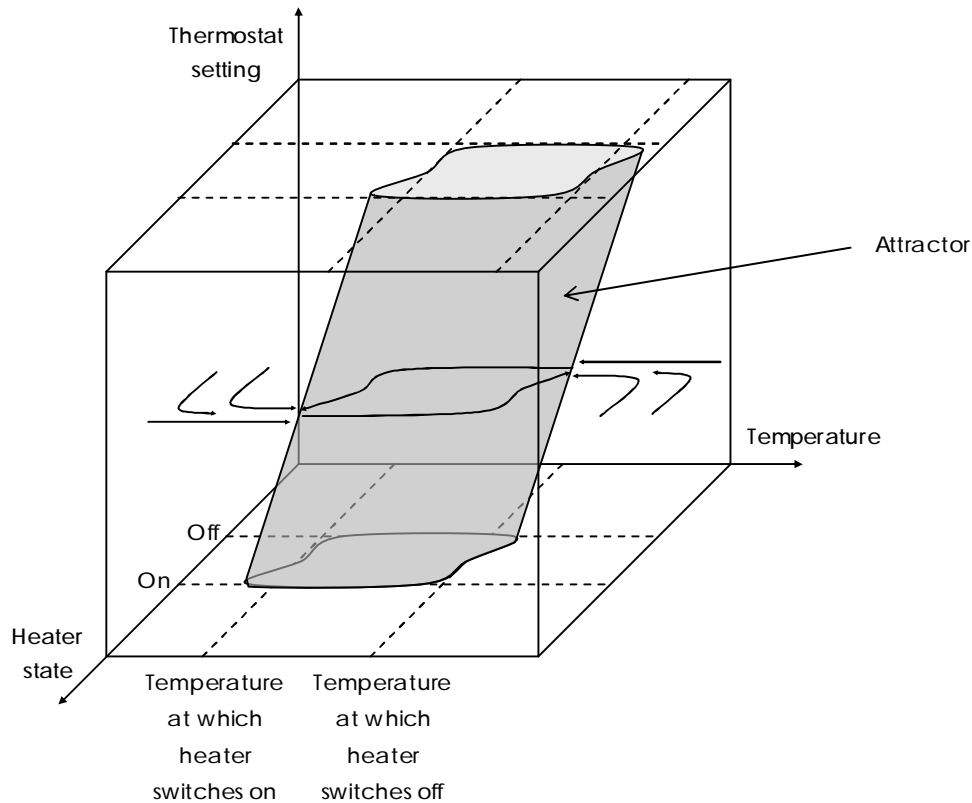
Conversely, if the heater switches on at 20°C, the temperature might continue to fall for a short while before it begins its upward swing.



**Figure 4.30 Dynamics of a heater-thermostat system as trajectory in two-dimensional phase space**

A common characteristic of many systems is that, over time, “the trajectory tends to settle in a subset of the phase space; during its further evolution, the system explores only this subset or, more precisely, its closest vicinity. This subset of the phase space is called an *attractor*” (Nowak & Lewenstein, 1994, p. 25). A good way of visualising an attractor is by again considering the phase space of the heater-thermostat system, but this time with the addition of a third dimension denoting the *thermostat setting*. Changing the thermostat setting changes both the temperature at which the heater switches on and the temperature at which it switches off. Thus, a sudden adjustment of the thermostat setting to a higher value will disrupt the stable pattern depicted by the phase portrait in the figure above. It will now take some time for the heater to dissipate enough heat into the room to raise its temperature rises to the new threshold value. Once this value has been reached, however, the heater will switch off and temperature will drop until the point is reached at which the heater switches on again. The regular oscillation of temperature will then resume. Conversely, if the thermostat setting were suddenly adjusted to a much lower setting, the heater will switch off and remain inactive until the temperature of the room reaches the lowest point of its new trajectory.

This attractor in the three-dimensional phase space of the heater-thermostat system is depicted in the figure below. As the arrows surrounding the attractor indicate, the point representing the state of the system will tend to wander toward the surface of the attractor, even if it is initially some distance away. Once it has reached the attractor, however, it tends to remain there unless the system is perturbed in some way.



**Figure 4.31 An attractor in the three-dimensional phase space of a heater-thermostat system**

#### 4.6 VALID AND INVALID DESCRIPTIONS OF SYSTEMS

It was mentioned in Section 4.1.2 that it is often possible to compile more than one valid description of the same system. Because every description represents a *simplification* of that which is being described, alternative descriptions might select different aspects of the “territory” to include in the “map.” Each description will therefore have certain strengths as well as certain weaknesses.

This claim may be substantiated by considering the two alternative descriptions of the heater-thermostat system represented in the figure below. The left-hand figure (which is a copy of Figure 4.18) makes it very clear that a change in the occupant’s level of discomfort is assumed to result in a change of the thermostat setting. It also clearly indicates that a change in temperature will lead to a change in the state of the heater, and that the relationship between these two variables is mediated by the thermostat setting. However, this type of representation is limited in that it does not indicate the *feedback loop* between thermostat setting and occupant discomfort or between temperature and the state of the heater.

The right-hand figure, by contrast, clearly shows the two feedback loops. It also emphasises (by virtue of the position of the feedback loops in relation to each other) that thermostat setting and occupant discomfort belong to a *higher logical type* than the other two

variables. However, this figure does not indicate the *nature* of the relationships among variables. For instance, it does not indicate that an *increase* in temperature will cause the heater to be switched *off*. The left-hand figure, on the other hand, makes this relationship perfectly clear. A weakness shared by both these depictions, however, is that they are not able to show the overall dynamics of the system as clearly as the phase portrait presented in Figure 4.31 above.

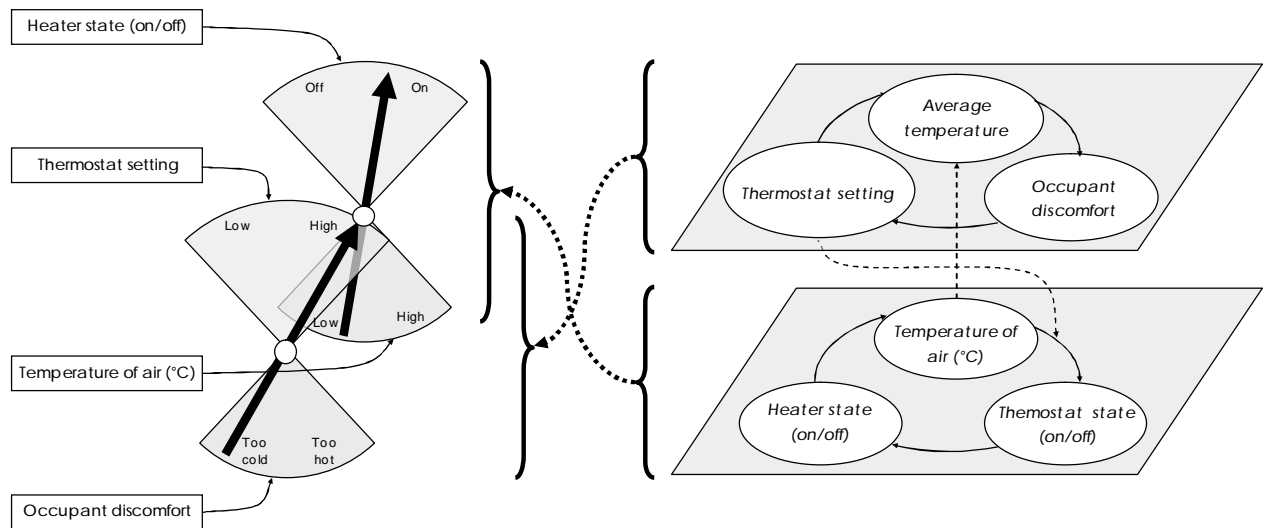


Figure 4.32 Two alternative descriptions of a heater-thermostat system

#### 4.6.1 Errors in logical typing

Not all alternative descriptions of a system are equally valid, however. Some descriptions might contain crude deficiencies such as the omission of information that is crucial to understand the behaviour of the system. For instance, someone might attempt to understand fluctuations in a room's temperature by means of a description that includes the heater but not the thermostat. Such a description is clearly deficient.

If a system can be described at more than one level, more subtle errors in description become possible. In particular, it then becomes possible to *confuse different levels of description* – an error Bateson (1979; 2000) refers to such errors as *errors in logical typing*. An error in logical typing essentially involves “applying the idiom appropriate at one level of description to phenomena belonging to another” (Perold, 2001, p. 414).

An example of an error in logical typing is provided by the philosophy of *vitalism*. This philosophy “asserts that some nonphysical entity, force, or field, must be added to the laws of physics and chemistry to understand life” (Capra, 1996, p. 25). The error of vitalism resides in the fact that, while life is indeed not a physical substance, it is also not a non-physical “thing” – it is a particular type of *organisation* that characterises certain aggregates of matter (organisms, organs, tissues or cells). While it is possible to describe an organism,

organ, tissue or cell at the level of individual molecules, the defining features of life (the ability to reproduce, metabolise, etc.) only emerge at higher levels of description – in particular, levels of descriptions that include multiple patterns and pathways of interaction among molecules. For the vitalist, the non-physical force that imbues organisms with life is *already present at the atomic or molecular level*. Vitalism therefore commits an error in logical typing by importing concepts from a higher level (the level at which the phenomena of life appear) into lower-level discourse (descriptions focusing on the atomic or molecular level), where they do not belong.

Analogous errors in logical typing may appear at many levels. An example is the assumption that, because the brain is capable of thought, it must necessarily follow that the individual neurons of which the brain is composed are themselves endowed with mental properties (Hofstadter, 1979). The error of this assumption lies in the fact that, while the brain is indeed composed of neurons, its mental characteristics arise from the *patterns of interaction* between these neurons.

Bateson (1979) argues that the behavioural sciences are rife with implicit errors in logical typing. He cites two phenomena whose scientific study he regards as having been bedevilled by such errors: *exploration* and *crime*. The following two excerpts make his position clear:

It seems to puzzle psychologists that the exploring tendencies of a rat cannot be simply extinguished by having the rat encounter boxes containing small electric shocks. From such experiences, the rat will not learn not to put his nose into boxes: he will only learn not to put his nose into the particular boxes that contained electric shocks when he investigated them. In other words, we are here up against a contrast between learning about the particular [a lower logical type] and learning about the general [a higher logical type]. A little empathy will show that from the rat's point of view, it is not desirable that he learn the general lesson. His experience of a shock upon putting his nose into a box indicates to him that he did *well* to put his nose into that box in order to gain the information that it contained a shock. (p. 138)

It is interesting to consider the nature of such a concept as "crime." We act as if crime could be extinguished by punishing parts of what we regard as criminal actions, as if "crime" were the name of a sort of action or of part of a sort of action. More correctly, "crime," like "exploration," is the name of a way of organizing actions. It is therefore unlikely that punishing the act will extinguish the crime. In several thousand years, the so-called science of criminology has not escaped from a simple blunder in logical typing. (p. 138)

#### 4.6.2 Beneficial errors in logical typing

It should be noted, in closing, that *not all errors in logical typing are necessarily deleterious*. Bateson (2000), Watzlawick, Beavin and Jackson (1967) and others have argued that phenomena such as art, humour, poetry, etc. rely on *deliberate* errors or weaving of logical types to work their magic. A stage play, for example, may be regarded as a "map" depicting a series of fictional events and actions. At the same time, however, the play also conveys information of a higher logical type: it comments on society in general, or on the real world in which the stage is embedded. The message conveyed by the imaginary world



depicted in the play may therefore “fold in on itself like a scene depicted in an Escher lithograph” (Perold, 2001, p. 429). Myths play a similar dual role: they portray concrete events and characters, but at the same time they deal with abstract themes that are universal.

*Humour* affords another everyday example of weaving in logical types. The punch-line of a joke, for instance, would be meaningless if it were not for the preceding lines that define its context. Those lines can therefore be regarded as *meta-messages* that shape the listener’s interpretation of the punch-line. The explosive moment in a joke occurs, however, when the punch line suddenly compels the listener to re-interpret many or all of the lines that went before it. Thus, while the “body” of the joke acts as a set of meta-messages informing the meaning of the punch-line, the punch-line now becomes a meta-message that changes the meaning of its context. In effect, the hierarchy of logical types closes in on itself. According to Bateson (2000), it is precisely this Möbius-like twist that makes a joke funny.

Other forms of humour apart from joke-telling may also involve a play with logical types. For instance, statements such as “The more things change the more they stay the same” “owe their wiseacre wisdom to a muddling of logical types. What ‘changes’ and what ‘stays the same’ are both of them descriptive propositions, but of different order” (Bateson, 1979, p. 74). Thus, although errors in logical typing can often be a source of confusion, life in the absence of such errors would be reduced to “an endless interchange of stylized messages, a game with rigid rules, unrelieved by change or humor” (Bateson, 2000, p. 193).

#### 4.7 CONCLUSION

In the foregoing sections, a number of references were made to psychological and social phenomena. For instance, it was mentioned in Section 4.1.1 that one of the early breakthroughs in the history of systems theory occurred when a group of social scientists (Gregory Bateson among them) realised that the notion of *feedback loops* offer a powerful tool for their field of study. In Section 4.2.3b), the “bandwagon effect” and the relationship between motivation and achievement were cited as examples of *positive feedback loops*. In Section 4.3.2, it was pointed out that it is often possible to distinguish between *messages*, *meta-messages*, *meta-meta-messages*, etc. in the realm of communication, and that these categories of messages form a hierarchy of logical types.

Then, in Section 4.3.3a), it was mentioned that a pattern in the behaviour of a system may be regarded as an order parameter, and that such an order parameter may acquire the status of a *control parameter* if some part of the system has the ability to recognise and respond to this pattern. It was suggested that this ability to recognise patterns bears some similarity to the psychological phenomenon of *learning*. Section 4.3.3b) presented an overview of Bronfenbrenner’s ecological model of human development, and in Section 4.4.3, the process of *habit formation* was offered as evidence of the economics of flexibility in mental processes. Finally, in Section 4.6.1, it was suggested that conventional explanations of phenomena such as “exploration” and “crime” may contain implicit *errors in logical typing*, as they neglect the distinction between individual actions and patterns of action.

The following chapter presents a more in-depth exploration of systemic principles such as feedback, logical typing, levels of description, etc. from the perspective of their application to psychology. It also discusses a number of psychological concepts that are not directly

related to systems theory. However, the notion that human beings may be described as multi-levelled systems embedded in still larger systems runs as a unifying thread through the entire chapter, binding the arguments, conjectures, theories and observations of various authors into a coherent whole.

## CHAPTER 5: AN OVERVIEW OF PSYCHOLOGICAL CONCEPTS

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*Seeing is believing. But faith is in believing that seeing is believing*

– Gregory Bateson

The aim of this chapter is to present an overview of psychological concepts and theories. It does not pretend to offer a comprehensive review of the subject; instead, it concentrates on those aspects of psychology that have been incorporated into the models presented in Chapters 6 and 7. The figure below provides an outline of the chapter's content. It distinguishes between four levels of description that are relevant to psychology: the biological level, the intrapsychic level, the interpersonal level and the social level. Various upward and downward linkages exist between these four levels. Examples of upward linkages include the fact that emotion (an intrapsychic variable) influences interpersonal relationships, while the manner in which a person processes or interprets information (another intrapsychic variable) influences the manner in which he or she communicates with others (a phenomenon that emerges at the interpersonal level). Examples of downward linkages include the effect of group dynamics and culture (both categorised here as social phenomena) on individual behaviour and interpersonal relationships.

The chapter is divided into four sections, each of which is devoted to a particular level of description. The first section focuses on the *biological basis* of human behaviour. In this section, it is argued that *evolutionary psychology* presents an important contribution to scientific understanding of the link between biology and psychology, as it explains how certain traits may have become established as part of the genetic makeup of the human species.

The second section concentrates on individual behaviour and on the *intrapsychic factors* that underlie it. It is argued that each person has certain *stable personal attributes* (introversion, etc.), and that these attributes influence virtually every aspect of behaviour. Personality, in turn, is partially determined by genetics. The section goes on to discuss three intrapsychic constructs: *emotion*, *learning* and *attitudes*. It is suggested that *information processing* forms the cognitive basis of all three phenomena.

In the third section, attention is shifted from the individual to the *interpersonal*. Psychological theories about the manner in which people interpret one another's actions – or make *attributions* regarding one another's intent and disposition – are discussed. It is suggested that attribution, together with *interpersonal communication*, play a role in the formation and evolution of *interpersonal relationships*. The types of relationships that exist between people, in turn, influence the types of *power* they are able to exert over one another. Relationship dynamics also play a role in people's efforts to *persuade* others, or to effect changes in their attitudes.

The fourth section moves from the interpersonal to the *social*. It focuses on *group dynamics* and the effect such dynamics have on people's attitudes and decisions. A distinction is drawn between dynamics *within* groups and dynamics *between* groups, and *inter-group conflict* is discussed as an instance of the latter. Finally, the concept of *culture* is explored,

and it is argued that culture is to be regarded as an emergent property of the dynamics between and within large groups of people.

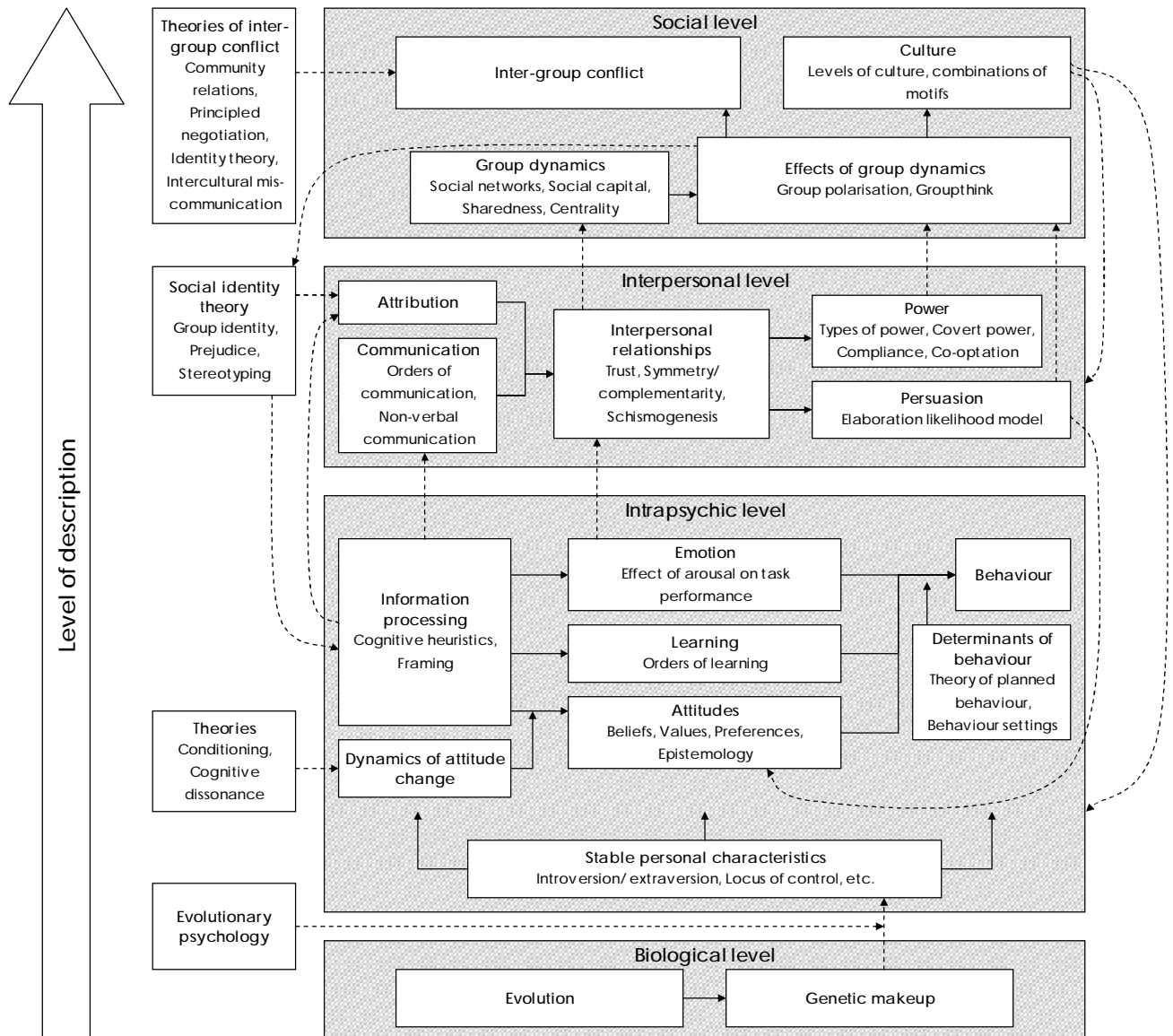


Figure 5.1 Outline of Chapter 5

### 5.1 THE BIOLOGICAL LEVEL

The dangers of *reductionism* (that is, ignoring the reality of emergent properties of systems) have been highlighted repeatedly in the preceding chapters. In the case of psychology, an extreme form of reductionism would be to assume that all human behaviour and experience can be satisfactorily explained in terms of the behaviour of neurons. No matter how fervently one rejects such a stance, however, the fact remains that the workings of the human mind must ultimately be rooted in the functional organisation in the brain (unless, of course, one is willing to leave the door open for supernatural explanations of mind). The biological or neurological level of description therefore represents a legitimate approach to

the analysis of psychological phenomena – provided one does not assume this level of description to be consistently superior to all others.

Trying to understand human behaviour by studying the structure of the brain presents a formidable problem, however. The neural pathways that are assumed to be responsible for mental processes exist at a scale far beyond the resolution of even the most powerful imaging technology available today (Hagen, 2004). The neural substrate of the mind is therefore still a “black box.”

*Evolutionary psychology* is a relatively young theoretical perspective that offers an alternative means of forging the link between biology and psychology. Proponents of this theory – which include Jerome Barkow, Leda Cosmides and John Tooby (1992), Steven Pinker (1997), Martin Daly and Margo Wilson (1988) – argue that, instead of attempting to peer into the “black box,” one should try to infer its content from what is known about biological evolution. As was mentioned in Section 4.4.1, a basic tenet of evolutionary theory is that any organ, tissue or biological system is functionally organized to serve survival and reproduction. Genes producing biological structures that do not meet this requirement are gradually eliminated from the gene pool, while those that increase an organism’s chances of surviving and reproducing proliferate. Hence, a scientist’s understanding of any biological structure is greatly facilitated by knowledge of the evolutionary pressures that shaped that structure. For instance, it is much easier to understand the workings of a fish’s gills if one knows that fish evolved to live in water, that water contains dissolved oxygen, and that fish need oxygen to survive.

A characteristic of any evolutionary analysis is that it adopts an *historical view* of its subject matter. Evolution is a gradual process; it can only produce noticeable changes in a species or population over several thousands of generations. A central element in evolutionary explanations is therefore the *environment of evolutionary adaptedness* (EEA) – that is, the environment to which a species is adapted (Hagen, 2004). The EEA does not denote a concrete place or specific time, but those attributes of a species’ (physical and social) environment that have remained more or less constant for significant stretches of evolutionary time. A polar bear’s EEA, for instance, consists of landscapes covered with snow and ice. Knowing this helps us to explain why polar bears have white fur; it is a camouflaging device. Even polar bears that are the products of many generations’ breeding in captivity retain this device, because insufficient time has elapsed for evolution to adapt them to the inside of a zoo.

What is true of other animals is true of human beings as well. Our lungs bear testimony of the fact that we evolved in an oxygen-bearing atmosphere, while the design of our eyes (so much less prominent than, say, those of bushbabies) confirm that our ancestors were diurnal, not nocturnal. The basic assumption of evolutionary psychology is that the brain, like any other organ in the body, has been shaped by evolution through natural selection. “Humans are no more exempt from the laws of gravity than from the laws of evolution. Behind individual peculiarities and cultural masks, there are universal faces reflecting our innate tendencies” (Grinde, 2005, p. 317).

According to evolutionary psychology, understanding human behaviour therefore involves understanding *what the human brain was designed to do* – what challenges of survival and reproduction it helped our ancestors to overcome – and this, in turn, involves studying the human EEA. This task is complicated by the fact that the environment in which our species

spent the greater part of its history was very different from the environment in which most of us live today (Barkow et al., 1992). From the available palaeontological data, it is reasonable to conclude that the main challenges faced by our prehistoric ancestors included finding food and shelter and avoiding predators and poisonous animals such as snakes and spiders. This would explain why arachnophobia is so much more prevalent than phobias of, say, automobiles – despite the fact that the number of people who die from spider bites every year is insignificant in comparison to those who die in automobile accidents. A fear of spiders presented an adaptive advantage in the human EEA, as it would have reduced one's chances of receiving a fatal spider bite. Consequently, the propensity to harbour such a fear was stamped into our genetic makeup by evolution. In short, arachnophobia is an anachronism. Automobiles, by contrast, did not form part of the EEA; they have only been around for about a century, which is far too short a time for evolution to equip people with an inborn fear of them.

Evolutionary hypotheses are a valuable guide to psychological research. If we have established that a certain behavioural tendency (such as the tendency to avoid snakes and spiders) would have increased the chances of survival and reproduction in the EEA, we can then design experiments or observational studies to determine whether human beings do in fact possess a universal, innate tendency to exhibit this behaviour. By adopting such an approach, evolutionary psychologists claim to have devised explanations for various aspects of human behaviour, including aggression (Buss & Shackelford, 1997; Daly & Wilson, 1988), sexual behaviour and sexual violence (Thornhill & Palmer, 2000) and even landscape preferences (Kaplan, 1987).

Several of the psychological phenomena discussed in later sections of this chapter are amenable to evolutionary explanations. For instance, the tendency of people to divide their social world into ingroups and outgroups (see Section 5.4.3) may derive from the fact that early humans lived in small tribes. Members of the tribes were dependent on one another for survival, while other tribes may frequently have posed a threat or competition for scarce resources. Studies of contemporary tribal societies confirm that members of small, close-knit groups are more likely to work together for the common good than are members of large, industrialised societies (Grinde, 2005).

Of particular relevance for this study are evolutionary explanations of common trends in *group decision-making*. It seems likely that human beings possess an innate tendency to perceive differences of opinion in the context of a social group as conflict, to experience such conflict as a state of unpleasant arousal, and to be motivated to reduce this arousal by attempting to resolve their differences (Festinger, 1964). Such a tendency would have presented an adaptive advantage in the EEA, as differences among group members in terms of knowledge and capability would necessarily have given rise to differences of opinion about the most appropriate way of dealing with situations (Latané & Bourgeois, 2001). Moreover, such differences would have been contrary to the consensus required for the group to proceed with its efforts (Tindale et al., 2003).

## 5.2 THE INTRAPSYCHIC LEVEL

As the previous section shows, evolutionary psychology can provide insight into certain universal, innate aspects of human behaviour. Evolutionary theory makes another far-reaching claim about the human species: it asserts that there must always have been



differences among individuals and groups in terms of their genetic makeup. Such differences provide the “raw material” on which natural selection can work to produce evolutionary innovation (Futuyma, 1986). A completely homogenous species cannot evolve, because its gene pool does not contain variations that could create differentials of reproductive fitness.

One aspect of human diversity in which the influence of genetic differences can be discerned is diversity in terms of *personality* (Eysenck, 1982). The claim that one’s genetic makeup plays a role in determining one’s personality does not, of course, deny the influence of environmental factors. However, empirical evidence suggests that a significant proportion of inter-individual variation along several personality dimensions may be accounted for by genetic differences (Loehlin, 1992). The types of differences that may be subsumed under the heading “personality” form the subject of the following section.

### 5.2.1 Stable personal attributes

Personality may be defined as “enduring dispositional characteristics of an individual that hold together and explain the person’s behavior” (Sternberg, 2001, p. 479). A large variety of models have been put forward to explain what we might mean when we say “X and Y have different personalities.” The model that currently enjoys the widest acceptance is the so-called “*five-factor model*” (McCrae & John, 1992). This model posits that all personality differences can be mapped onto five dimensions: extraversion, neuroticism, openness to experience, agreeableness and conscientiousness. The meanings assigned to these five dimensions are briefly outlined below:

- ✓ *Extraversion*. This dimension was first posited as a personality variable by Carl Jung (1990). People who score high on this dimension are characterised as outgoing, sociable, upbeat, friendly, assertive, gregarious, while people who score low are characterised by the opposite traits.
- ✓ *Neuroticism*. People with high scores on this dimension tend to be anxious, hostile, self-conscious, insecure and vulnerable.
- ✓ *Openness to experience*. This dimension is associated with curiosity, flexibility, vivid fantasy, imaginativeness, artistic sensitivity and unconventional attitudes. High scores on this dimension may also be correlated with liberal political beliefs.
- ✓ *Agreeableness*. People who score high on this dimension tend to be sympathetic, trusting, cooperative, modest and straightforward. Such traits may also promote altruistic behaviour. People who score low on this dimension, by contrast, are often suspicious, antagonistic and aggressive.
- ✓ *Conscientiousness*. A high score on this dimension denotes diligence, self-discipline, an organised lifestyle, punctuality and dependability.

Individuals with contrasting personalities not only tend to act in different ways; they also often differ in terms of how they *interpret situations*. In order to capture some of these differences, Rotter (1990) defined a construct that he calls *locus of control*. This construct is based on the premise that people differ in the extent to which they believe themselves to be in control of or responsible for the things that happen to them. Thus, they can be arranged on a spectrum ranging from an *internal locus of control* to an *external locus of control*. People with an internal locus of control believe that the causes of events mostly

originate within individuals. At the extreme end of the spectrum are those who habitually misattribute causality to internal factors, even when they can be plausibly ascribed to external events. People with an external locus of control, on the other hand, tend to believe that the causes of events usually originate in the environment. Taken to the extreme, such people consistently misattribute causality to external rather than to internal causes.

The difference between an internal and an external locus of control may be illustrated by considering the hypothetical scenario in which two people with similar employment records are retrenched from the same job. If the one person has an internal locus of control, he or she would most likely feel personally responsible for having been laid off, attributing this misfortune to poor job performance. If the other person has an external locus of control, he or she would most likely overlook the possibility that job performance played a role in the retrenchment. Instead, such a person might look to the boss's prejudice or conspiratorial co-workers for an explanation.

Cross-cultural studies have found that people belonging to different cultures sometimes differ in terms of their tendency to exhibit either an internal or an external locus of control (Dyal, 1984). Since different cultures often have different child-rearing practices (Mead, 1948), these results suggest that a person's locus of control may be at least partially shaped by environmental factors. The theme of culture and its possible role in determining locus of control is taken up again in Section 5.4.5 below.

### 5.2.2 Information processing

As the foregoing discussion shows, one's personality may affect how one processes information obtained through one's senses. Information processing may be regarded as the basic currency of the mind, since all intrapsychic phenomena – thought, emotion, learning, etc. – involve assimilating, interpreting or responding to information in one form or another. It is therefore not surprising that a whole sub-discipline of psychology has grown up around studies of the way in which the human mind deals with information – a field known as *cognitive psychology* (Anderson, 1995). Two concepts of cognitive psychology are discussed below: *cognitive heuristics* and *framing*.

#### a) *Cognitive heuristics*

A large body of psychological research (see, for example, Kahneman & Tversky, 1984; Tversky & Kahneman, 1974) indicates that people do not always make use of all information that is available to them and that they do not always follow logical rules when making judgements or drawing inferences from information. Instead, people seem to rely on handy rules of thumb or "heuristics." While these mental rules of thumb help to save time and cognitive effort, they often lead to errors or biases.

Tversky and Kahneman (1974) argued that a wide variety of errors in human judgement and inference can be attributed to the existence of three simple, fundamental cognitive heuristics: *representativeness*, *availability*, and *anchoring-and-adjustment*:

- ✓ *The representativeness heuristic.* Representativeness refers to the tendency of people to judge something that is unfamiliar on the basis of how much it resembles something else that is familiar. The marketing method of *branding* takes advantage of this heuristic: once a product range has established a positive reputation in the market, its manufacturer will take care to ensure (through labelling and packaging)

that any new products it develops are instantly recognisable as belonging to the same range (Kardes, 1999). The representativeness heuristic may lead to errors when people focus on irrelevant or superficial similarities between new and unfamiliar things.

- ✓ *The Availability Heuristic.* Availability refers to the ease with which instances or associations come to mind – in other words, how *available* an experience or idea is for recall from memory. The availability heuristic helps to explain why people frequently overestimate the risk of catastrophic events such as airplane crashes, while underestimating more mundane risks such as automobile accidents. The former receive much more frequent and vivid media coverage; they are therefore more salient in one's memory, easier to recall, and are thus judged to occur more frequently than is actually the case. The availability heuristic also influences decision-making, since it may lead people to select the first solution that becomes conscious (Franklin et al., 2005).
- ✓ *The Anchoring-And-Adjustment Heuristic.* People often make judgements on the basis of initial impressions and then subsequently revise those judgements in the light of additional information. The anchoring-and-adjustment heuristic refers to the tendency of such revisions (or adjustments) to be insufficient to correct or compensate for the effect of the initial judgment (the anchor). The anchoring-and-adjustment heuristic may help to explain why people are often more easily persuaded by messages from likeable sources (attractive people, for instance) than from disagreeable ones: the positive impression created by the messenger creates a cognitive "anchor" that sways the judgement of the message itself.

People do not always make judgements in terms of cognitive heuristics; the human mind sometimes does manage to approximate the ideals of formal logic. This raises the question of when cognitive heuristics are most likely to come into play. Evidence suggests that they are most often employed under conditions of stress, information overload, insufficient time or ambiguity (Chaiken, 1980).

### b) *Framing*

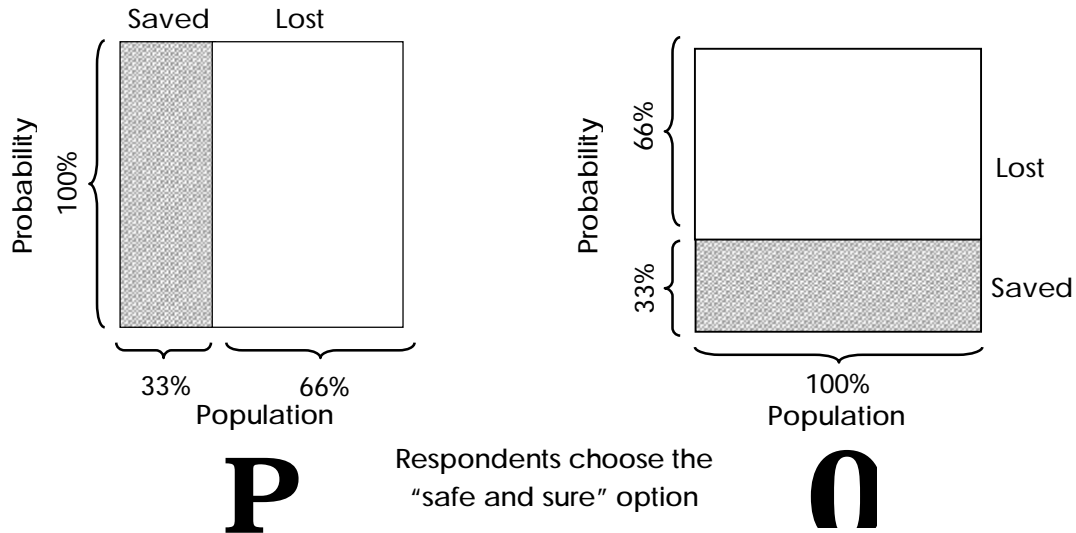
The *framing effect* refers to the fact that the manner in which information is presented often influences the way it is processed. For instance, options framed in terms of gains are evaluated as more acceptable than those framed in terms of equivalent losses. As Levin and Gaeth (1988) have shown, people are more likely to buy meat labelled as "75% lean" than meat labelled as "25% fat."

The effect of framing on *risk-related decision-making* has been demonstrated in an experiment by Kahneman and Tversky (1984). In this experiment, a group of physicians was presented with a hypothetical scenario in which a disease was expected to kill 600 people. Each respondent was asked to rate two alternative strategies for managing the disease. One strategy would be certain to save 200 of the 600 people, while the other would have a two-thirds probability of saving no-one.

A comparable group of physicians was presented with the same scenario. In their case, however, the alternatives were framed in terms of *losses* rather than gains. Thus, they were told that the first strategy would result in the death of 400 people out of the 600. If the second strategy were adopted, on the other hand, there would be a one-third probability

that nobody would die and a two-thirds probability that all 600 people would die. The choices presented to the two groups are summarised in the figure below.

A. Options are framed in terms of gains:



B. Options are framed in terms of losses:

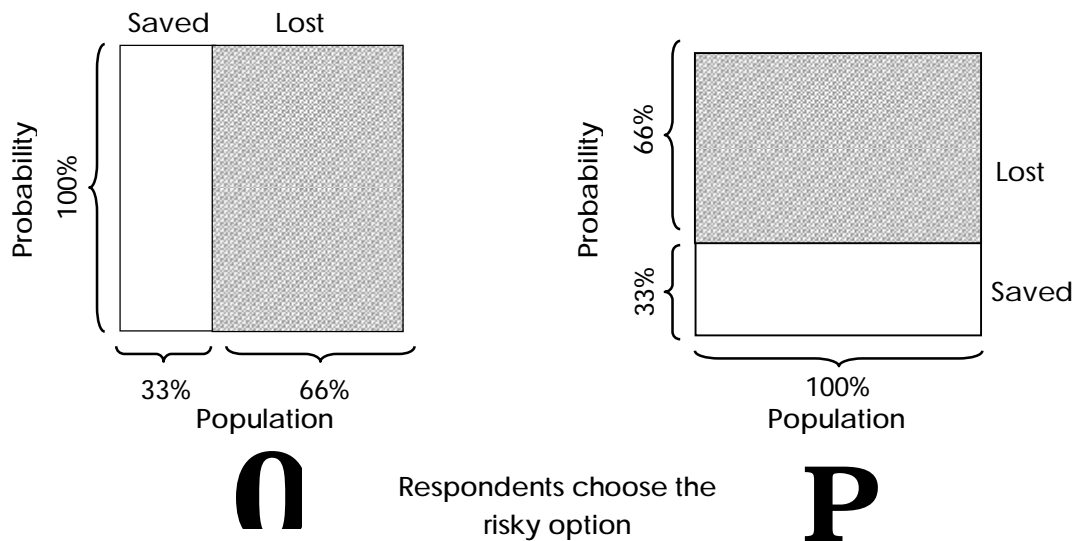


Figure 5.2 The effect of framing on decision-making

As this figure shows, the problems presented to the two groups are logically identical: both involve a choice between a strategy that is sure to save one-third of the people (and lose the other two-thirds) and a strategy that has a one-third probability of saving everyone (and a two-thirds probability of losing everyone). Nevertheless, they elicited very different responses: when the question was framed in terms of numbers of people saved, nearly three-quarters of respondents chose the option that would be sure to save some of the

people. However, when it was framed in terms of people dying, the majority chose the risky option that offered a small chance of preventing all deaths.

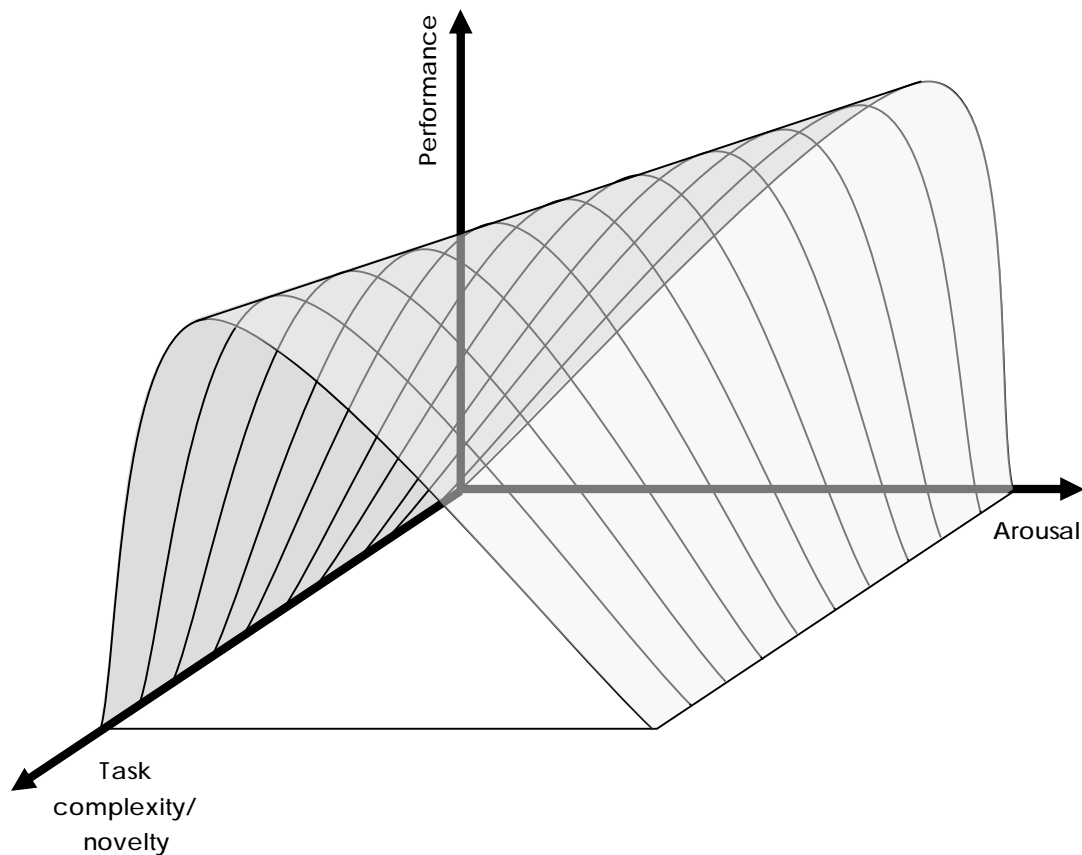
These results suggests that, when decisions are framed in terms of gains, people tend to be *risk averse*, preferring courses of action that are sure to yield minimal gains. However, if decisions are framed in terms of losses, people tend to be *risk-seeking*, preferring options that offer some hope of avoiding all losses. The fact that the respondents were physicians faced with a hypothetical medical dilemma suggests that framing influences decisions *even in contexts where the decision-maker possesses professional expertise regarding the problem at hand*.

### 5.2.3 Emotion

In addition to cognitive limitations and biases, factors that may constrain human decisions include *emotions*. Most people can recall instances in which strong emotions of joy, sorrow or anger have clouded what should have been a rational decision. However, most current research indicates that the effect of emotion on decision-making is not uniformly negative (Loewenstein & Lerner, 2003). In fact, a complete absence of emotion might prevent a person from taking any decision at all (Damasio, 1994).

The role of emotion in human behaviour goes beyond its effect on decision-making; it may also affect the manner in which decisions are *executed*. One way in which feelings can influence action is by increasing psychological *arousal*. Empirical evidence suggests that high emotional arousal can impair the effectiveness of behaviour (see, for example, Mandler, 1993). However, this is not always the case: under certain circumstances, increased arousal may actually *improve* task performance. One hypothesis aimed at explaining this inconsistency posits that the relationship between emotional arousal and behavioural performance, if drawn on a graph, follows an *inverted U-shape* (Zajonc, 1998). According to this hypothesis, performance increases as arousal increases – but only until the latter has reached an optimum value. If arousal goes beyond this point, performance deteriorates again.

The degree of arousal at which peak performance is achieved depends in part on the nature of the task. For simple or familiar tasks, optimal performance occurs at high levels of arousal. Complex or novel tasks, on the other hand, are much more susceptible to the effects of excessive arousal. Hence, the optimal level of arousal is much lower for such tasks. The figure below depicts the relationship between arousal, task complexity and performance in terms of a three-dimensional graph.



**Figure 5.3 The relationship between arousal, task complexity and performance**

The “inverted U” hypothesis described above may explain why the presence of an audience sometimes improves performance (a phenomenon known as *social facilitation*) while, at other times, it may induce debilitating stage fright (or *social inhibition*). It appears that social inhibition occurs most frequently for new, unfamiliar tasks, while familiar, well-learned tasks benefit most often from social facilitation. This trend makes sense if it is assumed that the presence of others *increases emotional arousal* (Zajonc, 1980). Because the optimal level of performance occurs at lower levels of arousal for unfamiliar tasks, the presence of others tends to push one’s arousal into regions where it becomes deleterious. For familiar tasks, on the other hand, optimal performance occurs at higher levels of arousal. Thus, the experience of being watched by others may impart just enough arousal to let performance approach its peak value.

Although Zajonc’s explanation of social facilitation and social inhibition is appealing, it does not enjoy universal support. An alternative explanation of the link between performance and the presence of others is that an audience may inhibit performance, not so much because it increases arousal, but because it distracts one from the task at hand (Baron, 1986). A psychological phenomenon that has elicited a far greater degree of controversy is that of *learning*, which forms the topic of the following section.



### 5.2.4 Learning

A large number of theories have been proposed to account for various aspects of learning, including learning by direct experience (Skinner, 1974; Thorndike, 1911), learning through observation (Bandura, 1977) and learning through instruction (Ausubel, 1977; Bruner, Goodnow, & Austin, 1956). In this author's view, however, the most powerful theory of learning is the one proposed by Bateson (2000), as this theory presents a unified framework that can encompass most (perhaps all) of the aforementioned theories.

Bateson's theory of learning builds on the concept of *logical types*, which was introduced in Section 4.3.2. He posited that the various types of learning can be arranged in a hierarchy, and that alternative positions in this hierarchy stand in the same relationship to one another as a set of numbers stands to a set of sets of numbers, or a map to its legend, or messages to meta-messages, or dynamic variables to order and control parameters. The centrepiece of his theory is the following argument: "The word 'learning' undoubtedly denotes *change* of some kind. ... Change denotes process. But processes are themselves subject to 'change.' The process may accelerate, it may slow down, or it may undergo other types of change such that we shall say that it is now a 'different' process" (Bateson, 2000, p. 283). Thus, for any instance of learning that we might identify, there exists the possibility that experience might cause the learning process to change over time. This change in the learning process would entail a *higher order of learning*. Bateson argued that much of the controversy among schools of psychological thought is due to the fact that they use the word "learning" to denote processes belonging to different levels in the hierarchy.

Bateson adopted the following terms to denote the elements of the hierarchy:

- ✓ "Zero-Learning" (receiving a piece of information, a message or a signal);
- ✓ Learning I (or "*Proto-Learning*," which involves a change in the parameters of Zero-Learning);
- ✓ Learning II (or "*Deutero-learning*," which involves a change in the parameters of Learning I);
- ✓ Learning III (or "*Trito-Learning*," which involves a change in the parameters of Learning II); etc.

He believed that, although the hierarchy of orders of learning is theoretically infinite, most known organisms are capable of achieving only a very limited number of levels. For instance, he suggested that most mammals are capable of three orders of learning, whereas the majority of non-mammalian species may be limited to one or two levels. Human beings may be the only species on earth that is able to achieve four levels of learning. Each of these levels is discussed in greater detail below.

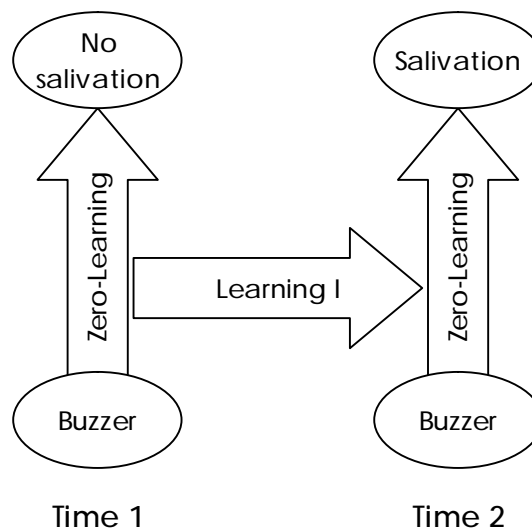
#### a) Zero-Learning

Zero-Learning forms the foundation of Bateson's hierarchy of learning. He defined the term as "the simple receipt of information from an external event, in such a way that a similar event at a later (and appropriate) time will convey the same information. I 'learn' from the factory whistle that it is twelve o'clock" (Bateson, 2000, p. 284). Another example of Zero-Learning is the experience of seeing a traffic light turn red and realising that one should step on the brake.

Bateson perhaps deliberately chose the lunch-time factory whistle as an example of Zero-Learning because of its close resemblance to the outcome of a classical conditioning experiment. A Pavlovian dog that has been conditioned to associate a buzzer with food “learns” from the sound of the buzzer that food is on its way. The sound conveys meaningful information – but only if the dog has *already* been successfully conditioned. In order to explain how the association between the buzzer and the food (or between the whistle and lunch) came about in the first place, it is necessary to invoke the concept of Learning I.

### b) Learning I

As was pointed out above, Learning I may be described as a *change in the parameters of Zero-Learning*. In the case of the Pavlovian dog, this change occurred through the repeated association of the sound of the buzzer with the appearance of food. “At Time 2 the dog salivates in response to the buzzer; he did not do this at Time 1” (Bateson, 2000, p. 287). This example is graphically illustrated in the figure below.



**Figure 5.4 A graphical representation of Learning I**

Other examples of Learning I include:

- ✓ Instrumental reward and instrumental avoidance (in which an organism learns to perform an action in order to gain a reward or avoid punishment);
- ✓ Rote learning, in which “an item in the behavior of the organism becomes a stimulus for another item of behavior” (Bateson, 2000, p. 288); and
- ✓ The “disruption, extinction or inhibition of ‘completed’ learning which may follow change or absence of reinforcement” (Bateson, 2000, p. 288).

Central to the process of Learning I is the notion of *pattern* or redundancy. In the classical conditioning experiment cited above, a pattern was evident in the stimuli presented to the dog: the sound of the buzzer was repeatedly followed by the appearance of food. If Learning I involves the perception of a pattern of events or stimuli, the perception of a

pattern of patterns of events or stimuli may be regarded as an instance of Learning II, which is the subject of the following section.

### c) *Learning II*

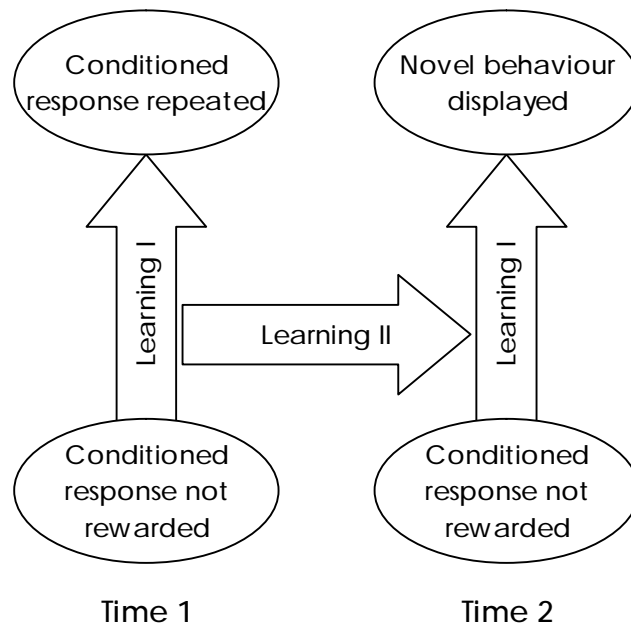
Bateson defined Learning II (or Deutero-Learning) as “the process of ‘learning to learn,’ or of becoming more adept at solving particular classes of problems. (A person who completes a series of rote learning tasks and consequently becomes more skilled at rote learning has undergone deutero-learning.)” (Perold & Maree, 2003, p. 229). Learning II may also involve learning to expect events to follow certain types of patterns. For example:

In classical Pavlovian contexts, the contingency pattern which describes the relation between ‘stimulus’ (CS), animal’s reaction (CR), and reinforcement (UCS) is profoundly different from the contingency pattern characteristic of instrumental contexts of learning. In the Pavlovian case: *If* stimulus and a certain lapse of time: *then* reinforcement. In the Instrumental Reward case: *If* stimulus and a particular item of behavior, *then* reinforcement. In the Pavlovian case, the reinforcement is not contingent upon the animal’s behavior, whereas in the instrumental case, it is. Using this contrast as an example, we say that Learning II has occurred if it can be shown that experience of one or more contexts of the Pavlovian type results in the animal acting in some later context as though this, too, had the Pavlovian contingency pattern. Similarly, if past experience of instrumental sequences leads an animal to act in some later context as though expecting this also to be an instrumental context, we shall again say that Learning II has occurred (Bateson, 2000, p. 294).

A dramatic example of Learning II is provided by the following experiment, recounted in Bateson’s *Mind and Nature: A necessary unity* (1979) and depicted in diagrammatic form in the figure below:

At the Oceanic Institute in Hawaii, a female dolphin (*Steno bredanensis*) had been trained to expect the sound of the trainer’s whistle to be followed by food and to expect that if she later repeated what she was doing when the whistle blew, she would again hear the whistle and receive food. ... But this pattern was fitted only for a single episode in the exhibition tank. ... When the dolphin came on stage [for the next session], she again did her ‘something,’ but got no whistle. The trainer waited for the next piece of conspicuous behavior ... [which] was then reinforced and repeated. But the tail flap was, of course, not rewarded in the third performance.

Each of the first fourteen sessions was characterised by many futile repetitions of whatever behavior had been reinforced in the immediately preceding session. Seemingly only by accident did the animal provide a piece of different behavior. In the time out between the fourteenth and fifteenth sessions, the dolphin appeared to be much excited; and when she came onstage for the fifteenth session, she put on an elaborate performance that included eight conspicuous pieces of behavior of which four were new and never before observed in this species of animal. (pp. 136-137)



**Figure 5.5 A graphical representation of Learning II**

Learning II manifests itself in a number of ways in human affairs. Many of the adjectives that are commonly used to describe *personality* might be defined in terms of Learning II experiences. For example, a “creative” person is one who (like the dolphin) has deuterolearned through repeated experience that innovative, novel behaviour is often rewarded. On the other hand, a person who is “fatalistic” or has an *external locus of control* (see Section 5.2.1) might be one who has deuterolearned to view the world as a gigantic Pavlovian experiment. In such a world, external events are usually not contingent upon one’s own behaviour. Thus, one’s ability to influence events is limited; the best one can do is to read the signs denoting imminent events and to compose oneself accordingly. Bateson notes that “much of the Learning II which ... determines much of the relational life of all human beings, (a) *dates from early infancy*, and (b) *is unconscious*” (Bateson, 2000, p. 300). The premises laid down by early Learning II are deeply rooted *habits of thought* that structure our dealings with the world and with other people.

**d) Learning III**

Learning III is, according to Bateson, a rare phenomenon, even in human beings – although it does seem to occur from time to time in psychotherapy, religious conversions and other “Damascus” experiences. Learning III involves more than just a replacement of the premises which were formed through Learning II – just as Learning II involves more than just the replacement of one conditioned response with another. Bateson (Bateson, 2000) describes Learning III as follows:

I once heard a Zen master state categorically: “To become accustomed to anything is a terrible thing.” But any freedom from the bondage of habit must also denote a profound redefinition of the self. If I stop at the level of Learning II, “I” am the aggregate of those characteristics which I call my

“character.” “I” am my habits of acting in context and shaping and perceiving the contexts in which I act. Selfhood is a product or aggregate of Learning II. To the degree that a man achieves Learning III ... his “self” will take on a sort of irrelevance. The concept of “self” will no longer function as a nodal argument in the punctuation of experience.” (p. 304)

A person who has attained Learning III will therefore be more able to *form* and to *change* those habits which are acquired through Learning II. Suppose, for instance, that a “fatalistic” person (one who has acquired a certain set of premises through Learning II) undergoes a learning experience that changes him or her into a “creative” person. This learning experience would *not* be an example of Learning III, since one set of premises has simply been substituted for another. Suppose, however, that, after the learning experience, the person is able to *shift at will from being “fatalistic” to being “creative” to being “fatalistic” again*. Such flexibility of character can be interpreted as evidence that Learning III has taken place. It is reminiscent of the serenity prayer of St. Francis of Assisi:

<i>Lord, grant me the courage to change the things that I can change</i>	(Learning II)
<i>The serenity to accept the things I cannot change</i>	(Learning II)
<i>And the wisdom to know the difference.</i>	(Learning III)

e) *Conclusion: A unified framework for psychology?*

It was mentioned earlier that Bateson’s notion of a hierarchy of learning offers the possibility of a unified framework that can encompass several aspects of psychology. This statement can now be supported with examples:

- ✓ Much of what is termed “learning” in educational circles involves the assimilation of information encoded in verbal or written form – in other words, *Zero-Learning*.
- ✓ Behaviourist research, on the other hand, is chiefly concerned with processes falling under the heading “*Learning I*.” Learning a language – which is a prerequisite for learning in the educational sense – also involves Learning I.
- ✓ The types of learning that clinical psychologists try to bring about – in other words, a change in the way a person views the world or deals with events – is most appropriately regarded as *Learning II*.
- ✓ *Learning III* – in other words, self-transcendence – belongs to the province of mystics or transpersonal psychologists.

The foregoing discussion approached the phenomenon of learning from a *behavioural perspective*. For instance, Learning I was defined as a change in the way an organism *responds* to certain events, while Learning II was defined as an *observable* change in the way such changes come about. This exposition offers the advantage of laying down empirical criteria that a researcher can use to search for evidence of the various types of learning. However, it does not represent the only possible way to conceptualise learning.

The matter of learning could also have been approached from a *cognitive angle* – which would have involved describing the various orders of learning from the “inside out” rather than from the “outside in.” Thus, Learning I might have been defined as a change in a

person's *attitude* regarding a particular object or concept. Learning II would then involve a change in a person's propensity to adopt a particular kind of attitude, and so on. The notion of attitudes and its relationship to other psychological constructs are discussed in more detail in the following section.

### 5.2.5 Attitudes

Attitudes represent an extremely influential concept in psychology (Latané & Nowak, 1994). Its importance stems partly from the fact that attitudes are presumed to be indicators or predictors of behaviour (Stahlberg & Frey, 1992), and partly from the fact that the attitude construct may serve as a link between the various levels at which human behaviour can be described. "Through the concept of attitude, individual preferences may be related to group action and social pressures to individual behaviour" (Latané & Nowak, 1994, p. 220).

Attitudes have been variously defined as "predispositions to respond to some class of stimuli with certain classes of response" (Rosenberg & Hovland, 1960, p. 3, in Stahlberg & Frey, 1992), "a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related" (Allport, 1935, p. 810, cited in Latané & Nowak, 1994), and "a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Fishbein & Ajzen, 1975, p. 6).

All of these definitions link attitude to a propensity to act in a certain way. When pinpointing the intrapsychic variables presumed to underlie such a propensity, different authors have adopted different viewpoints. Rosenberg and Hovland (1960), for instance, regard an attitude as consisting of three components:

- ✓ An *affective* component, which is concerned with evaluative feelings of liking or disliking;
- ✓ A *cognitive* components, incorporating beliefs, opinions and ideas; and
- ✓ A *conative* component, which entails behavioural intentions or action tendencies.

A different view of attitudes – one that is held by authors such as Ajzen and Fishbein (1980) – reserves the term "attitude" for the *affective* component of a person's responses to a psychological object. These authors prefer to use the term "beliefs" to describe the cognitive component of a person's responses, while the term "behavioural intention" is used to denote the predisposition to a certain kind of attitude-relevant action.

#### a) *The relationship between attitudes and beliefs*

If attitudes are regarded as distinct from beliefs, the question arises as to how the two constructs are related. (Fishbein, 1963, cited in Stahlberg & Frey, 1992) developed the so-called "*expectancy-value model*" (also sometimes referred to as the "expected utility model," which was mentioned in Section 2.1.1d) to describe this relationship. According to the expectancy-value model, a person's attitude toward an object or event is a function of:

- ✓ The person's *belief* that the object or event possesses a certain attribute; and
- ✓ The *value* that the person assigns to that attribute.

Thus, if one is opposed to the uncontrolled destruction of natural habitats (a value stance), and one expects that more stringent environmental legislation will prevent such destruction



(a belief), one will have a positive attitude toward such legislation. The expectancy-value model can be expressed in terms of the following equation:

$$A_o = \sum b_i e_i$$

In this equation,  $A_o$  denotes the attitude toward some object  $O$ ,  $b_i$  the belief that Attribute  $i$  is associated with the object and  $e_i$  the subjective evaluation of Attribute  $i$ .

**b) Beliefs, values, preferences and epistemology**

The expectancy-value model explains why people might have different attitudes toward the same issue: they might hold different *beliefs* about the issue, or they might *evaluate* aspects of the issue in different ways. This raises yet another question: if people differ in terms of their beliefs and evaluations, how might such differences have come about? The simplest explanation for differences in beliefs is that people are often exposed to different items of *information*. For instance, if I am informed by a reliable source that environmental legislation is not usually effective in curbing the exploitation of nature, my positive attitude toward such legislation may be correspondingly diluted.

If one investigates the reasons for differences in *evaluation*, on the other hand, an additional level of complexity is uncovered. A person's evaluation of a given issue is often rooted in *other beliefs*. For instance, if I am asked, "Why are you opposed to the destruction of natural habitats?" I might reply, "Because such habitats contain many as-yet undiscovered species, some of which might possess valuable medicinal properties. Thus, preserving natural habitats is a way of preserving biodiversity – which, in turn, may serve human welfare." This reply reveals a chain of interlinked beliefs and evaluations – a "knowledge structure" (Nisbett & Ross, 1980) – that is graphically depicted in the figure below.

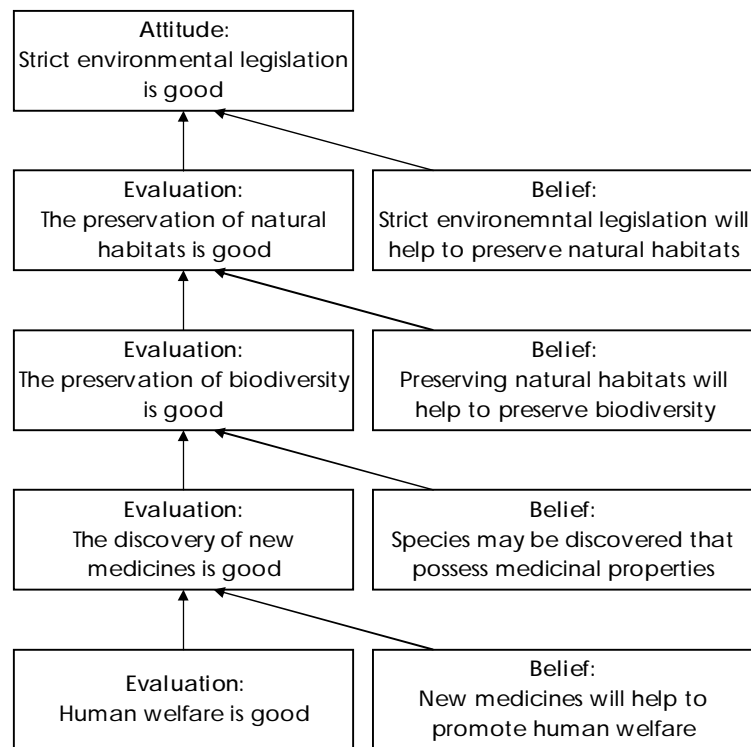


Figure 5.6 A chain of evaluations underlying an attitude

In this chain, each evaluation is derived from a *belief* that is combined with *another evaluation* – with the exception of the positive evaluation attached to human welfare. In this particular constellation of evaluations and beliefs, human welfare is depicted as an *end in itself*, while new medicines, biodiversity, the preservation of natural habitats and environmental legislation are regarded as means to achieve this end. It may therefore be appropriate to distinguish between *fundamental values* (things that are valued or rejected for their own sake, such as good health, ill health, death, love, happiness, etc.) and *derived values*, or *preferences* (things that are valued or rejected because they are believed to bring about things that are good or bad).

Similar chains could be constructed to explain the origins of a person's beliefs. It was mentioned above that my belief in the efficacy of environmental legislation might be based on information received from a trusted source. Thus, the belief is founded on the experience of being told about the effect of environmental legislation, combined with a belief in the reliability of my source. This belief, in turn, might be based on prior experiences in which information provided by this particular source turned out to be trustworthy.

Just as the chain of evaluation must be rooted in fundamental values (things that are regarded as good or bad for their own sake), so a person's chain of beliefs can (in theory) be traced to fundamental premises that are not rooted in experience or in other beliefs. Bateson (2000) employed the term "*epistemology*" to denote such basic premises. In other words, a person's epistemology denotes fundamental attributes of the way he or she interprets information about the world. My epistemology incorporates my basic premises regarding the nature of knowledge – what counts as evidence, what types of experience I regard as valid, whether I insist that sensory experience is reliable or that we only experience that which we already think we know, etc. "Seeing is believing. But faith is in believing that seeing is believing" (Bateson & Bateson, 1987, p. 96). Aspects of one's epistemology may also include whether one regards science as a reliable source of knowledge about the world, or whether one gives precedence to the pronouncements of Scripture or tradition. The relationships among attitudes, beliefs and their underlying assumptions are explored in greater detail in Section 7.1.

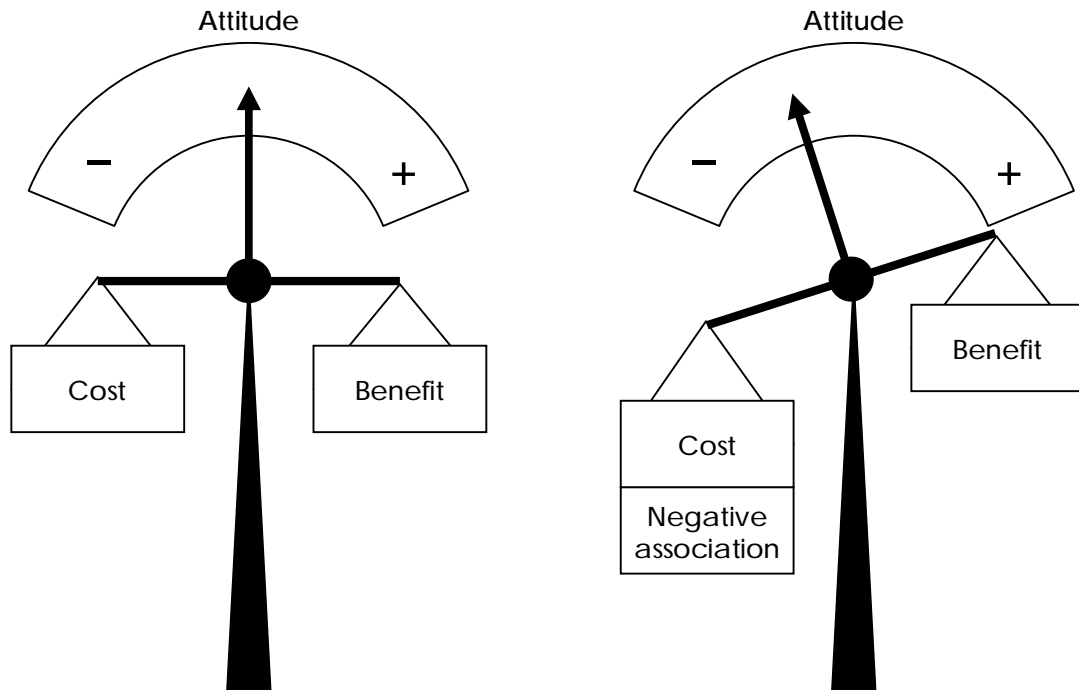
### 5.2.6 Theories of attitude formation and change

The foregoing discussion of the relationship between attitudes, beliefs, preferences and epistemology suggests that attitudes are always the product of careful deliberation. However, empirical evidence has shown that this is not necessarily the case. Attitudes are often regulated by processes that occur outside the scope of conscious reflection, and the outcomes of such processes sometimes fail the acid test of logic. Two contrasting theories of attitude formation and change are discussed below: *conditioning theory* and the theory of *cognitive dissonance*.

#### a) *Conditioning theory*

The first theoretical model to explain attitude formation and change was Hovland, Janis and Kelley's (1953) *learning theory model*, which is based on the theory of classical conditioning (see Section 5.2.4 above). The model states that attitudes are formed primarily through *association*. Positive or negative associations with an object or activity might form if it is accompanied or followed by pleasant or unpleasant experiences – even if those experiences are not causally related to the activity. For example, if one becomes ill shortly

after eating a certain type of food, one is likely to develop an aversion to that food, even if it did not play any role in causing the illness. Advertisers often rely on the creation of positive association with products to boost sales (Grossman & Till, 1998). This conception of attitude formation is graphically depicted in the figure below.



**Figure 5.7 Conditioning theory of attitude change**

As this figure shows, one's attitude toward a given object may depend on the positive attributes (benefits) and negative attributes (costs) one believes to be associated with that object. If these costs and benefits weigh equally heavy, one's attitude to the object in question is likely to be neutral. However, if events occur that lead one to form negative connotations with the object, this experience is likely to tip the scales in the negative direction.

**b) The theory of cognitive dissonance**

Whereas conditioning theory assumes that attitudes are formed on the basis of experience, and that these may then influence future action, the *theory of cognitive dissonance* states that the relationship between behaviour and attitudes is sometimes reversed. In some instances, behaviour sometimes *comes first*, so that we mould our attitudes to harmonise with our actions (Festinger, 1957, cited in Sternberg, 2001).

Cognitive dissonance may be defined as an unpleasant psychological state arising when one's attitudes are incompatible with one another or with one's behaviour. Individuals are motivated to reduce cognitive dissonance – either by altering their behaviour or, if that is not feasible, by adjusting their attitudes. For instance, if one is somehow induced to engage in behaviour for which the costs outweigh the benefits, one might reduce cognitive dissonance by improving one's attitude towards that behaviour (Aronson & Mills, 1959, cited in Weiten, 2001). This phenomenon is illustrated in the figure below.

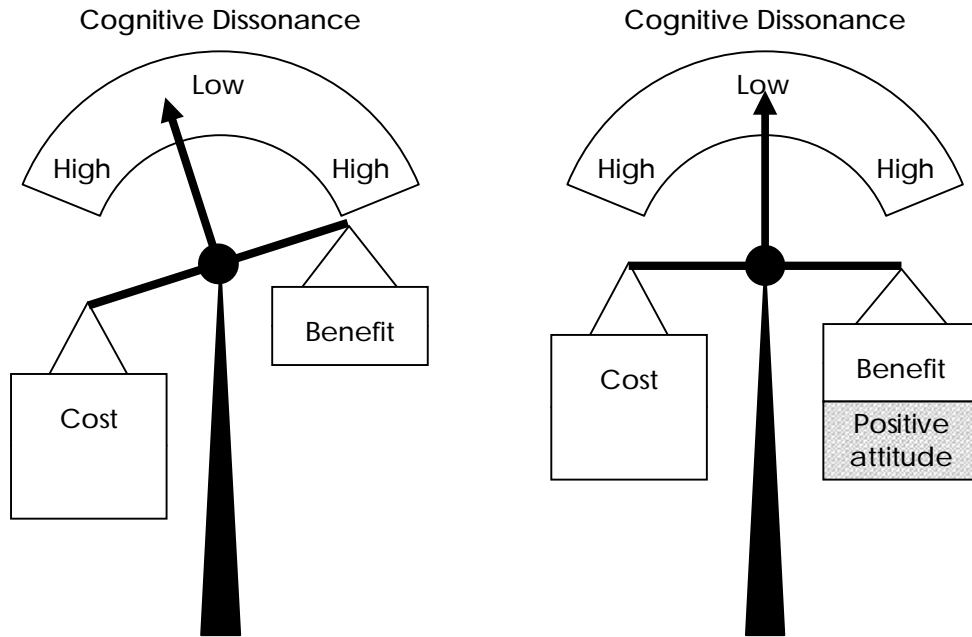


Figure 5.8 The theory of cognitive dissonance

An important corollary of the theory of cognitive dissonance is the so-called *over-justification effect*, in terms of which an “underserved” reward for an action might lead to a *negative* evaluation of that action. The explanation for this effect is that a situation in which benefits outweigh costs – just like one in which costs outweigh benefits – produces cognitive dissonance, and is therefore experienced as unpleasant (Tybout & Scott, 1983). As the figure below shows, a negative attitude is therefore produced as a “counterbalance” to reduce dissonance.

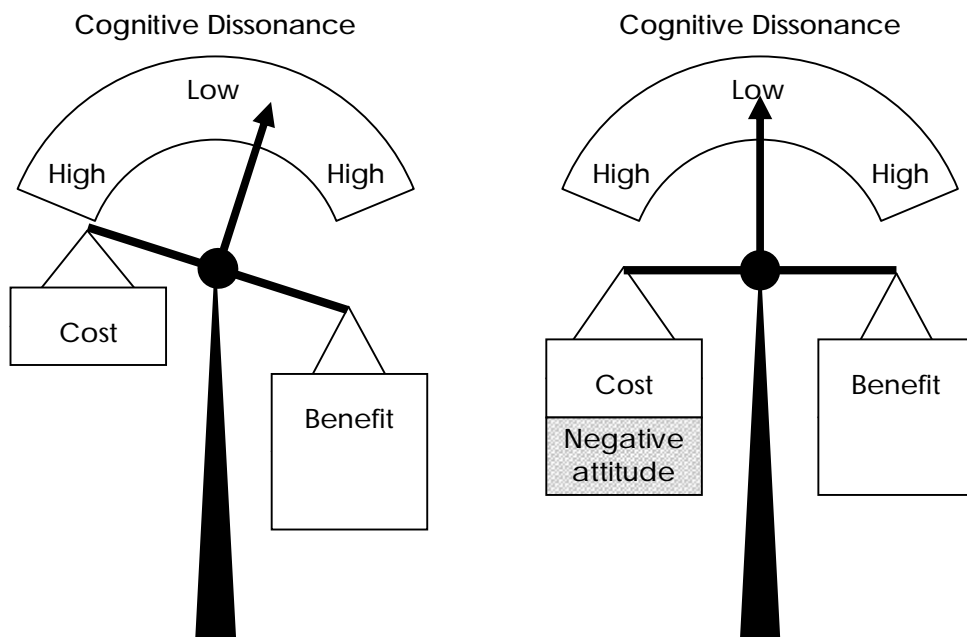


Figure 5.9 The over-justification effect

The predictions of the theory of cognitive dissonance clearly contradict those of conditioning theory, which posits that a reward will create positive associations with an action or object, and therefore necessarily *improve* a person’s attitude toward it. Which of these theories is right? Research shows that it depends on circumstances: attitudes that have not yet been strongly formed (in other words, those that are still flexible) are more likely to be swayed by cognitive dissonance than long-standing, well-established attitudes (Tybout, Sternthal, & Calder, 1983).

### 5.2.7 Determinants of behaviour

It was mentioned earlier that research on attitudes derives part of its importance from the fact that attitudes may serve as indicators or predictors of *behaviour*. The link between attitudes and behaviour has also been the subject of a significant amount of research (Weiten, 2001). An influential theory in this regard is the *theory of planned behaviour*, which is outlined below.

#### a) The theory of planned behaviour

The theory of planned behaviour was developed in the 1980s by Fishbein and Ajzen (Ajzen, 1991; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). The main elements of their theory are depicted in the figure below.

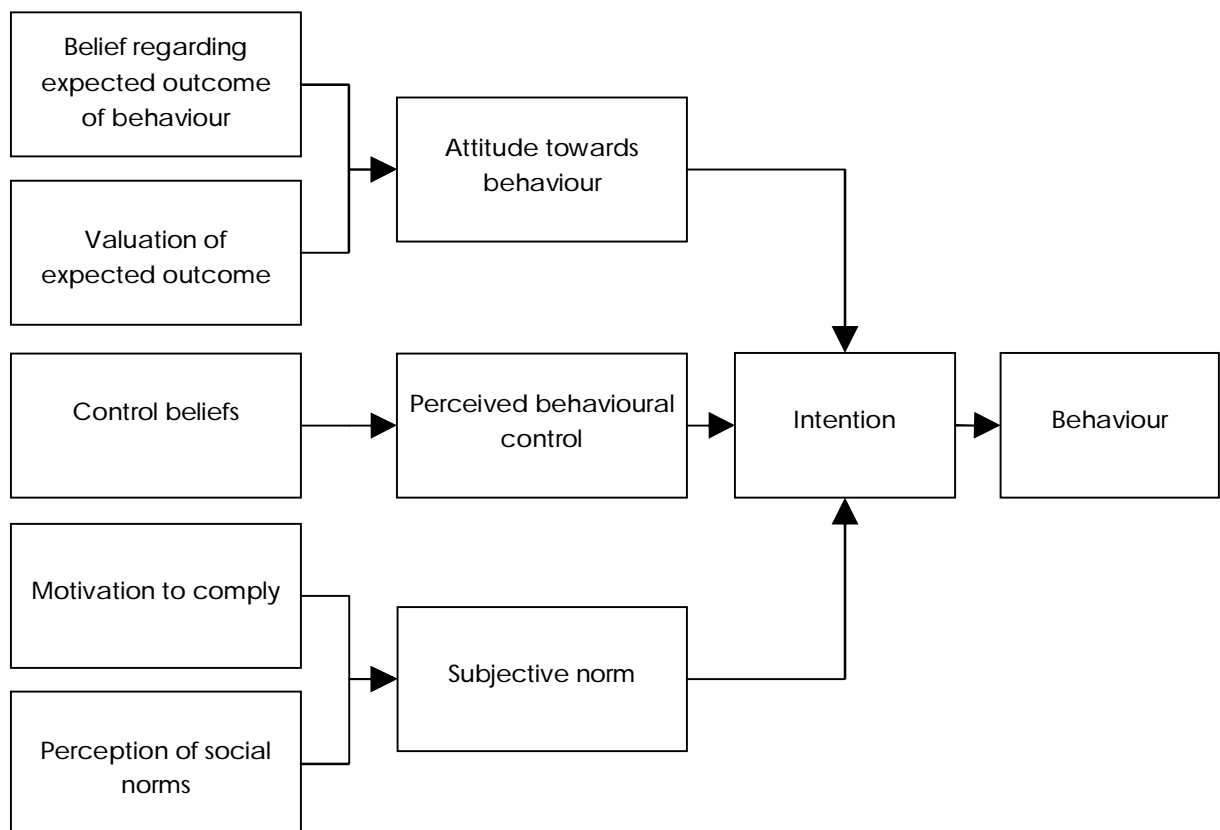


Figure 5.10 The theory of planned behaviour

The theory of planned behaviour states that a person's behaviour can best be predicted from the *intention* to perform a given action. Such behavioural intentions, in turn, are shaped by the following factors:

- ✓ *Attitude toward the behaviour.* This variable denotes the extent to which performance of the behaviour is positively or negatively evaluated. A person's attitude toward a given behaviour is assumed to conform to the predictions of the expectancy-value model. In other words, it depends on a person's set of *beliefs* regarding the likely outcomes of the behaviour and his or her subjective evaluation of those expected outcomes.
- ✓ *Perceived behavioural control.* This variable denotes a person's perceptions of his or her ability to perform a given action. These perceptions are assumed to depend on the person's set of *accessible control beliefs* – in other words, beliefs about the presence of factors that may facilitate or impede execution of the action.
- ✓ *Subjective norm.* This variable refers to the perceived social pressure to engage or not to engage in an action. Subjective norms are assumed to depend on one's *perception of social norms* – in particular, one's beliefs regarding the expectations of important referent individuals such as parents, friends, spouse, colleagues, etc. – and one's motivation to comply with these expectations.

The theory of planned behaviour has received considerable empirical support (Stahlberg & Frey, 1992). However, this support was not immediately forthcoming. An initial surprise in research regarding the relationship between attitudes and behaviour was the discovery that attitudes are often actually very *poor* predictors of behaviour. Subsequently, it was discovered that the reason for this poor relationship was partly methodological: attitudes are often measured in very broad terms (e.g., "Do you regard conservation of the environment as important?"), while behaviour is measured very concretely (e.g. whether or not a person signs a petition to stop logging in rainforests). When attitudes and behaviour are assessed at the *same level of specificity*, the correlation between them increases significantly (Eagly & Chaiken, 1992).

Despite its success, the theory of planned behaviour has attracted its share of criticism. Some of these criticisms are grounded in empirical research. It has been found, for instance, that *habits* exert a direct influence on behaviour that is not mediated by social norms or attitudes as the theory of planned behaviour supposes (Bentler & Speckart, 1979, in Stahlberg & Frey, 1992). In Section 4.4.3, the phenomenon of habit formation was discussed as an instance of the *economics of flexibility*. Following Bateson, it was noted that "habits are notoriously rigid and their rigidity follows as a necessary corollary of their status in the hierarchy of adaptation. The very economy of trial and error which is achieved by habit formation is only possible because habits are comparatively 'hard programmed,' in the engineers' phrase. The economy consists precisely in not re-examining or rediscovering the premises of habit every time the habit is used" (Bateson, 2000, p. 274).

Other criticisms of the theory of planned behaviour pertain to its *cross-cultural validity*. According to De Mooij (1998), the theory is premised on an individualistic worldview that is characteristic of contemporary Western societies; it regards the individual as an autonomous entity that purposefully weighs the pros and cons of alternative decisions before taking action. She notes that not all cultures subscribe to such a worldview. In some societies, people "are more likely to prefer events to shape whatever actions are required,



to stand back from an event rather than attempt to control it by decision making" (Schaap & Van Steenberg, 2001, p. 11). Cultures may also differ in terms of the relative influence of individual attitudes and social norms on behaviour – a theme that is taken up again in Section 5.4.5 below.

### b) *Behaviour settings*

The theory of planned behaviour asserts that people's behaviour depends on their attitudes and beliefs regarding social norms, the probable consequences of actions and factors that might prevent one from adopting a particular course of action. However, everyday experience teaches that such detailed information is not always required if one wishes to know what people will do in a given context. Very often, knowledge of the *physical setting* provides a perfectly satisfactory indicator of behaviour. For instance, if I see a large number of people entering a film theatre, I do not need to distribute attitude questionnaires to predict that the vast majority of theatregoers will move down the aisles and take seats facing the screen.

This insight forms the basis of research and theory pertaining to *behaviour settings*. This term was coined by Roger Barker (1968) to denote "places (e.g. churches) or occasions (e.g. auctions) that evoke their own typical patterns of behavior" (Bell, Greene, Fisher, & Baum, 1996, p. 16). A behaviour setting therefore subsists in the reciprocal relationship between a physical milieu and "standing patterns" of behaviour that occur in this milieu. On the one hand, people within a behaviour setting act so as to maintain its physical structure. (Waiters in a restaurant serve food, clear tables, etc., while managers replace broken crockery and paying customers provide them with the financial resources to do so.) On the other hand, the physical structure constrains the behaviour of people within the setting. (The arrangement of tables and chairs determine where waiters walk, where customers sit, what food they can be served, etc.)

The notion of behaviour settings has been influential in *environmental psychology*, which is a branch of psychology that focuses on "relationships between behaviour and experience and the built and natural environments" (Bell et al., 1996, p. 6). Of particular relevance to the present study is the effect of behaviour settings on human *interaction* and *group dynamics*. Bell et al. (1996) have proposed a distinction between *sociopetal* settings (settings that bring people together and encourage interaction) and *sociofugal* settings (settings that tend to separate people from one another). An example of a sociopetal setting would be a lounge with seats facing one another; an example of a sociofugal setting would be a setting with straight rows of chairs, such as an airport or bus terminal.

Sociopetal and sociofugal settings have been found to differ significantly in terms of the degree and subjective quality of interaction they elicit among individuals. For instance, changing seating arrangements in a room so that people face one another tends to increase the amount of time people spend in conversation when they are in the room. It also tends to increase the probability that they will rate their interaction as satisfactory (Mehrabian & Diamond, 1971; Patterson, Kelly, Kodracki, & Wulf, 1979, cited in Bell et al., 1996).

## 5.3 THE INTERPERSONAL LEVEL

The previous section was devoted to the things that happen “inside people’s heads;” this section concentrates on the things that happen *between* people. It begins with a discussion of interpersonal *communication*. It may be argued that communication stands in the same relationship to other interpersonal phenomena as information processing stands to intrapsychic phenomena: just as information processing forms the basis of learning, attitude formation and the like, communication forms the basis of interpersonal relationships, persuasion and all other topics to be discussed on the following pages.

### 5.3.1 Communication

Bateson (2000) argued that, if one wishes to understand human communication, one should view it from the perspective of natural history. In other words, one should take into account the evolution of communication over time, and one should look for differences and similarities between the way humans communicate and the modes of communication employed by other species. The discussion offered below follows Bateson’s advice. It proceeds from the notion that communication can be characterised by asking two general questions:

- ✓ *How does the communication occur?*
- ✓ *What is the communication about?*

#### a) *The “How?” of communication*

Bateson (2000), Watzlawick et al. (1967) and others have suggested that all answers to the “How?” question can be classified into two broad categories: *analogue* and *digital* communication. These are terms borrowed from the field of engineering, and the difference between them may be defined as follows: in analogue communication there is some sort of continuity or resemblance between signifier and signified – between the message and what it is about. In digital communication this continuity is absent.

The Roman numerals “I”, “II” and “III” are simple examples of analogue communication: the number of vertical lines in the symbols corresponds to the magnitudes which these symbols represent. The Arabic numerals 0, 1, 2, 3, 4, ..., on the other hand, are examples of digital communication: “4” is not larger than “3.” The bared fangs of a dog, which denote the threat of an attack, are another example of analogue communication: the bared fangs *resemble* the attack that might follow. Compare this with the skull-and-crossbones on the flag of a pirate ship, which also denotes the threat of an attack, but is an example of digital communication, since the symbol does not resemble (except perhaps in a very indirect way) that which it signifies.

#### b) *The “About what?” of communication*

Bateson (2000) also argued that all answers to the “About what?” question can be classified into two broad categories: communication about *relationships* and communication about *things*. A cat asks for milk by imitating the sounds that a young kitten would make to its mother. In so doing, it proposes a certain kind of *relationship*: it reminds its owner that it is as dependent upon him or her for sustenance as a kitten is upon its mother. The most accurate English translation of the cat’s message would therefore not be “Milk! Milk!” but “Mama!

Mama!” or “Dependency! Dependency!” It is up to the cat’s owner to make the deduction that what the animal wants, is *milk*. Two hunters planning a kill or two executives discussing a business deal, on the other hand, are communicating about *things*. The relationship between them (whether it be friendship, trust, mistrust, etc.) is temporarily forgotten in favour of the task at hand.

The distinction between communication about relationships and communication about things is closely akin to the distinction between *emotion* and *reason*. If the truism that “relationships are matters of the heart” is to be believed, then, by the same token, “things” are matters of the intellect. It is, of course, possible to reason about relationships, but such mental activity is one step removed from the *experience* of the relationship. To know *about* someone is not the same as *knowing* someone.

### c) *Human and other mammalian communication*

A third point made by Bateson is that most mammalian communication is *analogue* and is about *relationships*. The baring of fangs mentioned above is a case in point. The attack that it refers to is not a “thing” but a certain type of relationship between two animals. The same is true of the kitten-like sounds of a hungry cat.

*Human language* represents an important deviation from this rule, however. It differs from the communication of other mammals on at least two counts: first, it is primarily *digital*. Except in cases of onomatopoeia, the sounds of words do not imitate the things they denote (Deacon, 1997). Second, language offers the opportunity to communicate about *things* as well as about relationships. A human child, unlike a cat, is able to convey the message “I want milk” in unambiguous terms.

This does not mean that the new, digital method of communicating about things supplanted the older, analogue method of communicating about relationships; rather, it grew up alongside it as a sapling might grow up in the shadow of an adult tree. It also does not mean that human beings *never* use digital communication for communicating about relationships. However, human beings still communicate far more effectively and reliably about relationships through non-verbal signals than through words (Trenholm & Jensen, 1992), as is illustrated by the following hypothetical scenario:

When boy says to girl, “I love you,” he is using words [digital communication] to convey that which is more convincingly conveyed by his tone of voice and his movements [analogue communication]; and the girl, if she has any sense, will pay more attention to those accompanying signs than to the words. (Bateson, 2000, p. 412)

One reason why tone-of-voice and body movements are more trusted indicators of relationship than words is because they are *semi-voluntary*. We may lie with our lips, but our bodies tend to betray us, because the signals communicated by the latter are only partially under our conscious control. We may also respond to the non-verbal communication of others without our being fully aware of it. Thus, the boy and girl in the aforementioned scenario may be visualised as conducting two simultaneous conversations – one digital, verbal and conscious, the other analogue, non-verbal and semi-conscious.

Bateson argued that such subliminal “conversations” about relationships are more or less ubiquitous in human affairs – even when the ostensible objective of communication is to

discuss *things* or impersonal matters. For instance, “if A says to B, ‘The plane is scheduled to leave at 6:30,’ B rarely accepts this remark as simply and solely a statement of fact about the plane. More often he devotes a few neurons to the question, ‘What does A’s telling me this indicate for my relationship to A?’ Our mammalian ancestry is very near the surface, despite recently acquired linguistic tricks” (Bateson, 2000, p. 367).

#### d) *Communication and logical types*

It was pointed out in Section 4.3.2 that instances of communication can often be distinguished from one another in terms of their *logical type*. The difference between the communicative function of a map and that of its accompanying legend was used as an example: while the map tells us something about a particular territory, the legend tells us how the map should be interpreted. Hence, the information communicated by a legend belongs to a higher logical type than the information conveyed by the map. The legend constitutes a *meta-message* in relation to the map.

It turns out that the distinction between verbal, digital communication about *things* and non-verbal, analogue communication about *relationships* closely corresponds to the distinction between messages and meta-messages (Perold, 2001). For instance, I might direct a critical remark at you, but my facial expression while delivering the remark might convey the meta-message, “I am not being serious” or “Do not take my remark personally.” This meta-message reassures you that the positive relationship between us remains intact despite the critical remark.

### 5.3.2 Attribution

Non-verbal meta-messages therefore constitute an important source of information about “matters of the heart” – about the motives, intentions, state of mind, etc. of other people. However, they do not represent the only source of such information: we also frequently make deductions about the inner world of others from their *actions*. *Attribution theory* refers to a set of psychological constructs and models that have been developed to explain how people draw inferences from one another’s behaviour.

An *attribution* may be defined as a “mental explanation that points to the cause of a person’s behaviour” (Sternberg, 2001, p. 433). The origins of attribution theory may be traced to Fritz Heider (1958, in Sternberg, 2001). Heider pointed out that people make two basic types of attributions:

- ✓ *Internal* (or personal) attributions, in which the causes of a person’s behaviour are identified as being internal to the person performing the behaviour (for instance, “he got into the fight because he is aggressive”); and
- ✓ *External* (or situational) attributions, in which the person’s behaviour is ascribed to factors residing in the situation, the environment or preceding events (for example, “he got into the fight because he was provoked”)

How do people decide whether to attribute a particular action by an individual to internal or external factors? Kelley (1973) argued that they use three types of information:

- ✓ *Consensus*. If we believe that many *other* people behave in the same manner under similar circumstances, we are likely to attribute the individual’s behaviour to *external* factors.

- ✓ *Distinctiveness*. If we perceive that the individual in question only behaves in this way toward a particular person or target, we are likely to conclude that the cause of the behaviour lies within the target, not the actor. In other words, we are again likely to make an *external* attribution.
- ✓ *Consistency*. If we perceive that the person acts in a similar way in other situations or at other times, we are likely to conclude that the *person* rather, than external factors, is responsible for his or her behaviour. In other words, consistency of behaviour by a given actor leads us to make *internal* attributions regarding his or her actions.

Information about consensus, distinctiveness and consistency may therefore be regarded as *meta-messages*: they “tell” us how we should interpret the behaviour of others.

An important finding of research on attribution is that people do not weigh all available evidence every time they make an attribution. Instead, we tend to rely on mental *heuristics* – and these sometimes lead to errors or biases in our thinking regarding the causes of behaviour. One of the most common attribution biases is the *fundamental attribution error* (Ross & Fletcher, 1985). This term denotes the common human tendency to overemphasise *internal causes* and personal responsibility when attempting to explain the behaviour of others. When explaining our own behaviour, on the other hand, we are more prone to make *external* attributions.

It is interesting to note that Heider’s (1958) distinction between internal and external attributions closely resembles Bateson’s (2000) distinction between communication about relationships and communication about things. Just as we often have to decide whether a person’s actions reflect attributes of the situation or that person’s inner disposition, we are frequently faced with the question of whether a given statement is primarily a message about external circumstances or an indication about how the speaker views our relationship. If you tell me that the plane leaves at 11:30, for instance, are you merely informing me of the flight schedule, or are you (also) signalling your irritation with my tardiness? Just as we often attribute a person’s actions to internal causes when in fact the situation is to blame, we also sometimes misinterpret a message as being about a relationship when in fact it was intended as a neutral statement of fact.

### 5.3.3 Interpersonal relationships

The foregoing discussion of communication about relationship omitted an important question: *What exactly do we mean by the term “relationship”?* Bateson argued that this question is not trivial, and that it has been the target of a great deal of muddle-headed thinking in the behavioural sciences. “Psychologists commonly speak as if the abstractions of relationship (‘dependency,’ ‘hostility,’ ‘love,’ etc.) were real things which are to be described or ‘expressed’ by messages. This is epistemology backwards: in truth, the messages constitute the relationship, and words like ‘dependency’ are verbally coded descriptions of patterns immanent in the combination of exchanged messages” (Bateson, 2000, p. 275).

The cause of this confusion, according to Bateson, is an error in logical typing – a failure to distinguish between the characteristics of a *relationship* and the characteristics of the *individuals* whose interaction constitutes the relationship. The relationship is an *emergent property* of this interaction; it cannot be reduced to properties of individuals. Notwithstanding this fact, many of the terms commonly used to describe individuals actually



denote attributes of relationships. “No man is ‘resourceful’ or ‘dependent’ or ‘fatalistic’ in a vacuum. His characteristic, whatever it be, is not his but is rather a characteristic of what goes on between him and something (or somebody) else” (Bateson, 2000, p. 298). “If you want to talk about, say, ‘pride,’ you must talk about two persons or two groups and what happens between them. A is admired by B; B’s admiration is conditional and may turn to contempt. And so on. You can then define a particular species of pride by reference to a particular pattern of interaction” (Bateson, 1979, p. 147).

To Bateson, “relationship is always a product of double description. It is correct (and a great improvement) to begin to think of the two parties to the interaction as two eyes, each giving a monocular view of what goes on and, together, giving a binocular view in depth. This double view is the relationship” (Bateson, 1979, p. 146)

#### a) *Symmetrical and complementary relationships*

Insisting on such a “double description” view of relationships brings with it its own set of problems, however. One of these problems involves the need to develop an appropriate *terminology* to describe various types of relationships. Simply borrowing the vocabulary used to describe the actions of individuals will not do; that would be like borrowing the terms of chemistry to develop a taxonomy of living organisms.

Bateson approached this problem by noting that, in a system composed of “organisms capable of complex learning and communication, the total system operates rapidly toward either uniformity or toward systematic differentiation – an increase of simplicity – which we call organization. If there are differences between the impacting entities, these differences will undergo change, either in the direction of reducing the differences, or in the direction of achieving a mutual fitting or complementarity” (Bateson, 2000, p. 233). Based on this observation, he postulated that there are two basic varieties of binary relationships:

- ✓ *Symmetrical relationships*. These are relationships in which “the behaviors of A and B are regarded (by A and B) as *similar* and are linked so that more of the given behavior by A stimulates more of it in B, and vice versa” (Bateson, 2000, p. 323). Examples of symmetrical relationships include friendship, rivalry, mutual emulation, “keeping up with the Joneses,” boxing matches and the like.
- ✓ *Complementary relationships*. These are relationships in which “the behaviors of A and B are *dissimilar* but mutually fit together ... and the behaviors are linked so that more of A’s behavior stimulates more of B’s fitting behavior” (Bateson, 2000, p. 323). An example of a complementary relationship is one in which one person regularly exerts authority over another, and where the other person regularly submits to this authority (in other words, a relationship characterised by *dominance-submission*). Another example is a relationship in which one person depends on, and receives, help from another person (in other words, *nurturance-dependence*). A third example of complementarity is the type of relationship that usually exists between a performer and an audience – *exhibitionism-spectatorship*. *Sado-masochism* is also an instance of a complementary relationship.

Based on this simple binary classification, it is possible to develop an extensive taxonomy of relationships. For example, a single relationship might consist of a combination of symmetrical and complementary motifs. These motifs may also occur at different levels of logical typing. For instance, “A and B may compete in gift-giving, thus superimposing a



larger symmetrical frame upon primarily complementary behaviors" (Bateson, 2000, p. 323). A parent and child might also engage in symmetrical play or conflict, and so on.

b) *Stability and change in relationships*

Everyday experience teaches that, although interpersonal relationships can change over time (strangers can become friends, lovers may become estranged, etc.), they can also sometimes be extremely resistant to change. Some relationships can remain relatively unaltered for extended periods of time despite significant changes in external circumstances or in the persons involved in the relationship. (Old enmities can persist long after the original cause of the quarrel has been forgotten; love can endure from youth into old age, etc.) Sometimes, relationships even resist attempts by the people involved in them to bring about change.

Bateson identified three general trends regarding the propensity of relationships to change or to resist change. First, the pattern of interaction in the relationship can be *self-amplifying*. Consider, for example, a competitive relationship between A and B: each tries to outdo the other; consequently, A's efforts spur B on to greater heights – which, in turn, inspire A to try even harder to attain victory, and so on. Bateson coined the term "schismogenesis" to describe such mutual reinforcement in the context of a relationship. If the process of schismogenesis is compared with the concept of *feedback* (see Section 4.2.3), it becomes evident that a schismogenic relationship is nothing other than a *positive feedback loop* – it refers to a relationship in "runaway." Both symmetrical and complementary relationships may be swept up into such runaway cycles. "Symmetrical struggles and armaments races may, in the current phrase, 'escalate'; and the normal pattern of succoring-dependency between parent and child may become monstrous" (Bateson, 2000, p. 324).

A second general characteristic of relationships is that they may become *habitual*. It was pointed out in Section 4.4.3 that habit formation represents an instance of the economics of flexibility: if a particular way of responding to stimuli (or to another person) is consistently successful, it tends to become "hardwired" or delegated to less flexible parts of the mind. This has the advantage of freeing up cognitive resources to deal with other matters. However, it also poses the risk that the habit will persist even when it is no longer appropriate.

Watzlawick et al. (1967) conducted an analysis of Edward Albee's play, "*Who's afraid of Virginia Woolf?*" that vividly demonstrates the destructive potential inherent in some types of relationships when they become habitual. The play's two main characters, middle-aged history professor George and his wife Martha, have a relationship that is characterised by endlessly repetitive cycles of symmetrical schismogenesis. Each party seems intent on being "one up" on the other, so that a relatively innocuous statement by the one might elicit an (active or passive) aggressive response from the other. This response prompts the first party to react still more aggressively, and so on. Consider the following extract from the first act (Albee, 1965, p. 11):

MARTHA [looks about the room. Imitates Bette Davis]: What a dump. Hey, what's that from? 'What a dump!'

GEORGE: How would I know what...

MARTHA: Aw, come on! What's it from? You know...

GEORGE: ... Martha...

MARTHA: WHAT'S IT FROM, FOR CHRIST'S SAKE?

GEORGE [wearily]: What's what from?

MARTHA: I just told you; I just did it. 'What a dump!' Hunh? What's that from?

GEORGE: I haven't the faintest idea what...

MARTHA: Dumbbell! It's from some goddamn Bette Davis picture... some goddamn Warner Brothers epic...

GEORGE: I can't remember all the pictures that...

MARTHA: Nobody's asking you to remember every single goddamn Warner Brothers epic... just one! One single little epic!

The conflict between them continues to escalate until it reaches a climax. Then, after a brief lull, the entire process repeats itself. Neither party appears to be able to break the pattern. In fact, they scarcely seem to be aware of the fact that they repeatedly create conflicts out of nothing.

Bateson suggested that the habit-forming effects of relationships on individual behaviour may extend beyond the creation of a propensity to act toward another person in a particular way. Very often, we do not just acquire the habit of acting out one end of a relationship motif; we also acquire the habit of viewing and responding to the world in terms of a particular way of "fitting together." To substantiate his argument, Bateson invoked psychoanalytic concepts such as projection, reaction formation and the like. *Projection* may be defined as an unconscious defence mechanism that "leads us to attribute our own unacceptable and possibly dangerous thoughts or impulses to another person. ... An illustration of projection can be found in the instance of a person who becomes obsessed with thoughts of his or her partner's infidelity as a way of defending against sexual impulses toward others that he or she finds unacceptable" (Sternberg, 2001, p. 484). *Reaction formation*, on the other hand, is a defence mechanism that "transforms an unacceptable impulse or thought into its opposite. ... For instance, we may inwardly be jealous of a neighbour's new luxury car and wish we had such a vehicle, but consciously we decide that spending so much on a mere car is incredibly superficial and materialistic" (Sternberg, 2001, p. 484).

According to Bateson, the existence of such phenomena forces us to regard the bipolar patterns of complementary relationship motifs "as unitary within the individual. If we know that an individual is trained in overt expression of one-half of one of these patterns, e.g., in dominance behavior, we can predict ... that the seeds of the other half – submission – are simultaneously sown in his personality. We have to think of the individual, in fact, as trained in dominance-submission, not in either dominance or submission" (Bateson, 2000, p. 91).

A third general characteristic common to many relationships is that the premises on which they are based may be *self-validating*. Bateson (1979, p. 148) illustrated this idea with the following example: "Pride feeds on admiration. But because the admiration is conditional – and the proud man fears the contempt of the other – it follows that there is nothing which the other can do to diminish the pride. If he shows contempt, he equally reinforces the pride." Thus, even if one party attempts to change the relationship by adopting a different style of interaction, the other party might wrongly perceive the new behaviour as simply being a continuation of the established pattern.

The following section is devoted to a discussion of a particular type of relationship: *trust*. The inclusion of this topic is motivated by two reasons. First, trust (or the absence of trust) plays a central role in shaping the course and outcomes of any *public participation process* – a notion that is explored in greater detail in Section 6.3.4. Second, the manner in which trust is often described in psychological literature illustrates many of Bateson’s arguments. For instance, it demonstrates that attempts to define relationship dynamics may fall prey to *reductionism* and *errors in logical typing*, so that the characteristics of the relationship are confused with the characteristics of individuals.

### c) *Trust*

Conceptions of trust found in scientific literature may be roughly divided into two broad categories: an “*instrumental*” view and a contrasting, more *holistic* view. The instrumental view regards trust as the outcome of a *subjective probability calculation of risk* (Bradach & Eccles, 1990; Mayer, Davis, & Schoorman, 1995). Part of this calculation involves evaluating the other party in terms of his or her *trustworthiness* (Brenkert, 1998). Perceptions of trustworthiness may be influenced by knowledge of the person’s background, ethnicity or previous behaviour, since such knowledge provides a basis for predicting the person’s future behaviour (Zucker, 1986). The decision to trust someone also depends on the perceived probability that one stands to gain something from such an action.

The instrumental view of trust therefore regards both parties in the relationship as being governed by the “market logic” of informed self-interest. Although trust entails an element of uncertainty, each party is assumed to adopt a course of action that he or she regards as most likely to yield the maximum benefit. Another characteristic of this view is that it regards trust as something located “in the head” of an individual rather than as a pattern of interaction *between* individuals. This “something” may be *expressed* in behaviour – for instance, by the act of making oneself vulnerable to the other party.

The *holistic* view, on the other hand, rejects the analogy between trust and a market transaction. Giddens (1990, p. 33), for instance, insists that the conception of trust as a form of risk assessment is misleading, since “all trust is in a certain sense blind trust.” Anheier and Kendall (2000, p. 8) also contend that trust is “socially embedded, supported by a normative infrastructure whose distinctiveness from the market is the very aspect which facilitates trust. It is the *absence* of market logic that allows trust to evolve.” Another characteristic of the holistic view of trust is that it conceives of trustworthiness in broader terms than simply the intent of not harming another – it also entails *caring*, or “a positive moral responsibility” (Soule, 1998, p. 249).

If the holistic view of trust is translated into the terminology of interpersonal relationships introduced above, it therefore emerges as a *symmetrical pattern of interaction*. Each party in the relationship takes the interest of the other to heart, and acts on faith that the other party does the same. If this symmetry is broken, trust no longer forms part of the relationship, as “one-sided trust is always unstable” (Dienel & Renn, 1995, p. 126).

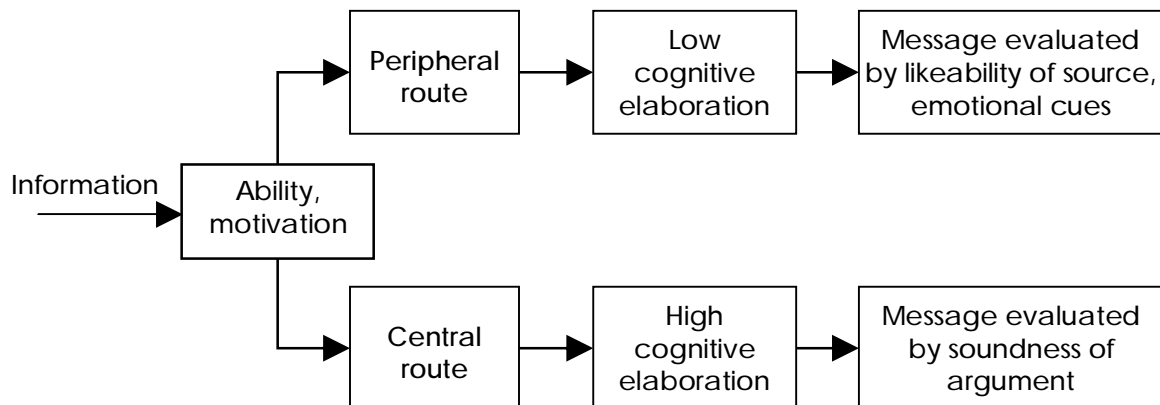
The types of relationships that exist among people play a role in determining the types of *influence* they are able to exert over one another. The following two sections are devoted to varieties of interpersonal influence. Section 5.3.4 below discusses the phenomenon of *persuasion*, or deliberate attempts by people to change the attitudes of others. Following this, Section 5.3.5 explores the more general concept of *power*.

### 5.3.4 Persuasion

The probability that an attempt at persuasion will succeed depends on the type of persuasive *strategy* being employed, as well as on the *context* in which this strategy is implemented. Petty and Cacioppo (1986; 1986) proposed the so-called *elaboration likelihood model* to explain how these two sets of factors interact. The elaboration likelihood model asserts that there are two basic “routes” to persuasion:

- ✓ The *central* route, which is taken when people carefully ponder the content and logic of persuasive messages;
- ✓ The *peripheral* route, which is taken when persuasion depends on non-message factors, such as the attractiveness of the source or conditioned emotional reactions.

As the figure below shows, the central route involves thinking about (or cognitively elaborating on) the content of persuasive messages. The peripheral route, by contrast, involves less careful thought and relies more on cognitive heuristics. Which route is employed will depend on one’s ability and motivation to attend to a message: if there are many distractions diverting one’s attention, if time is limited or if the topic is something one does not regard as important, the message is more likely to be processed through the peripheral than through the central route.



**Figure 5.11 The elaboration likelihood model**

The effectiveness of a message in bringing about attitude change will therefore depend on the circumstances: a rational message (suited for central processing) will work best when circumstances encourage cognitive elaboration, while a more emotional message (suited for peripheral processing) will work best when distractions, etc. inhibit cognitive elaboration. Although both routes can lead to persuasion, the elaboration likelihood model predicts that persuasion through the central route is more likely to lead to durable attitude change. Attitudes formed through the central route are also more likely to be reflected in subsequent behaviour than those formed through the peripheral route.

### 5.3.5 Power

The term “power” may be defined as follows: “A has power over B to the extent that he can get B to do something that B would not otherwise do” (Dahl, 1957, p. 202, cited in Orford,

1997). Power can take a variety of forms. French and Raven (1960) developed a typology of *power bases* that groups or individuals might use to influence the behaviour of others:

- ✓ *Reward power*, which refers to the ability to influence others' behaviour by offering favours or money;
- ✓ *Punishment power*, which entails the ability to exert influence through the threat of unpleasant consequences;
- ✓ *Legitimate power*, which refers to influence grounded in shared social norms, such as the power of a religious figure to command obedience even in the absence of reward or punishment;
- ✓ *Expert power*, which is based on superior knowledge or expertise regarding a relevant subject, such as the influence of a doctor offering medical advice; and
- ✓ *Referent power*, which refers to influence rooted in interpersonal relationships, emotional attachment or personal charisma.

This conception of power has been criticised from a number of angles, however. Bachrach and Baratz (1962), for instance, have noted that power might also be exercised *covertly*. Instead of influencing decision-making through any of the five power bases described above, those in power might simply “keep certain items off the agenda” so that the occasion for others to exert their influence never arises. They noted that power might also act in even more profound and subtle ways, shaping people's very desires and attitudes. Thus, *the most potent forms of power are those of which one is not even aware*.

A second criticism that may be levelled against French and Raven's typology of power bases is that it ignores the power inherent in *numbers*. A group may exert power over an individual, not because it possesses superior knowledge or the ability to offer rewards or punishment, but simply because *it is a group*. A significant amount of psychological research has focused on the phenomenon of *conformity*, which may be defined as “the process in which an individual shapes his or her behavior to make it consistent with the norms of the group” (Weiten, 2001, p. 455). Experimental evidence offered by (Asch, 1956, in Weiten, 2001) suggests that people often feel overwhelming pressure to conform to group opinion, especially if all other members of the group are unanimous. The amount of pressure depends on the size of the group and on its cohesiveness.

Bateson has taken these criticisms a step further by questioning the very notion of power as a legitimate psychological construct. He pointed out that behaviour described as the “exercise of power” actually constitutes one-half of a *complementary relationship*. In any relationship, the behaviour of one party is partly a response to the behaviour of the other. Thus, each party may be viewed as exerting *influence* on the other. The logical consequence is that, while A might regard him- or herself as exercising power over B, B is in fact also exercising power over A.

This line of reasoning led Bateson to conclude that “perhaps there is no such thing as unilateral power. After all, the man ‘in power’ depends on receiving information all the time from outside. He *responds* to that information just as much as he ‘causes’ things to happen. It [was] not possible for Goebbels to control the public opinion of Germany because in order to do so he must have spies or legmen or public opinion polls to tell him what the Germans are thinking. He must then trim what he says to this information; and then again find out how they are responding. It is an interaction, not a lineal situation” (Bateson, 2000, p. 486).

He conceded, however that “the *myth* of power is ... a very powerful myth and probably most people in this world more or less believe in it. It is a myth which, if everybody believes in it, becomes to that extent self-validating.”

## 5.4 THE SOCIAL LEVEL

It was mentioned above that groups often induce *conformity* in their members. This section offers a more detailed discussion of the possible effects of groups on individual behaviour, the interaction of individuals in small-group settings and the types of relationships that might exist *between* groups. It also gives examples of variables that emerge from standing patterns of interaction in *large groups*, and that are often denoted by the label “culture.”

### 5.4.1 Group dynamics

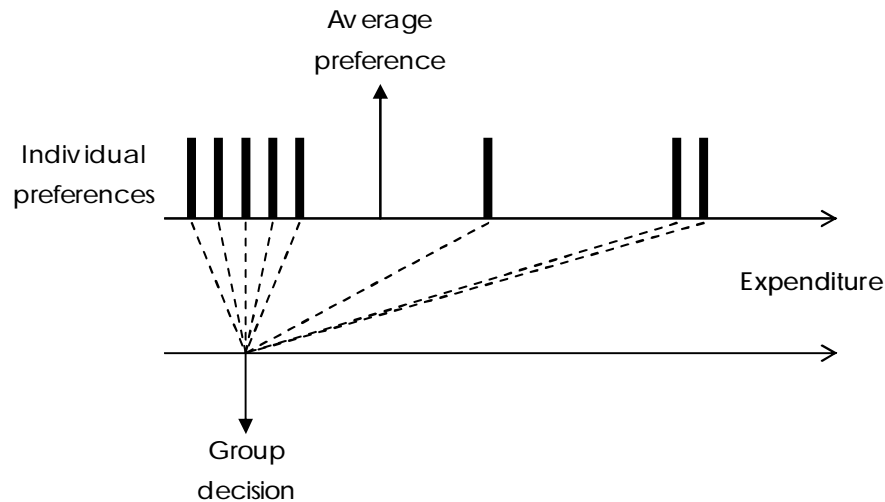
The processes by which groups arrive at *decisions* are probably among the psychosocial phenomena that have the most direct bearing on public participation. Their relevance to this field stems from the fact that every public participation process involves the creation of a group whose *raison d'etre* is to make (or at least to influence) certain decisions. The following section presents a few research findings pertaining to group decision-making.

#### a) *Group decision-making*

One of the more consistent and robust findings of research on group decision-making process is that *sharedness* plays a key role in shaping such processes (Tindale et al., 2003). Sharedness may be defined as “the degree to which information, ideas, or cognitive processes are shared or are being shared among the group members” (Hinsz, Tindale, & Vollrath, 1997, p. 43). The notion of sharedness may be explained by the following hypothetical scenario. A group is tasked with deciding how much money should be spent on a particular cause. Initially, group members are divided in opinion: some are in favour of spending large amounts of money, while others would prefer spending nothing at all. The differing individuals have to reach some kind of *compromise* in order to arrive at a single figure that will determine actual expenditure. To predict the figure that will emerge from this compromise, one might calculate the average of all group members’ preferred expenditure.

Numerous experimental studies have shown, however, that such a prediction is unlikely to be accurate. The group decision will most probably reflect the position initially occupied by the *majority of group members* rather than the average preference of the entire group. In other words, the opinion that prevails is the opinion that is most widely *shared* by group members before deliberation begins. The group’s decision is largely shaped by those members who are similar to one another (or close to one another on the continuum denoting their preferences), while discrepant preferences carry little if any weight (Tindale et al., 2003). This principle is illustrated in the figure below.





**Figure 5.12** The effect of sharedness of group decision-making

One explanation of the effect of sharedness on group decision-making refers to the fact that people’s opinions are based on the information they have at their disposal. Hence, differences in opinion might occur because different individuals have been exposed to different pieces of information. If, during group discussion, they are confronted with information they did not previously possess, they might therefore revise their opinion. The probability that this will occur – in other words, the probability that a given piece of information will be mentioned during the discussion – depends on the number of group members that initially possessed that piece of information. Thus, information that is more widely shared has a greater chance of entering into the group’s deliberations and influencing the preferences of group members (Tindale et al., 2003).

There is evidence to suggest that the effect of shared views goes beyond the probability that the information on which those views are based will enter into discussions. Shared views and beliefs also influence group members’ *perceptions of one another*. If I perceive that you and I have certain things in common (similar opinions on things we both consider important, for instance), the probability increases that I will evaluate you in a positive light. Hence, the probability also increases that I will allow you to influence my opinion on *other* matters. Kameda, Ohtsubo and Takezawa (1997) proposed the term *cognitive centrality* to denote the degree of sharedness or overlap between a particular individual and other members of the group. The most central individual in a group is therefore the person who has most in common (in terms of preferences, beliefs, etc.) with the largest number of other group members. This individual occupies a nodal position in the group’s *socio-cognitive network*.

It seems likely that the most central group members are able to acquire *pivotal power* within the group. This power may derive from at least two of the power bases discussed in Section 5.3.5 above. First, the fact that many of their views are shared by other group members may create the impression that they possess a high level of *expertise* (Kameda et al., 1997). By contrast, views or information held by a small number of individuals stand a greater chance of being dismissed by other group members as being irrelevant or unreliable. Second, the fact that many group members perceive themselves as being similar to central individuals

might increase the likelihood that they will *identify* with those pivotal figures. This might give the latter the additional advantage of being able to wield *referent power*. Experimental studies have found that the most central person in a group can sometimes sway the group's decision in his or her direction, *even when he or she is a minority in terms of preference* (Tindale & Sheffey, 2002).

The effect of sharedness and centrality on group decision-making is mediated by a number of variables. A few of these are listed below:

- ✓ *Information load and time pressure.* When groups are required to process large amounts of information or pressed to make decisions in a short space of time, they tend to evaluate fewer alternatives before concluding their deliberations. They also tend to place more emphasis on *shared* information than would have been the case if they had been given ample time to make decisions (Kelly & Karau, 1999).
- ✓ *The type of problem.* One of the dimensions along which problems might differ is in terms of their degree of *demonstrability*. Tindale et al. (2003) define this term as follows: a problem is demonstrable if group members share a system of beliefs or axioms that an individual can use to “demonstrate” the correctness of a particular solution to that problem. The paradigm case of a demonstrable problem is the proof of a mathematical theorem, since all of mathematics is logically derived in an unbroken chain from self-evident axioms. (It should be noted, however, that the demonstrability of a mathematical problem *in the context of a particular group* will depend on whether group members have the necessary intelligence and mathematical knowledge to understand the proof being demonstrated to them.) An example of a problem with low demonstrability, on the other hand, is one that is centred on ethical or aesthetic judgement. Demonstrability has been found to correlate with differences between the *quality of decisions* taken by groups and those taken by individuals. For problems with low demonstrability, group processes are often dominated by sharedness, so that the quality of group decisions depends on whether the majority is correct. In such cases, groups may outperform some individuals, but usually lag behind the performance of their best member. With highly demonstrable problems, on the other hand, minority group members may “win out” over the majority if they are able to demonstrate the superiority of their preference. In such cases, the performance of the group may approach that of its best member (Laughlin & Ellis, 1986).
- ✓ *Decision-making norms.* Groups frequently have implicit agendas, which include ideas about what the group should hope to attain and how it should go about it. In some groups, the majority of members might believe that the discussion should be an open, free exchange of ideas. In other groups, the dominant idea might be that the objective is to reach a decision and focus on alternatives that are most feasible. Research on mock juries has found that it is possible to distinguish between *evidence-driven* juries (juries that focus on the evidence related to the crime and a discussion of its value and credibility) and *verdict-driven* juries (that focus their efforts on trying to determine whether the defendant is guilty or innocent, and discussion of the evidence focuses on supporting one or the other alternative) (Hastie, Penrod, & Pennington, 1983). Framing the task at hand as a *problem to be solved* (which implies that it has a demonstrably correct solution) and priming groups with norms emphasising *critical thinking* have also been shown to reduce the

influence of majority positions and to enhance the quality of decisions (Tindale et al., 2003).

**b) Social networks and social capital**

The previous section viewed groups from the perspective of information processing and decision-making. A group may also be viewed as a *network of interpersonal relationships*. The term “social network” is often used to denote the web of relationships that link people to one another (Orford, 1997). At any given time, the average person belongs to several groups, some of these being formal groups (such as organisations or social clubs) and others informal groups (such as families and friendship groups). Hence, a person’s social network may extend beyond the boundaries of any single group.

Social networks may be characterised along a number of dimensions, including its size (how many people does one know?) and its *adjacent density* (how many of the people one knows also know one another?). An important characteristic of a social network is the extent to which it harbours *social capital* (Edmondson, 2003; Roseland, 2000). A social network has a high stock of social capital if social relationships are characterised by interpersonal trust and norms of reciprocity. The higher a community’s stock of social capital, the easier its members find it to co-operate for mutual benefit (Fukuyama, 1999).

Social capital resembles other forms of capital – such as financial or human capital – in that it enables an individual, group or society to “get things done.” Fukuyama (1995) regards Germany and Japan as examples of societies with high social capital, since they are characterised by institutions that can generate extra-familial bonds of social trust. He argues that this attribute is instrumental to their economic success: because members of these societies are generally able to trust one another, they are able to develop innovative organizations and hold down the cost of doing business. By contrast, societies with low social capital (such as China, France, Italy and Korea – and perhaps one could also add South Africa to this list?) frequently need to resort to time-consuming negotiation and litigation of rules and regulations. He also points out that a nation’s stock of social capital might change over time. He cites the United States of America as an example of a society in which social capital has been eroded to a significant degree in recent years.

Fukuyama (1999) goes on to argue that social capital is something of a two-edged sword. Although it may contribute to economic prosperity *within* a group, it may also give rise to tension, mistrust and hostility *between* groups. This is because “group solidarity in human communities is often purchased at the price of hostility towards out-group members. There appears to be a natural human proclivity for dividing the world into friends and enemies that is the basis of all politics” (p. 1). This apparently universal tendency is discussed in greater detail in Section 5.4.3 below.

**5.4.2 The effects of group dynamics**

It was argued above that the characteristics of a group mediate the behaviour of its members in a number of ways. The degree of social capital inherent in a group influences the ability of individuals to engage in profitable economic endeavours, for instance, while shared norms and ideas influence the ability of a group to make high-quality decisions. This section explores two *negative* consequences of group dynamics, namely *group polarisation* and *groupthink*.

a) *Group polarisation*

Group polarisation refers to the tendency of groups to adopt *more extreme courses of action* than would have been chosen by their members if they had been acting in isolation (Stasser, Taylor, & Hanna, 1989). Group polarisation was a vigorous research topic in social psychology in the 1970s (Tindale et al., 2003); consequently, a number of explanations have been advanced for this phenomenon. Vinokur and Burnstein (1974), for instance, argued that for any given issue, there is a population of arguments associated with it. Group discussion may therefore be visualised as a process by which group members “sample” arguments from this population. If there are more (and/or more persuasive) arguments favouring positions at one end of the spectrum of alternatives, then the sample of arguments would favour that end of the spectrum and lead group members to adjust their preferences in that direction.

Vinokur and Burnstein’s hypothesis may be questioned in the light of some of the research evidence cited in Section 5.4.1a) above. Their hypothesis predicts that the main driving force behind polarisation would be ideas or items of information that were previously *unique* to certain group members. However, as was pointed out above, the exact opposite often occurs in actual group discussions: decisions are dominated by information that is shared by the majority of members *from the outset*, rather than by what they learn during the discussion. An alternative explanation of group polarisation is that, once members become aware of the dominant group opinion, their desire to be acceptable to the group might lead them to express views that are slightly more extreme than this preponderant view. This can bring about a self-amplifying cycle, or *positive feedback loop*, as the expression of extreme views induces a shift in the group ethos as perceived by *other* members. They then express views that are still more extreme, thereby shifting the perceived consensus still further, and so on (Hogg et al., 1990).

b) *Groupthink*

Groupthink refers to a phenomenon that sometimes occurs when “group members focus on the goal of unanimity of opinion more than they focus on the achievement of other goals, such as realizing the purpose for which the group may have been designed in the first place” (Sternberg, 2001, p. 453). The phenomenon of groupthink has been invoked to explain certain historical instances where groups of highly competent individuals made decisions that turned out to be extremely ill-considered. A common feature of many of these disastrous episodes is that group members did not engage in efforts to obtain sufficient *information*, to examine *alternative decision options* or to assess the attendant *risks* before making decisions (Janis, 1972).

Janis (1972) posited that groupthink is most likely to occur under conditions of high stress in groups that are isolated, homogenous and characterised by high cohesiveness. The absence of impartial or objective leadership also places a group at risk of groupthink. Typical symptoms of groupthink include the following:

- ✓ *Closed-mindedness* (the group is not open to alternative conceptualisations);
- ✓ *Rationalisation* (the group goes to great lengths to justify its decisions, sometimes to the extent of distorting reality to fit their decisions);

- ✓ *Discouraging dissent* (those who do not agree are ignored, criticised or even excluded from the group);
- ✓ *The formation of a “mindguard”* (one person assumes the role of upholding the group norm and making sure everyone else stays in line);
- ✓ *Feelings of invulnerability* (the group believes that, given the ability and intelligence of its members, it cannot be wrong); and
- ✓ *Feelings of unanimity* (group members believe that everyone in the group has the same opinions and convictions).

### 5.4.3 Social identity theory

The effects of group dynamics on individuals go beyond influencing their decisions; it may also influence the way they view themselves and their world. This notion forms the basic premise of *social identity theory* – a line of psychological enquiry that has its roots in the work of Henri Tajfel (Tajfel & Turner, 1979). The basic ideas of social identity theory may be explained in terms of the metaphor of *maps and territories*. As pointed out in Section 4.1.2, all map-making involves simplification: certain details of the territory must necessarily be omitted in order to create a map of manageable size. Simplification, in turn, entails some form of *classification* or *categorisation*. In most geographical maps, for instance, differences among individual trees or tree species are ignored, and all areas covered by trees are represented by the colour or symbol denoting “forest.” The creation of the map therefore involves the creation of a *class* containing all trees.

The mental “maps” people make of their social world follow the same principle. We classify ourselves and one another; we assign individuals to social categories or groups. These categories may be based on acquaintance or on shared characteristics such as ethnicity, religion, gender, age or occupation. Whereas geographical categories are represented on maps by colours or symbols, a social category is represented in the mind by means of an image of the *prototypical group member* (Leyens & Codol, 1992).

A fundamental attribute of social “map-making” is that it divides one’s subjective world into two broad categories: *ingroups* (those groups of which one considers oneself to be a member) and *outgroups* (groups one considers as distinct from oneself and one’s ingroups). The effect of ingroup-outgroup categorisation is twofold. First, people tend to *identify* with their vision of the prototypical ingroup member. Thus, they tend to emulate what they regard as characteristic behaviour of this prototype. In situations where membership of a particular group is made salient, the self therefore becomes partially defined by the group. This phenomenon has been invoked to explain *conformity* to group norms (Abrams, Marques, Bown, & Henson, 2000). It may also account for certain aspects of *group decision-making*, such as the finding that an increase in the salience of group identity tends to amplify the effects of social influence processes associated with group consensus (Tindale et al., 2003).

Because any form of classification draws an imaginary line between members and non-members of a category, it defines both what an entity *is* and what it is *not*. A second major consequence of ingroup-outgroup categorisation is therefore that it enables one to *differentiate* oneself from other groups. As was pointed out earlier, this differentiation has its

dark side: the imaginary lines dissecting the social world into “us” versus “them” often turn into battle lines.

Differences in the way people regard their ingroups and the manner in which they perceive their outgroups have been the subject of a significant amount of research (Brown, 1992). It has been found, for instance, that people tend to overestimate the degree to which outgroup members are alike – a phenomenon known as *outgroup homogeneity bias* (Brehm & Kassin, 1990; Vonk & Van Knippenberg, 1995). People may also view outgroups in a less positive light than ingroups, so that outgroup members are perceived as possessing negative attributes – a tendency known as *negative stereotyping* (Brown, 1992). Such negative attitudes toward outgroups may manifest themselves as *prejudice*. Stereotyping and prejudice may, in turn, set the stage for *inter-group conflict*, which is the topic of the following section.

#### 5.4.4 Inter-group conflict

In the light of the preceding discussion, it seems reasonable to conclude that social identity and ingroup-outgroup categorisation play an important part in engendering conflict between groups. However, this does not necessarily mean that these phenomena are the only, or even the most important, precursors of inter-group conflict. Other possible contributing factors include competition over scarce resources, exploitation of one group by another and misunderstandings arising from linguistic or cultural differences. These possibilities are discussed in greater detail below.

##### a) *Theoretical perspectives on inter-group conflict*

Literature on inter-group conflict reflects a number of theoretical perspectives on the nature and causes of such conflict. Fisher et al. (2000) have summarised these perspectives under the following headings:

- ✓ *Identity theory*. This perspective most closely approximates the view, mentioned above, that ingroup-outgroup categorisation is the principal cause of inter-group conflict. It asserts that conflict usually arises when a group’s identity is perceived to be under threat.
- ✓ *Human needs theory*. This perspective sees conflict as caused by unmet or frustrated basic human needs. These needs may be physical (e.g. the need for food or shelter), psychological (e.g. the need for security or acceptance) or social (e.g. the need for affiliation or freedom of expression).
- ✓ *Principled negotiation theory* resembles human needs theory in that it recognises the potential for frustrated human needs to incite conflict. It asserts that competition over the resources required to meet such needs may boil over into conflict if interacting parties adopt a self-interested, “winner-takes-all” approach to resolving their differences.
- ✓ *Intercultural miscommunication theory*. This perspective holds that conflict is caused by incompatible cultural styles of communication. For instance, an action by members of one group may be interpreted by the other group as an expression of contempt or animosity when in fact it was not intended as such.



- ✓ *Conflict transformation theory.* According to this view, inequality and injustices embedded in social, cultural and economic systems are a leading cause of inter-group conflict.
- ✓ *Community relations theory* views conflict as a self-amplifying process. It holds that expressions of mistrust and hostility by one group may elicit similar responses from the other group. Thus, the two groups may become increasingly polarised over time.

b) *Possible outcomes of inter-group conflict*

The last perspective outlined above resonates with Bateson's (2000) view that conflict (whether between individuals or groups) frequently involves *symmetrical schismogenesis* (see Section 5.3.3b above). Schismogenesis, in turn, is an instance of *positive feedback*. In Section 4.2.3, it was pointed out that the lifetime of a positive feedback loop usually has a natural limit. This principle was illustrated by the hypothetical example of a steam engine with a governor that has been configured to induce "runaway." It was noted that the steam engine will increase in speed, but only until the upper limit of available fuel supply is reached or until something breaks. It was argued in Section 5.3.3b) that interpersonal conflicts have a similar limit. The arguments between George and Martha of "*Who's afraid of Virginia Woolf?*" for instance, escalate until a climax is reached. After a temporary truce, the cycle then begins afresh. The same may be said of inter-group conflicts: they cannot escalate indefinitely.

Following this line of reasoning, it is possible to identify a number of possible outcomes of inter-group conflict. One possibility is that one group may destroy the other, or else weaken it to such an extent that it is unable to continue the confrontation (Bateson, 2000). Another possibility is that the two groups may eventually achieve *reconciliation*. The various theoretical perspectives on inter-group conflict outlined above offer diverse views on how such reconciliation might be achieved. Identity theory, for instance, states that the central requirement for conflict resolution is *dialogue* between the parties, as this may enable them to articulate their fears, express mutual empathy and achieve mutual recognition of identity. Human needs theory, on the other hand, holds that reconciliation is most likely if parties are able to express their needs and discuss how they might be met, while principled negotiation theory sees the most promising solution in the formulation of agreements that are mutually beneficial to all parties (Fisher et al., 2000).

Neither of the two outcomes outlined above are necessarily permanent. If one group is weakened, for instance, it may eventually recover sufficiently to resume the fight. Similarly, a reconciliatory peace treaty might address the *symptoms* of a conflict without resolving its underlying causes. In such instances, the conflict might resurface at a later stage (Fisher et al., 2000; Rothman, 1997).

Yet another possible outcome of inter-group conflict is that one group may be *co-opted* by the other (Boyce, 2001). Co-optation presents itself as an option for ending conflicts when significant power differences exist between the conflicting groups – for instance, when one group represents the ruling party of a state and the other a resistance movement. In the context of public participation, the co-opting party might be the project proponent, and the co-opted party an environmental group or community-based organisation opposed to the proposed project or action.

Pruijt (2003) defines co-optation as a strategy by which the co-opting group partly embraces certain ideas or ideals of the resistance movement, reframes the conflict in such a way that resolving it will not threaten its own objectives, and gives members of the co-opted group a role within its own ranks. Co-optation therefore serves as a means for defusing conflict by re-drawing the lines dividing the ingroup from the outgroup – or at least pretending to do so. Its effects on the co-opted group are pervasive (Selznick, 1949): its leaders are attracted by the increase in power accompanying their association with the co-opting group, their followers are conciliated or discouraged by what they perceive (perhaps rightly) as a “sell-out,” and remaining radicals are repressed (Piven & Cloward, 1977).

#### 5.4.5 Culture

It was mentioned in the previous section that inter-group conflict might arise from *cultural differences* in communicative styles. This final section of Chapter 5 focuses on the various aspects of culture, dimensions along which cultures may differ from one another and the possible effects of culture on individual behaviour. In closing, it addresses the question of how inter-cultural misunderstandings might arise.

##### a) *Aspects of culture*

Culture plays an important role in every human endeavour: it determines how we live, how we see the world, what we regard as important and how we pursue our goals. Schein (1985) developed a framework for delineating the various facets of culture. This framework distinguishes between three *levels* that are relevant to the description of a culture:

- ✓ Artefacts (the observable manifestations of culture);
- ✓ Values and behavioural norms; and
- ✓ Core beliefs and assumptions (which may be regarded as a culture’s essence).

These three levels constitute a *hierarchy of logical types*: a culture’s core beliefs and assumptions (what Bateson would call its *epistemology* – see Section 5.2.5b) are more abstract than its values and behavioural norms. These, in turn, are more abstract than material artefacts. Moreover, a people’s epistemology determines the norms according to which they act. Their behaviour, in turn, determines which artefacts they produce.

Other authors have proposed models of the dimensions along which cultures might differ at a particular level. Douglas and Wildavsky (1982), for instance, have proposed an influential model for characterising a culture’s core beliefs and assumptions. Their model is described in the following section.

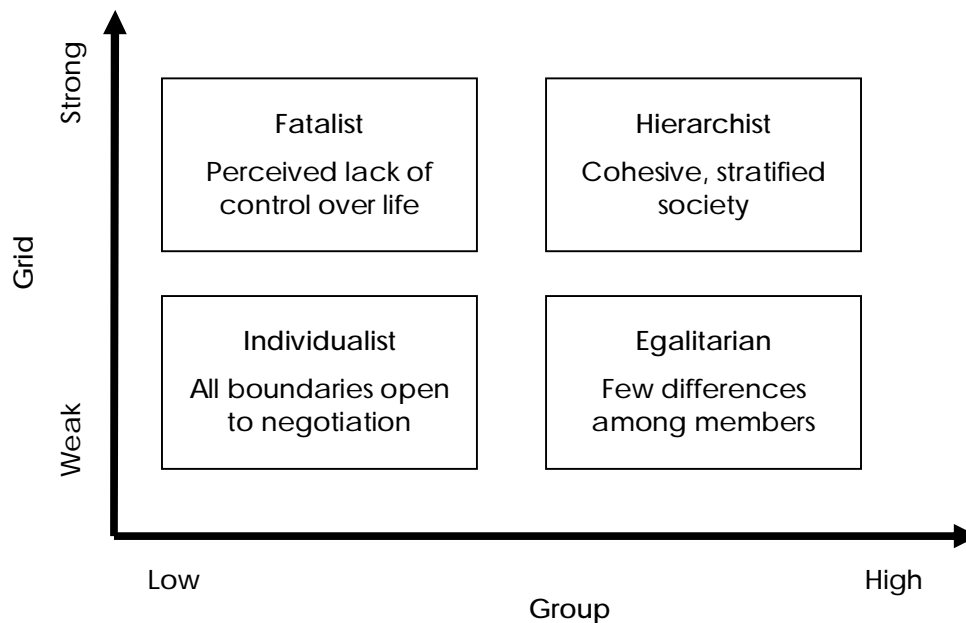
##### b) *The “Grid-Group” model of culture*

Douglas and Wildavsky’s model posits that cultures can be distinguished from one another in terms of two dimensions:

- ✓ “*Group.*” This dimension refers to a culture’s degree of *collectivism*, or the extent to which people identify with and are incorporated into coherent units; and
- ✓ “*Grid.*” This dimension captures the degree to which behaviour is circumscribed by externally imposed *constraints*. The more binding and extensive the scope of such constraints, the less open an individual’s life is to individual negotiation.

Four basic cultures emerge from the intersection of these two dimensions. These are outlined below and illustrated in the accompanying figure:

- ✓ High collectivism allied with few external constraints produces cultures that are *egalitarian*. The relative absence of external prescriptions is reflected in the fact that there are few internal differences among group members, while at the same time there is high group cohesion and strong group boundaries.
- ✓ High collectivism and strong external constraints produce cultures that are *hierarchist*. In such cultures, people are tightly woven into a social fabric that is highly stratified.
- ✓ Low collectivism and few external constraints characterise an *individualist* culture. In such cultures all boundaries are open-ended and ripe for negotiation, since their members are circumscribed by neither their group nor by socially prescribed constraints.
- ✓ Low collectivism and high external constraints are the hallmark of a *fatalist* culture. Members of such cultures feel themselves constrained from outside, yet alone by virtue of being part of no group. Fatalists feel they have no control over their lives, because external forces are controlling them. Thus, they may be regarded as having an *external locus of control* (see Section 5.2.1).



**Figure 5.13 The “grid-group” model of cultural differences**

A culture’s position on these two dimensions may influence various aspects of individual, interpersonal and social behaviour. For instance, a culture’s position on the “grid” dimension may influence the degree to which its social, political, and bureaucratic institutions are characterised by hierarchical arrangements (Boyle, 1998). On the other hand, a culture’s position on the “group” dimension may determine the relative importance of *perceived social norms* and *individual attitudes* in shaping a person’s actions (see Section

5.2.7). In highly collectivist cultures, the influence of individual attitudes is overshadowed by that of social norms. In cultures at the other end of the spectrum, the situation is reversed (Schaap & Van Steenbergen, 2001).

The degree of collectivism characterising the culture in which a person is raised may also shape his or her sense of *identity* (Horvath, 1998). In comparing Asian and American cultures, Markus and Kitayama (1991) found that child-rearing practices in America fosters an *independent* conception of the self, whereas socialisation in Asian cultures such as China and Japan foster an *interdependent* view. These differences seem to arise because American parents teach their children to be self-reliant, to feel good about themselves and to view themselves as special individuals. Children are encouraged to excel in competitive endeavours, and to strive to stand out from the crowd. Americans therefore learn from an early age to define themselves in terms of their personal attributes, abilities and accomplishments. These become the basis of their self-worth.

By contrast, Chinese and Japanese cultures emphasise the fundamental connectedness of people to one another; the self is viewed as part of a larger social matrix. Children are taught to be modest about their personal accomplishments so as not to diminish the accomplishments of others. They are also encouraged to avoid standing out from the crowd. Thus, people in these cultures learn to define themselves in terms of the group to which they belong. Harmonious relations with others and pride in group achievements become the basis of self-worth.

### c) *Cultural differences in interactive styles*

Yet another dimension along which cultures might differ is in terms of the way its members communicate. As mentioned above, such differences may hinder attempts by members of different cultures to understand one another. Such misunderstandings may, in turn, give rise to inter-group conflict.

One obvious obstacle to cross-cultural communication is a difference in *language*. However, as was pointed out in Section 5.3.1, people do not communicate by words alone. *Non-verbal communication* plays an important role, especially as far as communication about relationship is concerned. One possible source of cultural differences in non-verbal communication involves the *channels* by which people effect such communication. In this regard, Bell et al. (1996, p. 282) suggest that cultural norms “may affect whether individuals believe it is appropriate to communicate by means of particular sensory modalities or touch.” They cite Hall (1966) as proposing a distinction between “contact” cultures (such as the Mediterranean, Arabic and Hispanic cultures) and “non-contact” cultures (northern European and Caucasian American cultures). Hall hypothesised that contact cultures tend to use smell and touch as well as other sensory modalities more regularly than non-contact cultures. They also tend to interact at closer distances. Thus, if a member of a non-contact culture interacts with someone from a contact culture, he or she might experience the other’s close proximity as intimidating or intrusive. At the same time, the individual representing the contact culture might interpret the other’s attempts to maintain a larger interpersonal distance as a sign of rejection.

Bateson (2000), building on his conception of complementary interactional motifs (dominance-submission, nurturance-dependence, exhibitionism-spectatorship, etc. – see Section 5.3.3a) identified another possible source of cross-cultural misunderstanding. He

noted that it is possible for a single individual to employ more than one interactional motif at the same time. For instance, dominance may be coupled with nurturance, or submission with spectatorship. He argued that the ways in which these themes are combined tend to differ from one culture to the next. In Europe, for instance, nurturing behaviour is traditionally associated with superiority, and dependence with submission. Children are expected to be obedient to their parents, or to the adults in whose care they have been placed, and Christ is often referred to as the “Good Shepherd” who cares for His flock.

During his fieldwork in Bali, he found that traditional Balinese – in contrast with Europeans – regard their gods as “the ‘children’ of the people, and when a god speaks through the mouth of a person in trance, the god addresses anyone who will listen as ‘father.’ Similarly, the raja is *sajanganga* (‘spoilt’ like a child) by his people” (Bateson, 2000, p. 100). In other words, the Balinese traditionally associate dominance with dependence and submission with nurturance. During World War II, Bateson also noted that “whereas the dominant Nazis preen themselves before the people, the czar of Russia kept his private ballet, and Stalin emerges from seclusion only to review his troops.” This suggested that, for the Nazis, dominance was coupled with exhibitionism and submission with spectatorship, while for the Russians it was the other way round.

Bateson went on to argue that such differences in the combination of interactional motifs may be a frequent source of misunderstanding between cultures. Suppose, for example, that I have been raised in a culture where exhibitionism is associated with dominance, and that I meet an individual who frequently dominates our conversations, boasts to me about his or her achievements, etc. I would be likely to interpret this exhibitionistic behaviour as an attempt to assert dominance in our relationship. But if this person is a member of a culture in which exhibitionism is associated with *submission*, it is likely that his or her boasting is, in fact, a sign of respect or a bid for my approval.

Bateson (2000, p. 102) observed, for instance, that, “to an American eye, the English too often appear ‘arrogant,’ whereas to an English eye the American too often appears to be ‘boastful.’” He went on to suggest that the “arrogance” of the Englishman might be “due to the combination of dominance and exhibitionism. The Englishman in a performing role (the ... political spokesman, the lecturer, or what not) assumes that he is also in a dominant role. ... But the American does not see it thus. To him, the ‘arrogant’ behavior of the Englishman appears to be directed *against* the audience. ... Similarly, the behavior which an Englishman interprets as ‘boastful’ in an American is not aggressive... He does not know that, as a matter of fact, Americans will only behave like this to people whom they rather like and respect.”

## 5.5 CONCLUSION

Throughout this chapter, two contrasting themes emerged again and again. The first theme is the notion that “individuals are by disposition egocentric, parsimonious and atomistic; that it is in the human constitution to maximize individual gain; and that people always relate to each other and to rules and regulations in an instrumental, strategic, and cost-benefit manner” (Jentoft et al., 1998, p. 425). Also included in this theme is the assumption that collective human behaviour is best understood in terms of the beliefs and goals of *individuals*. The second theme embraces a wider view: it acknowledges that much of human behaviour is mediated by or built on a pre-rational and usually unconscious matrix. It

also insists that *individual* experience and action does not always constitute the most appropriate unit of analysis; sometimes relationships and groups might take on “a mind of their own.”

The tension between these two themes first came to the fore in this chapter during the discussion on theories of attitude formation (Section 5.2.6), where *conditioning theory* (which holds that attitudes reflect positive or negative past experiences) was contrasted with *cognitive dissonance theory* (which holds that attitudes are sometimes adjusted to harmonise with behaviour instead of the other way round). Conditioning theory resonates with the first theme mentioned above (i.e. the idea that behaviour is based on perceptions of cost-versus-benefit), while dissonance theory is more consistent with the second theme (the idea that much of behaviour is influenced by non-rational factors). The two themes emerged again in the discussion of the link between attitudes and behaviour (Section 5.2.7). Here, it was noted that the *theory of planned behaviour* (which asserts that behaviour is primarily determined by beliefs and valuations) may be limited in that it does not account for the effect of *habit formation*.

In the discussion of interpersonal relationships (Section 5.3.3), the first theme was embodied in the view that *trust* is essentially a subjective risk assessment conducted by individuals, while the second theme was echoed in the argument that trust is something that happens *between* people, and that it is fundamentally distinct from market logic. The two contrasting theories of *group polarisation* discussed in Section 5.4.2a) carried these two themes forward into the domain of group dynamics. One theory states that group polarisation results from biased sampling of persuasive arguments, while the other theory regards group polarisation as the consequence of a positive feedback loop. This feedback loop comes into being when group members try to enhance their status in the group by expressing views that are more extreme than the perceived views of their fellows.

The range of theories on the causes of *inter-group conflict* (Section 5.4.4) may be divided along similar lines. Human needs theory and principled negotiation theory, for instance, claim that such conflicts arise mainly from scarcity of resources and self-interested attempts by groups to appropriate resources. By contrast, identity theory and conflict transformation theory emphasise *symbolic* matters such as social identity, equity and justice.

The very first mention in this study of the tension between these two themes was in Chapter 2, where it was noted that the first theme extends beyond psychology into neighbouring disciplines such as economics and aspects of sociology. Its incarnations in those fields go by various names, such as “utilitarian individualism,” “rational economic man,” etc. Despite the diversity of labels, however, it presents a formidably unified front to its critics: as was pointed out in Section 2.1.1, its basic assumptions remain very similar irrespective of the field in which it is applied. Its counterpoint, on the other hand, has not yet achieved a comparable degree of coherence. For instance, it is very difficult to forge a conceptual link between cognitive dissonance and habit formation, or between identity theory and the view of interpersonal relationships as emergent properties of interactional patterns. Because of the lack of coherence among its constituent ideas, this second theme is often defined in negative terms – it is *not* utilitarian, *not* reductionist, *not* premised on market-based logic, etc. – rather than in terms of what it is.

Chapter 7 will endeavour to address this imbalance. In that chapter, a tentative outline for a unified model of human behaviour will be proposed – a model that might eventually serve





to bridge the divide between the utilitarian individualistic/ rational economic edifice and the constructs erected by its critics. It will be argued that the construction of such a model should proceed from two starting points:

- ✓ Bateson's notion of an *economics of flexibility*; and
- ✓ A rigorous classification of phenomena in terms of their *logical type* and *level of description*.

The potential value of such a framework will be demonstrated by showing how it may be applied in the context of public participation. In order to pave the way for this application, however, it is necessary first to consolidate and bring a degree of coherence to available knowledge regarding the systems, subsystems and supra-systems relevant to public participation. This task will be attempted in the following chapter.

## CHAPTER 6: THREE SYSTEMIC “MAPS” OF PUBLIC PARTICIPATION

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*Scientists often have a naive faith that if only they could discover enough facts about a problem, these facts would somehow arrange themselves in a compelling and true solution.*

– Theodosius Dobzhansky

In Chapter 3, a number of important themes pertaining to public participation were introduced. These included:

- ✓ Its various *functions* and *benefits* (Section 3.2);
- ✓ Differences among various public participation models, and the fact that each model imposes a particular set of *rules* on the processes to which they are applied (Section 3.4);
- ✓ The fact that the applicability of a particular model depends on the type of problem and its political and socio-cultural *context* (Section 3.4 again);
- ✓ Some of the *pitfalls* of public participation (Section 3.5.3);
- ✓ The fact that it is not always possible for a public participation process to realise all its objectives to the same degree – a circumstance that necessitates certain *trade-offs* (the Competing Values Model discussed in Section 3.6.2); and
- ✓ Criteria for evaluating the *effectiveness* of a public participation process or model (Webler’s theory of fairness and competence, which was discussed in Section 3.6.5).

After the previous two chapters’ detour into systems theory and psychology, it is now time to return to public participation and to begin drawing these diverse strands together. In pursuing this aim, the tools and concepts of systems theory are put to use to develop three models or theoretical analyses of public participation. In keeping with Korzybski’s maxim (“The map is not the territory”), these models are to be regarded as *alternative maps* that are complementary rather than contradictory. Each draws a specific set of distinctions, and thus highlights different aspects of public participation. These maps do not yet incorporate the psychosocial dynamics of public participation, but provide the backdrop against which such dynamics must be viewed.

The first model continues the themes of the *rules* governing public participation processes and the *contexts* in which these processes take place. It also emphasises the *role-players* and *institutions* that are involved in participation processes or may exert an influence over them. Hence, it can be called a *structural* map of public participation. This model is loosely based on Bronfenbrenner’s (1979) ecological model of human development, which was discussed in Section 4.3.3b).

The second model takes up the themes of the functions and benefits of public participation. Hence, it can be referred to as a *functional* map of public participation. This map also

incorporates the notion of *fairness* and *competence*, and it emphasises the necessary *trade-offs* among the objectives of public participation.

The third model focuses on the *problems* and *pitfalls* of public participation. Unlike the discussion presented in Section 3.5.3, this model is not limited to public participation in the South African context; instead, it takes a global perspective. The model traces the *causes* and *consequences* of problems that frequently occur in public participation. Hence, it fits the description of a *process map*.

## 6.1 A STRUCTURAL MAP OF PUBLIC PARTICIPATION

As was mentioned in Chapter 4, Bronfenbrenner (1979) posited that the various factors influencing human development can be ordered into four concentric systems, which he termed microsystems, mesosystems, exosystems and macrosystems. *Microsystems*, according to his definition, are the various settings (the family, the classroom, etc.) in which a person finds him- or herself on a regular basis. *Mesosystems*, on the other hand, are defined as the patterns of interaction among these microsystems (the relationship between family and school, for instance). A person's development is also indirectly influenced by factors (such as parents' workplaces) that lie outside one's realm of personal experience, but form part of the world experienced by the people who inhabit one's microsystems. Bronfenbrenner defined such factors as *exosystems*. Finally, a person's development is influenced by various social and cultural factors; these constitute a person's *macrosystem*.

The structural model of public participation presented below resembles Bronfenbrenner's model in a number of ways. First, it depicts a spectrum of factors that might influence the outcome of public participation processes. These range from immediate or proximal factors (such as the interaction among participants) to more indirect or distal factors (such as the political, legal or socio-cultural framework in which a public participation process is embedded) (Boyce, 2001). Second, it divides this spectrum into four categories. The outermost of these is termed the *macrosystem*, and the meaning of the term in this context corresponds almost exactly to the meaning bestowed on it in Bronfenbrenner's model. The innermost set of factors (the participation process itself) is referred to as the *microsystem*.

The structural model of public participation differs from Bronfenbrenner's model in a number of respects, however. First, the term "exosystem" has been omitted. In its place, a distinction is drawn between *two levels* within the microsystem. The first of these is labelled the *discourse* level; it comprises the actions and utterances of participants. The second level includes the rules governing the discourse and the actions of the public participation facilitator or mediator that are intended to enforce these rules. This level is referred to as *discourse parameters*. Finally, the *mesosystem* is defined as the processes and structures that link a public participation process (the microsystem) to its social, political and cultural context (the macrosystem). The model is graphically depicted in the figure below, and each of its components is discussed in greater detail in the following sections.

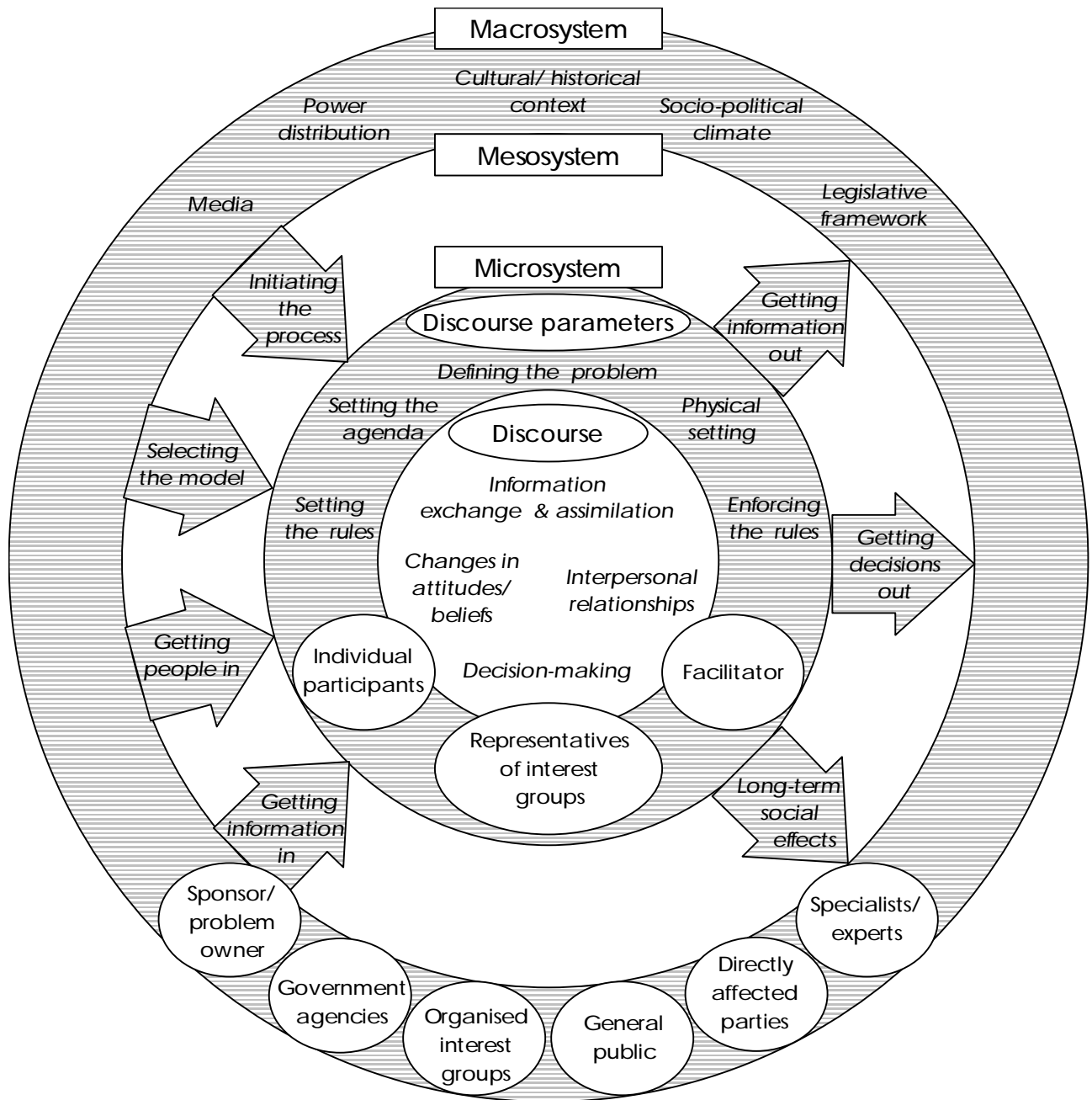


Figure 6.1 A structural model of public participation

### 6.1.1 The macrosystem

The inclusion of this component in the model is motivated by the fact that “public participation is always embedded in broader social decision processes” (Vari, 1995, p. 109) and that the effectiveness of any public involvement process is “highly contingent upon the wider legal and political framework” (p. 112). As the foregoing figure illustrates, the most important elements at the macrosystem level that influence public participation processes are:

- ✓ The cultural and historical context;

- ✓ The socio-political climate;
- ✓ The existing distribution of power;
- ✓ The legislative framework; and
- ✓ The media.

These elements are not independent, but influence one another in various ways. The following discussion by Hadden (1995) of *regulatory negotiation* (which was discussed in Chapter 3 as a particular approach or model within public participation) provides an example of such interaction:

“Regulatory negotiation, a means for drafting regulations required under law [the legislative framework] is and will probably remain unique to the United States, because it is directly related to important characteristics of democracy in that nation [the cultural and historical context]: implementation of legislative policies characterized by adversarial relationships with government [the socio-political climate], the ability to challenge regulatory decisions of government agencies in court, and ... the existence of powerful, well-organised national-level interest groups [power distribution] that are expected to act on behalf of their members without direct consultation.” (p. 239)

The elements of the macrosystem and their relationships to one another are described below.

#### a) *Cultural and historical context*

The relevance of culture and history for public participation stems from the fact they condition social relationships and impose a set of constraints on participants' behaviour (Boyle, 1998; Brinkerhoff, 2002; Kelly & Van Vlaederen, 1995; Soneryd & Weldon, 2003). Behaviour that is permitted in some cultures (the participation of women on an equal footing with men, for example) may be frowned upon in others, and past events may influence people's opinions of one another. Culture also provides a framework in which participants interpret one another's actions. As (Nothdurft, 1995) points out:

In all their utterances the participants rely on common-sense assumptions of how the world is ... on basic rules and idealizations of social situations... and on assumptions about “common language,” “shared meaning” of verbal expressions, and identical comprehension of interactive events. ... It is exactly this cognitive-cultural web of commonsense assumptions and presuppositions of communication and understanding which guides the communicative behaviour of participants in interactive situations. (p. 277)

Shared meanings within public participation processes may include participants' *perceptions regarding the role of the mediator or facilitator*. Speaking of mediation as a form of public participation, for instance, Nothdurft (1995, p. 275) argues that mediation is only effective “when it is strongly related to a specific cultural context.” It is this context that “renders the mediator authority, his voice validity, his actions importance, and his values and orientations relevance” (Nothdurft, 1995, p. 276).

Culture and history also shape participants' attitudes and assumptions regarding alternative *models or techniques* of public participation. This fact can be illustrated with reference to Planning Cells. Planning Cells are similar in many respects to legal juries. In both cases, members are randomly selected from the general public, and are required to make decisions based on evidence presented to them by experts and witnesses. Notwithstanding these similarities, however, Planning Cells do not enjoy nearly the same degree of popular acceptance as that afforded to juries in countries like the United States. This may be explained by the fact that Planning Cells, unlike juries, "lack the cultural tradition that provides some degree of legitimacy and places them above immediate criticism" (O Renn et al., 1995, p. 344). The importance of culture and history for public participation is confirmed by the fact that "cultural transplants of procedural innovations are almost inevitably doomed to failure" (Linnerooth-Bayer, 1995, p. 217).

Apart from moulding the attitudes and beliefs of individual participants, cultural and historical factors also influence public participation in a number of other ways. For example, they play a decisive role in forming the *socio-political climate* of a country (Boyle, 1998; Macnaghten & Jacobs, 1997; Renn, 2001) and in shaping the *distribution of power* within society (Healey, 1997, in Soneryd & Weldon, 2003; Kelly & Van Vlaederen, 1995). These factors are discussed in the following two sections.

#### b) *Socio-political climate*

The socio-political climate in which a public involvement process takes place may be defined as the *sum of the social and political institutions* that exert an influence on it, as well as the *relationships and linkages* that exist among these institutions. Nodes in this institutional network may include government agencies, political parties, organised interest groups and the like.

Characteristics of a socio-political climate that are relevant to public participation include:

- ✓ *The stability of social and economic arrangements.* Some participation models (such as citizen advisory committees) are not effective in turbulent political environments characterised by the frequent emergence and re-alignment of interest groups (Vari, 1995). This is because the CAC model relies on mutual acceptance of multiple perspectives and circumstances in which cooperation between parties is more rewarding than direct confrontation (Lynn & Kartez, 1995). By contrast, others models (planning cells, for example) have been found to be effective even in high-conflict situations (O Renn et al., 1995).
- ✓ *The degree to which interest groups are organised.* Interest groups may influence the outcome of a public participation process either through direct involvement or through *lobbying* of participants (Seiler, 1995). Their ability to exert such influence usually varies in direct proportion to their level of organisation (Sekgobela, 1986). Hence, several public participation models (including regulatory negotiation and CACs) "can be functional only in a society where ... interests are well articulated and the public is relatively well organized" (Vari, 1995. p. 112).
- ✓ *The degree of authority enjoyed by experts.* A general global trend is that, in countries where the public is relatively mistrustful of technical or scientific experts, people are less willing to let those experts make judgements or assessments on their behalf. Hence, they will be more likely to insist on being directly involved in decisions



that affect them. This trend explains why, in comparison with the USA, citizens in most European countries are satisfied with limited opportunities for participation in policymaking: in the political culture of European countries, “experts have traditionally enjoyed more authority than their American counterparts” (Linnerooth-Bayer, 1995, p. 205).

c) *Power distribution*

It has been argued by several authors (including Seiler, 1995, p. 144) that public participation “must be seen in the context of the social and legal distribution of power; otherwise it remains a theoretical discussion with pure academic interest.” The possible effects of power differences on public participation include the fact that:

- ✓ Powerful stakeholders may be able to control which items get included in the *agenda*. For example, interest groups may be forced to accept the agenda imposed by authorities in order to ensure the cooperation of the latter (Linnerooth-Bayer, 1995).
- ✓ The ability to define *norms* (in other words, to decide what counts as right or wrong) usually lies in the hands of the most powerful sectors of society (Bachrach & Baratz, 1962).

d) *Legislative framework*

Public participation inevitably takes place “in the shadow of the law” (Nothdurft, 1995, p. 277). The legal system of any country is a product and a reflection of its socio-political climate and existing power relations. Legislation often determines the circumstances under which public participation must take place (Krannich et al., 1994; Renn, 2001; Sinclair & Diduck, 2001). (As was mentioned in Section 3.5.2, for example, environmental legislation in South Africa specifies that public participation must take place during any environmental impact assessment.) Legislation also determines the ability of a public participation process to influence decision-making (Woltjer et al., 2002). In the USA, for example, administrative decisions “are not finalized until they have undergone judicial review. This provides opportunities for interest groups to delay and reverse environmental decisions made by government agencies, and greatly enhances the significance attributed to public participation” (Linnerooth-Bayer, 1995, p. 204). By contrast, the German legislative system is such that decisions made by a regulatory agency cannot be challenged, thus reducing the incentive for participation.

e) *Media*

The media play an important role in any public sphere. They serve to inform the public of government actions and decisions, and may contribute towards shaping public opinion (Abelson et al., 2003; Ball, 2002; Raimond, 2001). In a public participation model that relies on voluntary involvement (the “Decide, Announce, Defend” model, for example) the media are also a vital tool for informing potential interested or affected parties of the process and of opportunities to become involved.

### 6.1.2 The mesosystem

The mesosystem of a public participation process was defined above as the link between the process itself and the social, political and legal system in which it is embedded. In many cases, this link “seems to be more important than the internal procedure of the model” in determining the outcome of a process (Seiler, 1995, p. 141). The mesosystem may be regarded as consisting of seven interrelated activities or processes. Four of these processes pertain to *the incorporation of elements from the macrosystem into the microsystem*. These are:

- ✓ *Initiating the process;*
- ✓ *Selecting or designing a public participation model;*
- ✓ *Getting people in (that is, inviting, selecting or appointing participants); and*
- ✓ *Getting information in (that is, gaining access to the relevant data and opinions).*

The remaining three elements of the mesosystem pertain to the *repercussions* of a participation process for its social and institutional environment. These elements are:

- ✓ *Getting information out (in other words, informing parties who are not directly involved in the process about its objectives, relevant issues, etc.);*
- ✓ *Getting decisions out (that is, communicating the outcomes of the process to the appropriate parties); and*
- ✓ *The long-term social effects of public participation (which may include the empowerment and education of citizens).*

It should be noted that, during a public participation process, these seven components do not necessarily come into play in the order that they are depicted here. Decisions on the choice of participation model, for instance, might be taken after the set of participants has been taken on board. Similarly, it is often necessary to disseminate information about the process to the general public (“getting information out”) before participation is solicited (“getting people in”).

#### a) *Initiating the process*

The first step in a public participation process is when a company or government agency contemplates a decision or problem and determines that the issue must be dealt with through the involvement of stakeholders or the public at large (Abelson et al., 2003). This decision might be influenced by the nature of the problem. For example, the problem owner might decide that public participation is required to provide accurate information or to garner public support for a proposed action (Raimond, 2001).

The decision to initiate a public participation process might also be informed by elements of the *macrosystem*. For example, legislation might specify that authorisation for a proposed activity will only be granted if a public participation process has been conducted with respect to that activity. The socio-political climate may also play a role in this regard. In particular, agencies that are *unaccustomed to sharing power* will be unlikely to invite participation in decision-making unless it is an absolute necessity (Kelly & Van Vlaederen, 1995).

b) *Selecting a public participation model*

A second step in a public participation process is often that of deciding which participation model should be used and determining what the process should look like (how events ought to be scheduled, how information will be distributed, etc.) (Ishizaka & Tanaka, 2003). Like the decision of whether or not to invite participation, these deliberations are often influenced by the macrosystem. For example, the type of model might be specified by legislation or by the type of decisions that need to be taken (Abelson et al., 2003; Daniels et al., 1996).

Another factor that influences the choice of public participation model is the problem owner's previous *experience* of alternative models. Despite their merits, novel or unfamiliar models are sometimes rejected in favour of ones that are well known but less effective (Crosby, 1995). Such conservative "gut reactions" are especially likely to be prevalent in a socio-political climate that does not encourage innovation.

c) *Getting people in*

Another step in any public involvement process is that of inviting, selecting or appointing participants. As Figure 6.1 indicates, the range of potential participants includes:

- ✓ The sponsor or problem owner;
- ✓ Representatives of government;
- ✓ Organised interest groups;
- ✓ Members of the general public;
- ✓ Parties who may be directly affected by the proposed action or decision; and
- ✓ Specialists or experts who may be able to provide essential input for the process (Allen, 1998; Webler et al., 1995).

As was mentioned earlier, the activity of choosing a participation model and that of choosing participants do not necessarily follow each other in this chronological order. In some instances, the model is selected by participants themselves. In other cases, the model is chosen by the problem owner or specified by legislation. If this is the case, the model then determines which *other* stakeholders (apart from the party that initiated the process) will be included and how participants will be selected.

Possible approaches to the selection of participants from the general public may be grouped into two categories:

- ✓ *Voluntary participation.* In this approach, the public participation process is open to anyone who wishes to become involved. The effectiveness of a process following this approach depends on the extent to which opportunities for participation have been *advertised* (Sinclair & Diduck, 2001). The issue of advertising is taken up again under the heading "Getting information out." An advantage of voluntary participation is that it ensures no-one will feel "left out." A disadvantage of this approach, however, is the fact that people with ample time and resources on their hands tend to be over-represented among volunteers (Allen, 1998; Raimond, 2001; Wellstead et al., 2003).

- ✓ *Random selection.* This approach represents “an attempt to gain the sympathy and support of outsiders, by virtue of the fact that they can picture themselves in that role. ... In theory, people who are not selected should be satisfied that their interests will be protected because there essentially is a guarantee that another person with similar interests will be selected.” However, “people who are immediately affected and not selected in the random sampling feel deprived of a fundamental democratic right to protect their own interests” (O Renn et al., 1995, p. 353). Another difficulty associated with random selection is that it can only work if a complete list of eligible candidates is available.

As was mentioned in Chapter 3, some models limit participation to representatives of *organised interest groups*, while others are also open to individual members of the public. If opportunities for participation are limited to organised interest groups, a number of additional considerations become relevant. First, it confronts interest groups with the task of deciding which of their members will represent them in the process. The remaining members are then consigned to “participation by proxy” (Baughman, 1995, p. 261). Interest groups may also decide to join forces with other groups, as “coalition building may be a strategic prerequisite for parties whose strength in negotiations may be political or legal leverage” (Baughman, 1995, p. 257).

In the majority of public participation models, the final decision of *whether or not to become involved* in the process rests with participants themselves. This decision may depend on the perceived importance of the issue, on the amount of free time that a person has available, as well as on his or her ambitions towards community leadership or a career in politics. In the case of group participation, two other factors often influence the decision to participate:

- ✓ *The expected benefits of participation.* The notion of “BATNA” (best alternative to a negotiated agreement) is a key consideration when interest groups debate on whether they should become involved in a public participation process. “No group should choose to participate ... if what it can obtain apart from the bargaining process (its BATNA) is better than what negotiation is likely to provide” (Baughman, 1995, p. 257); and
- ✓ *Accountability to constituencies.* Because representatives of interest groups often need to *justify* their decision to participate to their constituencies (Allen, 1998), most groups are unlikely to “enter a negotiation that will require it to compromise on issues of strong concern to members; as a result the group would be weakened both by member disaffection and by engendering distrust in the other bargaining partners” (Hadden, 1995, p. 248).

#### d) *Getting information in*

Accurate information on which to base deliberations is an essential component of any public participation process (Sinclair & Diduck, 2001), as “informed preferences may be considered more valuable than uninformed preferences” (Midden, 1995, p. 315). Because participants can make available to one another whatever information they have at their disposal, this component of the mesosystem is closely related to that of “getting people in.” However, it is often necessary to source information from other sources as well. For example,

participants may choose to solicit expert testimony (Saarikoski, 2000) or to commission public opinion surveys (Ball, 2002; Raimond, 2001).

e) *Getting information out*

This element of the mesosystem may be defined as the set of processes and mechanisms intended to provide information to members of the public who are not directly involved in the process. This may include information on:

- ✓ *The public participation process and opportunities to become involved.* As was mentioned above, the dissemination of such information is vital if the process relies on voluntary participation;
- ✓ *Facts related to the decisions that will be taken during the process* (Raimond, 2001). Campaigns to raise awareness or to educate citizens are often valuable to “offer them background on issues with a strong technical component” (Hadden, 1995, p. 250); and
- ✓ *Potential risks associated with decisions.* Such information is usually acquired by means of technical *risk assessments*, and its dissemination is referred to as *risk communication* (Adler & Kranowitz, 2005).

The provision of information to the general public serves a number of purposes. Apart from advertising opportunities for participation, it also serves to *ratify decisions* made by participants. This can be achieved by “convening public workshops in which [participants] explain to other ‘average citizens’ how they came to the choices they made, answer questions, exchange ideas and obtain feedback” (Armour, 1995, p. 184).

One of the difficulties associated with educating the public, however, is the fact that people usually hear only what they want to hear. Hence, “preferences are influenced by almost unavoidable information selectivity. An extensive information supply and discussion phase may also affect representativeness, as people who are less willing or able to process the information or participate in the discussions may be lost” (Midden, 1995, p. 315).

f) *Getting decisions out*

This component of the mesosystem becomes relevant once decisions have been taken and the public participation process has begun to draw to a close. It incorporates two aspects:

- ✓ *Communicating the outcomes of the process to the problem owner.* If the public participation model specifies that decisions taken by participants are binding, the problem owner must then ensure that these decisions are implemented. If their decisions are not binding, but serve as recommendations, the onus is then on the problem owner to consider these recommendations and to accept or reject them (Krannich et al., 1994). An ill-advised decision at this stage can cast the entire participation process in a negative light. For instance, if a government agency ignores recommendations that are broadly supported by the public, this may have “a negative effect on the perceived democratic quality of political decision making, eventually leading to forms of political alienation. In that sense an in itself impressive participation process can be counter-productive” (Midden, 1995, p. 318); and
- ✓ *Communicating the outcomes of the process to the general public.* If participants represent interest groups or “defined constituents to whom they are obliged” (Dienel

& Renn, 1995, p. 126), they will be required to communicate the outcomes of the process to their constituencies (Varghese, 2000; Webler et al., 1995). This step may also pose certain challenges, as “it is unlikely that a participant in negotiations who does not have the support of his or her constituents will be able to obtain concurrence for agreements emanating from the [participation] process” (Baughman, 1995, p. 258).

#### g) *Long-term social effects*

As was mentioned in Chapter 3, public participation offers a number of benefits not directly related to effective decision-making. These include the fact that the experience of participation tends to educate citizens (Fitzpatrick & Sinclair, 2003) and build their confidence (Coakes & Bishop, 2002; Webler et al., 1995). Participation may also contribute towards the redistribution of power within society. Such long-term or macro-level consequences do not result from any single public participation process, but “emerge out of infinite numbers of local experiences” (Renn et al., 1995a, p. 9).

One way in which a single participatory process can have lasting consequences beyond its sphere of direct relevance, however, is by *setting trends for future processes*. For example, if the outcome of a participatory process leads a government agency to make an exception to existing regulations or laws, this may well encourage further demands for exceptions from other citizen groups (Claus, 1995).

### 6.1.3 The microsystem – Discourse parameters

The microsystem, as defined in this model, is the heart of the public participation process. It encompasses all parties who are directly involved in the process – namely, individuals who participate in their personal capacity, those who represent stakeholder or interest groups (such as government, industry or environmental groups) and the public participation facilitator or moderator. The interaction among these role-players constitutes the dynamics of the microsystem.

As was discussed in Section 3.6.5, Webler (1995) defined the *fairness* of a public participation process as the extent to which all parties are able to participate on an equal footing in the following three types of discourse:

- ✓ Setting the *agenda* and making the *rules* for the process;
- ✓ Deciding how the rules will be *enforced*, and by whom; and
- ✓ *Discussing* the items on the agenda.

The first two items above can be grouped under the same heading, as they define the *parameters* within which discussion will take place. They are concerned with the form (as opposed to the content) of the process. To use Bateson’s (2000) terminology, they belong to a higher *logical type* than the discussion itself. Two other factors that exert an important influence on the shape of a public participation process are:

- ✓ The manner in which the central problem or objective of the process is *defined*; and
- ✓ The *physical settings* in which participants interact.



Problem definition, agenda setting, rulemaking, rule enforcement and the physical setting are discussed at greater length in paragraphs below, while the content-related dimensions of discourse are described in Section 6.1.4 below.

*a) Defining the problem*

The manner in which the objective of a public participation process is defined can have a subtle but profound influence on the course along which it progresses (Adler & Kranowitz, 2005; Allen, 1998; Ruby & Gascon, 2003; Soneryd & Ugglå, 2000). Public participation in decisions related to a proposed nuclear power station offers a good example. For some stakeholders, the problem to be addressed by public participation may simply be that of convincing citizens of the need for the power station, informing them of the associated risk (or lack thereof) and soliciting suggestions on how any negative impacts of the power station might be mitigated. For others, the central problem might be that of finding an appropriate site for the power station so that its risk and benefits are equitably distributed. Still others might cast their net even wider by bringing into consideration the environmental ethics of nuclear technology and the question of whether unrestrained growth in energy consumption is desirable.

*b) Setting the agenda*

Once the problem has been defined, the items to be included on the agenda for discussion can be identified. However, these two steps do not necessarily follow each other in chronological order. This is because agenda-setting “is a complex, dynamic process where many factors, not the least, public outrage, can force issues onto seemingly closed agendas” (Linnerooth-Bayer, 1995, p. 206). Hence, agreement on the content of an agenda can become the site of a power struggle among participants, and this content can change during the course of a process (Saarikoski, 2000).

As was mentioned above, Webler’s criteria of fairness in public participation specify that all participants should have an equal say in the contents of the agenda. Nevertheless, attempting to accommodate everyone’s desires when setting the agenda presents its own dangers. In particular, it might render the process vulnerable to “manipulation by those who would use such a policy of openness as a vehicle to stall and delay” (Mumpower, 1995, p. 325).

*c) Setting the rules*

The advantage of laying down certain rules before embarking on discussion derives from the fact that, “when a discourse is standardized by use of proven rules, the outcome is no longer totally reliant upon the competence of the participants” (Webler, 1995, p. 58). Such rules might include the standard procedures of formal meetings, such as the requirement that each speaker address the chair and that all suggestions be seconded (Buchecker et al., 2003; Ruby & Gascon, 2003). Many public participation tools (such as the Delphi technique and nominal groups) have their own built-in sets of rules.

Another important aspect of rulemaking is that of deciding who will *enforce* the rules (Allen, 1998; Ishizaka & Tanaka, 2003). This responsibility often falls upon the shoulders of the public participation facilitator. In some instances, however, the services of an independent moderator may be commissioned.

d) *Enforcing the rules*

As was mentioned above, one aspect of setting the rules for a public participation process is deciding who will be charged with the task of enforcing the rules. Executing this task therefore involves *moderating* or *facilitating* the process. This involves more than just ensuring that all participants keep to the explicit, formal rules of the process; it also entails steering the process in such a manner that participants obey the *spirit* of the rules. For instance, a facilitator has to guard against attempts by unscrupulous stakeholders to engage in covert manipulation or subtle exclusion of less powerful participants (Sinclair & Diduck, 2001).

e) *The physical setting*

The role of physical settings in shaping public participation processes has received relatively little attention in public participation literature. Nevertheless, as students of environmental psychology are well aware (see Section 5.2.7b), one's physical surroundings can have a significant influence on one's behaviour. For instance, the number of people in a room and their spatial proximity to one another may affect their levels of comfort and their ability to communicate with ease. The degree of formality attending the setting may also serve to promote or inhibit communication (DWAF, 2001; Webler et al., 1995).

The effect of physical settings on discourse may also be mediated by cultural factors. In traditional African societies, for example, it is customary for those of highest authority to be given the highest seats (Du Preez, 1997). Inattention to such customs may give offence, and thus increase the probability that conflict will arise.

#### 6.1.4 The microsystem – Discourse

Peeling away the final layer of the onion, we come at last to the *content* of discourse among participants. The structural model incorporates four dimensions for describing such discourse:

- ✓ The exchange and assimilation of information among participants;
- ✓ Interpersonal relationships among participants;
- ✓ Changes in participants' beliefs, attitudes and preferences; and
- ✓ The decisions reached by participants.

These four dimensions are discussed in greater detail below.

a) *Exchanging and assimilating information*

This element is in some respects similar to the component of the mesosystem discussed earlier under the heading "Getting information in." Whereas that component involved soliciting information from sources *other than participants themselves*, however, this one refers to processes by which participants inform and learn from one another. In other words, it involves the sharing and processing of information already *present within the system*.

The need for such exchange derives from the fact that "access to a high-quality factual data base" is not by itself sufficient for effective public participation; it needs to be accompanied by "discovery and development of mutual understandings of values among all the participants" (Mumpower, 1995, p. 326). The types of information that participants

might exchange and assimilate include disclosures about their *beliefs* (for example, their perceptions regarding the probable outcomes of alternative decisions), their *preferences* (which outcomes they would prefer) and their *values* (the reasons *why* they would prefer certain outcomes above others). They might also exchange novel *ideas* or *suggestions* for alternative decision options.

The extent to which such mutual understanding is achieved depends in part on participants' motivation. For example, some individuals might be unwilling to divulge anything about themselves, either for fear of being ridiculed or because they wish to conceal their true reasons for participating. The exchange of information is also influenced by *discourse parameters* (such as the physical setting and the successful enforcement of discourse rules) and elements of the *mesosystem* (such as the type of participation model being employed). In this regard, criticism has been levelled against the Citizens' Jury model of participation in that "the question-answer form of dialogue between jurors and witnesses has little potential to foster mutual understanding" (Armour, 1995, p. 183). Finally, the development of mutual understanding can be affected by aspects of the *macrosystem*, such as cultural or linguistic differences among participants (see Section 6.1.1a above).

#### b) *Interpersonal relationships*

As participants spend time in conversation, it is virtually inevitable that some form of personal relationship will develop among at least some of them. The greater the degree of mutual understanding among them, the higher the probability that these relationships will be of a positive nature (Carnes et al., 1998). One of the aspects of interpersonal relationships that exerts the greatest influence on public participation processes is the amount of *trust* among participants. Without trust, information supplied by others will be disbelieved and any suggested course of action will be suspected of harbouring a hidden agenda (Macnaghten & Jacobs, 1997; Raimond, 2001).

Interpersonal relationships with negative overtones can exert an equally great influence on a participation process, but in the opposite direction. For example, contemptuous or disdainful behaviour by one participant towards another might cause the recipient to withdraw from the process. Alternatively, it might elicit an aggressive response, and might easily lead to a conflict situation (Kelly & Van Vlaederen, 1995). Such scenarios are discussed at greater length in Section 6.3 below.

#### c) *Changes in beliefs and attitudes*

As participants get to know one another and come to understand one another's beliefs, preferences and values, they might undergo changes in their *own* perceptions and attitudes. For example, they might become aware of issues that they had not previously considered, and this might lead them to change their view regarding the most beneficial course of action. Such changes are a necessary (but not sufficient) condition for the *reconciliation* of beliefs and preferences – in other words, for reaching *consensus*. The reasons *why* understanding does not necessarily lead to consensus are, firstly, because some differences are truly irreconcilable (in that certain situations inevitably produce winners and losers) (Mumpower, 1995) and, secondly, because some parties "may participate with no intent to reach an agreement. They may want to use the opportunity as a stage to make statements about their unwillingness to cooperate, for example" (Renn et al., 1995a, p. 10).

When considering the dynamics of striving for consensus, it is useful to draw a distinction between reconciliation of *beliefs* and reconciliation of *values*. Many of the differences among stakeholders are rooted in misunderstanding (Consultative Forum on Mining and the Environment, 2002). Hence, neutralising such differences involves the establishment of “common frames of reference” (Baughman, 1995, p. 262) by ironing out misunderstandings and changing participants’ *beliefs* about the relevant issues and about one another.

Differences in *values* on the other hand, cannot be resolved through factual appeals. Such differences might involve some participants “valuing the health benefits, others [being] more concerned with property values, and others wishing to keep costs to a minimum [or] minimizing social disruption” (Linnerooth-Bayer, 1995, p. 215). Furthermore, while all may agree on the overall goal of safety and environmental quality, differences might arise as to the level of acceptable or tolerable impacts and the equitable distribution of risk (Raimond, 2001; Renn, 2001).

Disagreement is not always detrimental to public participation. “It is usually the diversity of opinion that enriches a proposed project and decision-making” (Consultative Forum on Mining and the Environment, 2002, p. 2), as it helps to stimulate debate and creative problem solving. Furthermore, not all public participation models or processes place equal *emphasis* on reconciling opinions and attitudes. In regulatory negotiation, for instance, the explicit goal is “to accomplish a consensus between the disputing parties, i.e. a solution of the dispute that all parties can agree upon” (Nothdurft, 1995, p. 273). This objective was defined in Chapter 3 as a *confrontational approach to dispute resolution*, as it aims to expose differences and to explore the reasons behind them. Mediation, by contrast, follows a *reconciliatory approach to dispute resolution*, as it seeks to formulate mutually acceptable trade-offs without necessarily seeking agreement on all issues.

#### d) *Decision-making*

As was mentioned in Section 3.2.1, one of the main goals of a public involvement process is to formulate or contribute to decisions that are in the best interest of the greatest number of parties without unfairly disadvantaging anyone. As was pointed out above, achieving decisions that meet this criterion is not necessarily contingent upon the reconciliation of all relevant beliefs or preferences. In some cases, disputing parties “may have opposing or incompatible interests that must be resolved through more adversarial processes such as bargaining, negotiation, and confrontation. Such problems may eventually be successfully resolved, but the key to resolution lies in balancing interests, not in reconciling them or reaching consensus” (Mumpower, 1995, p. 329).

One element that is essential to most decision-making, however, is the requirement that a broad range of feasible alternatives must be considered. Hence, the *creativity* of participants in viewing a problem from different angles and making novel connections between seemingly unrelated ideas can play a significant role in enhancing the quality of a participation process’s outcome (Ruby & Gascon, 2003; Webler, 1999). In addition, a skilled facilitator may be effective in broadening the range of alternatives that participants are willing to consider.

## 6.2 A FUNCTIONAL MAP OF THE CRITERIA FOR SUCCESSFUL PUBLIC PARTICIPATION

The structural model presented in the previous section has the advantage that it clearly outlines the broad range of variables that influence the manner in which public participation processes unfold. These range from macro-level variables such as the cultural and political context to micro-level variables such as participants' attitudes and behaviour. However, the model also has significant limitations in that it does not say anything about what actually *happens* during public participation processes. Furthermore, it does not provide more than a rough indication of how these variables are related to one another or to the criteria for the success or failure of a process. The remaining two models presented in this chapter are intended to address these shortcomings.

The first model provides an integrated view of the conditions that a public involvement process must fulfil in order to be considered effective. As was mentioned in Section 3.6.4, a distinction may be drawn between the *content objectives* of public participation (in other words, the outcomes that an effective process must deliver, or the functions that it must fulfil) and its *process objectives* (the conditions that must be created during a public participation process to ensure that it will deliver the required outcomes) (cf. Greyling, 1998). The *content objectives* of a participation process are equivalent to the *benefits* of public participation set out in Section 3.2. Hence, a public participation process will have achieved its content objectives if it *enhances the decision-making process* (by providing access to information, resolving disputes, increasing accountability and stakeholder support for decisions, etc.) and if it *empowers* individuals and communities (through education, moral development of participants, etc.). The *process objectives* of public participation, on the other hand, include the "*fairness and competence*" criteria developed by Webler (1995) and discussed in Section 3.6.5. Thus, a participation process will have achieved its process objectives if it provides all participants with an *equal opportunity* to influence the process, equips them with the best available *information* and *procedures* for structuring discourse and making decisions, etc.

Underlying the distinction between content and process objectives is the implicit assumption that, if the process objectives are met (in other words, if all participants are able to participate on an equal footing and have access to the necessary information), there is a high probability that the content objectives will also be met (in other words, the process will stand a good chance of leading to good decisions while empowering individuals and communities). However, the *causal mechanisms* by which process objectives lead to content objectives are likely to be complex, multi-faceted and mediated by a number of "hidden variables." For instance, the quality of a decision is not automatically enhanced if everyone who may be affected by it is involved in the decision-making process. It may be enhanced, however, if those individuals contribute vital knowledge of local conditions that are relevant to the decision. The provision of local knowledge may therefore be regarded as a hidden variable that mediates the relationship between fairness and decision quality.

Literature on public participation contains a large amount of information regarding such mediating variables. However, this information is scattered in a variety of publications. A review of the available literature did not yield any evidence that attempts had been made to integrate them into a coherent whole. The model presented in this section represents an attempt to achieve such a synthesis. In other words, it attempts to show *how* (and under

what conditions) fairness, competence, etc. produce processes that empower citizens and yield good decisions.

The development of the model approximated the procedure for constructing a “*future reality tree*” (see Section 4.2.2). More specifically, it involved scanning the literature on public participation for information on variables that mediate the relationship between its process objectives and content objectives, as well as on how these variables and objectives are related to one another. Conditions under which these relationships are likely to hold were also identified. This information was then collated in diagrammatic form to indicate the relationships among variables.

The model developed through this process is a complex one; it consists of just under sixty interrelated variables. In order to reduce this complexity to manageable proportions, it has been subdivided into four parts. The first part deals with the conditions under which public participation leads to *better decisions*, and is described in Section 6.2.1 below under the heading “*Making the right decisions.*” The second part deals with one of the conditions for effective decision-making – namely the requirement of effective *communication* among those who contribute to the decision. This part of the model is discussed in Section 6.2.2 under the heading “*Communicating effectively.*” The third part deals with the necessary conditions for the effective and efficient *implementation* of decisions; it is presented in under the heading “*Getting things done right*” (Section 6.2.3). This section also discusses the ways in which public participation may contribute to personal and social *empowerment*.

### 6.2.1 Making the right decisions

The figure below is a diagrammatic representation of this part of the model. Its content is discussed in the following paragraphs, where the relevant variables are referred to by the bracketed numbers in the diagram.



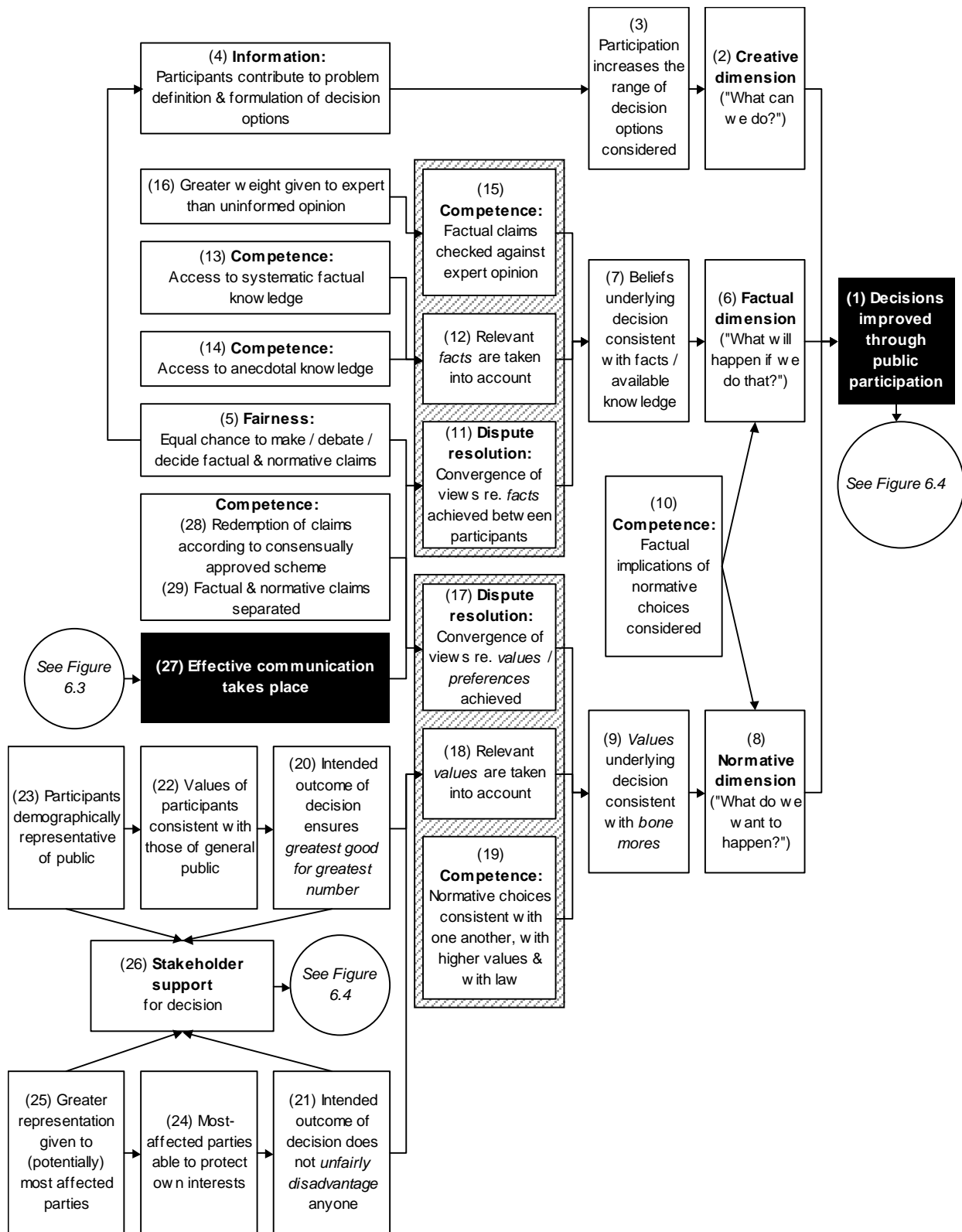


Figure 6.2 Criteria for effective decision-making

A decision-making process may be conceptualised as comprising three dimensions: a *creative dimension* ("What can we do?"), a *factual dimension* ("What will happen if we do that?") and a *normative dimension* ("What do we want to happen?") (Allen, 1998). A

“good” decision in the context of public participation (1), then, is one that meets the following conditions:

- ✓ Its *creative* dimension (2) must be such that all relevant, feasible decision options are considered (Krannich et al., 1994) (3). This, in turn, implies that stakeholders should be able to contribute towards defining the problem and generating decision options (4). This condition is dependent on the *fairness* of the process – in particular, the right of all participants to make, decide and debate factual and normative claims (Webler, 1995) (5).
- ✓ Its *factual* dimension (6) must be such that the beliefs on which the decision is based correspond to objective reality – insofar as this reality is known (7).
- ✓ Its *normative* dimension (8) must be such that the values underlying the decision are consistent with prevailing social values (9).
- ✓ Its factual and normative dimensions must also be *integrated* – in other words, the factual implications of normative choices must be considered during the decision-making process (Renn, 2001) (10). As was mentioned in Section 3.6.5b), Webler (1995) lists this condition as one of the criteria for *competent* discourse.

All three dimensions do not have the same weight in all participation models. For instance, it was mentioned earlier that the focus in *mediation* is on devising mutually acceptable trade-offs acceptable to all parties (Baughman, 1995). The success of such a process is determined primarily by the amount of *creativity* that participants and the facilitator can muster when formulating bargaining options. Under these circumstances, it is not essential the all participants agree on the relevant facts or values.

Even though participation processes may differ in terms of the relative importance of the factual, normative and creative dimensions of decision-making, it is assumed that *all three dimensions are present in all cases*. For example, even a process dominated by bargaining has to incorporate factual issues such as the probable outcomes of various actions. The social acceptability of such a process also depends on whether it takes into account the values of the public at large, and not only those of participating interest groups.

The following two sub-sections explore the factual and normative dimensions of decision-making in greater depth.

#### a) *Getting the facts right*

As was mentioned above, decisions are always made on the basis of certain beliefs, and decisions can only be effective (i.e. yield results that are in the best interests of all concerned) if they are made on the basis of *accurate* beliefs – in other words, beliefs that correspond as closely as possible to reality. The degree to which participants’ beliefs correspond to reality will be correlated with the degree to which *consensus* exists among their beliefs (11). If there are wide differences of opinion regarding objective facts, some of those opinions must necessarily be incorrect. The reconciliation of differences in opinion is an aspect of *dispute resolution*, which was mentioned in Section 3.2 as one of the functions of public participation. The conditions for achieving consensus are discussed in Section 6.2.1c) below.

Although consensus is a *necessary* condition for the adoption of accurate beliefs by all participants, it is not a *sufficient* condition: everyone might have the same opinion, but that

opinion might still be misguided. In order to ensure that participants' beliefs converge on the *correct* facts (as far as these are knowable), two additional conditions must be met. First, participants must have access to available and relevant *information* about the objective world (12). Such information should include both *systematic* (13) and *anecdotal* or *intuitive* knowledge (14). Second, factual claims should be *checked* to ensure that they are consistent with prevailing opinion in the expert community (15). This may involve inviting experts to participate in the discourse, and to give corresponding weight to their opinions (16). Webler listed both these conditions among his criteria for *competent discourse* (see Section 3.6.5b).

### b) *Getting the values right*

The conditions for ensuring that the normative dimension of a decision is consistent with acceptable social values are, in some respects, parallel to the conditions for ensuring that its *factual* dimension are consistent with knowable, objective facts:

- ✓ Just as participants must resolve disputes and reach *consensus* on the relevant facts (11), they must also reach consensus on relevant *values* and *preferences* (Webler, Tuler, & Krueger, 2001) (17).
- ✓ Whereas consensus regarding factual issues must be based on the best available *knowledge and experience* (12), consensus regarding *normative* issues must be based on *valid information regarding prevailing social values* (Renn, 2001; Wellstead et al., 2003) (18).
- ✓ Just as factual claims have to be checked for *consistency* with expert opinion (15), normative claims have to be checked for consistency with *one another*, with *higher values* and with *relevant laws* (Webler, 1995) (19).

The second requirement listed above – namely, that a decision should be based on valid information regarding prevailing social values – implies that it should meet the criterion for a “good” decision that was tentatively adopted in Section 3.2.3: it should yield the greatest benefit for the *greatest number of people* (20) *without unfairly disadvantaging anyone* (21). In other words, it should not be “dominated by private or partial interests” (Seiler, 1995, p. 146) – but it should *also* not conflict too greatly with such minority interests. For instance, landowners adjacent to the site of a planned power station may not be forced to bear the burden of risk arising from unproven technology – even if that technology will ensure a substantial reduction in energy costs for the rest of the population.

Although there are dissenting opinions in this matter (see, for example, Wellstead et al., 2003), the prevailing view in the literature appears to be that the best way of ensuring that diverse values are considered in a decision-making process is by ensuring that diverse *people* are included in the discourse (Allen, 1998). Hence, the question of how to balance minority and majority interests runs parallel to the question of *who should be included in participation*. If a decision is to be regarded as “good” by the greatest number, the values adopted by participants during the decision-making process must be representative of the values of the public at large (22). Since people from similar walks of life tend to hold similar values (Hadden, 1995), one way of achieving such consistency is by ensuring that participants are *demographically representative* of the general public (Wellstead et al., 2003) (23).

One the other hand, the requirement that decisions should not unfairly disadvantage anyone means that special consideration should be given to the interests of *those who will be directly affected by decisions* (Allen, 1998; Raimond, 2001). One way of achieving this objective is by allowing directly affected parties to represent and protect their own interests (24). This implies that special efforts should be made to include them in the discourse (25).

As was pointed out in Section 3.2.1, the mere fact that people have been consulted on a matter often makes them more supportive of consequent decisions. Hence, the amount of support that a decision enjoys (26) usually depends on how well the decision-making process is able to ensure the participation of directly affected parties while at the same time achieving broad public representation. Stakeholder support for decisions may therefore be regarded as an additional benefit derived from broad representation of interests and values in a public participation process.

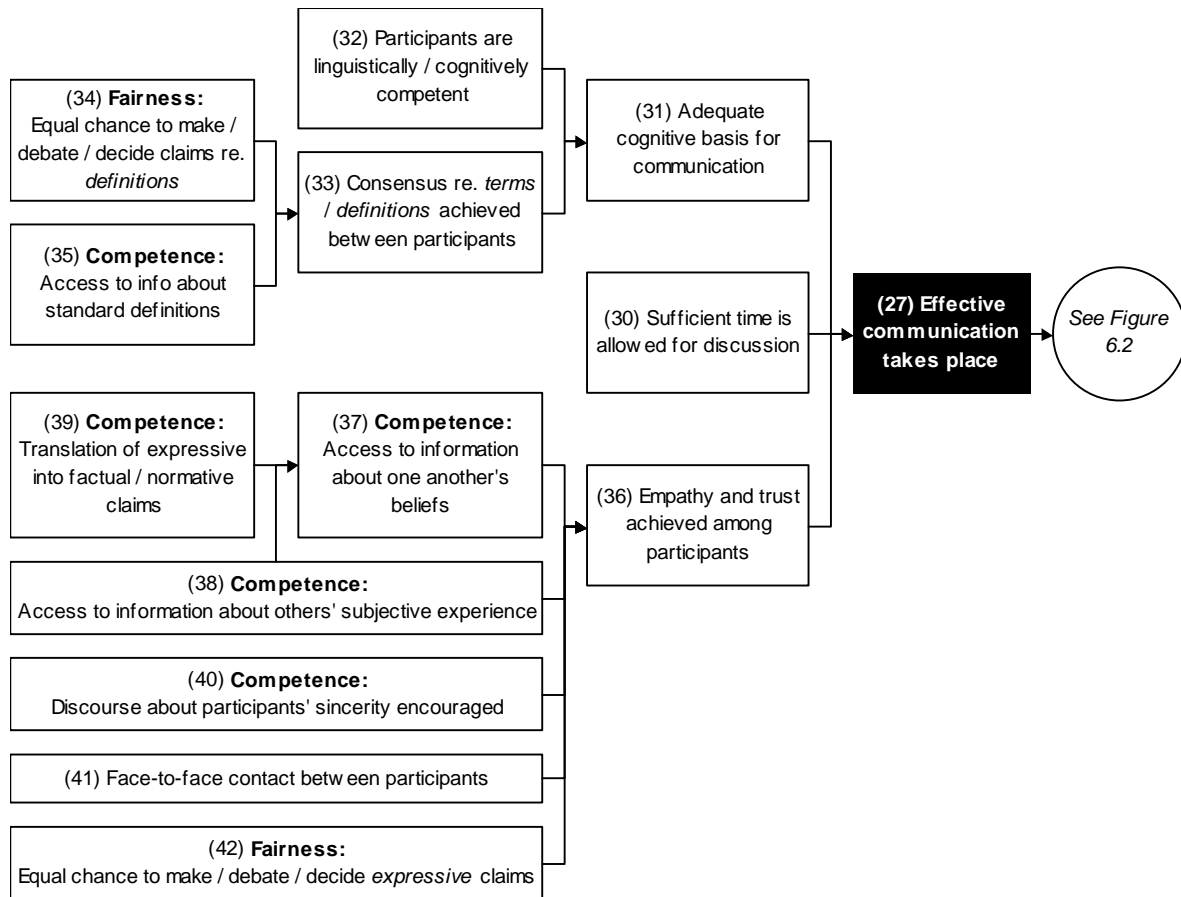
### c) *Convergence of views*

It was established above that effective decision-making has to be based on accurate knowledge and on acceptable social values. It was also pointed out that participants can only base their decisions on accurate factual and normative information if they have achieved at least a degree of *consensus* regarding such information. Achieving such consensus is, in turn, predicated on a number of conditions:

- ✓ The most basic criterion is that participants must be able to *communicate* about factual and normative issues (27) (Raimond, 2001). There are a number of conditions that have to be met in order to ensure such communication; these are discussed in the following section.
- ✓ Second, all participants must have an equal opportunity to make, debate and decide on the correctness of factual and normative claims (5). This condition, as well as the following one, is listed among Webler's "fairness" criteria (see Section 3.6.5a).
- ✓ Third, participants must have reached prior agreement on how they would handle cases in which it is not possible to reach consensus on facts. In other words, decisions about which factual claims will be redeemed by the group must be made according to a consensually approved scheme (28). This condition represents one of Webler's "competence" criteria (see Section 3.6.5b).
- ✓ Finally, the discourse must also be competent in the sense that factual and normative claims must be *separated* from one another (Webler, 1995). In other words, if a participant claims that something is morally wrong (or right), the beliefs underlying that judgement should be examined (29).

### 6.2.2 Communicating effectively

Variables related to effective communication during public participation are diagrammatically represented in Figure 6.3 below.



**Figure 6.3 Criteria for effective communication**

It was mentioned above that it is only possible for participants to achieve consensus regarding the relevant facts and values if they are able to *communicate* effectively about factual and normative issues (27). For such communication to occur, a number of conditions must be met, the most basic of which is that there must be sufficient *time* for discussion (Kelly & Van Vlaederen, 1995) (30). Another requirement is that an adequate *cognitive basis* must be established for communication (31). This, in turn, implies that:

- ✓ Participants must be *linguistically* and *cognitively* competent (Webler, 1995) (32). Linguistic competence (the ability to understand one another’s utterance) may be a problem in cross-cultural settings – an issue that will be explored in greater detail in the third model presented in this chapter.
- ✓ Participants must agree on the *meanings* of technical terms and definitions (33). As one participant in a regulatory negotiation process pointed out, “Our first task was to learn to talk to each other instead of *past* each other” (Hadden, 1995, p. 244). Reaching agreement on the meanings of terms and definitions depends, in turn, on the fairness criterion that all participants should have an *equal chance* to make, debate and decide on claims regarding the meanings of terms and definitions (34). It also depends on the competence criterion that participants should have *access to information* about standard definitions (35).

Finally, effective communication (especially communication about values) depends on the extent to which there is *empathy and trust* among participants (Ruby & Gascon, 2003) (36). The following conditions may be identified as being conducive to empathy and trust:

- ✓ Since it is often easier to sympathise with another's preferences if one understands the reasoning behind those preferences (for instance, *why* a person believes a particular course of action to be good or bad), empathy among participants may be enhanced if they have *access to information about one another's beliefs* (37). This condition is another of Webler's (1995) competence criteria.
- ✓ Empathy may also be increased if participants have access to information about one another's *feelings and subjective experience* (38). Expressive claims – in other words, claims about one's feelings and subjective experience – may also contain implicit information about one's beliefs. (For instance, if I state that I feel threatened by nuclear technology, this implies that I believe it to be dangerous.) Such implicit beliefs may be uncovered if the means exist for *translating* expressive claims into factual and normative ones (Webler, 1995) (39).
- ✓ Since empathy with another's expressive claims is quickly eroded if one believes those claims to be *insincere*, a public participation process should encourage discussion among participants about the *sincerity* of one another's statements (40). Assurance regarding a speaker's sincerity is also vital for establishing interpersonal *trust* (Ruby & Gascon, 2003).
- ✓ *Face-to-face contact* among discourse participants is another important prerequisite for empathy and trust (41). "Public participation cannot be done by remote control ... Communities require regular contact by project staff *in loco*" (SAIEA, 2003, Annexures, p. 32).
- ✓ Finally, the conditions for establishing empathy and trust among participants include Webler's fairness criterion that all participants should have an *equal chance* to make, debate and decide expressive claims – in other words, claims about their subjective experience and feelings (42).

### 6.2.3 Getting things done right

Even if a public involvement process results in "good" decisions, this does not necessarily guarantee that these decisions will be *implemented*. Hence, "the effectiveness of any public participation or consultation process should be judged by some measure of the outcomes achieved" (Abelson et al., 2003, p. 247). As was mentioned above, one variable that influences the probability that a decision will be implemented is the degree of *support* it enjoys from stakeholders (26). Thus, the range of stakeholders consulted during decision-making (23 and 25) will influence the degree of public support given to those decisions. A decision's popularity will also be enhanced if it is perceived to promote the *interests* of stakeholders (Carnes et al., 1998) (21 and 22). Other conditions that influence the implementation of decisions are discussed below.



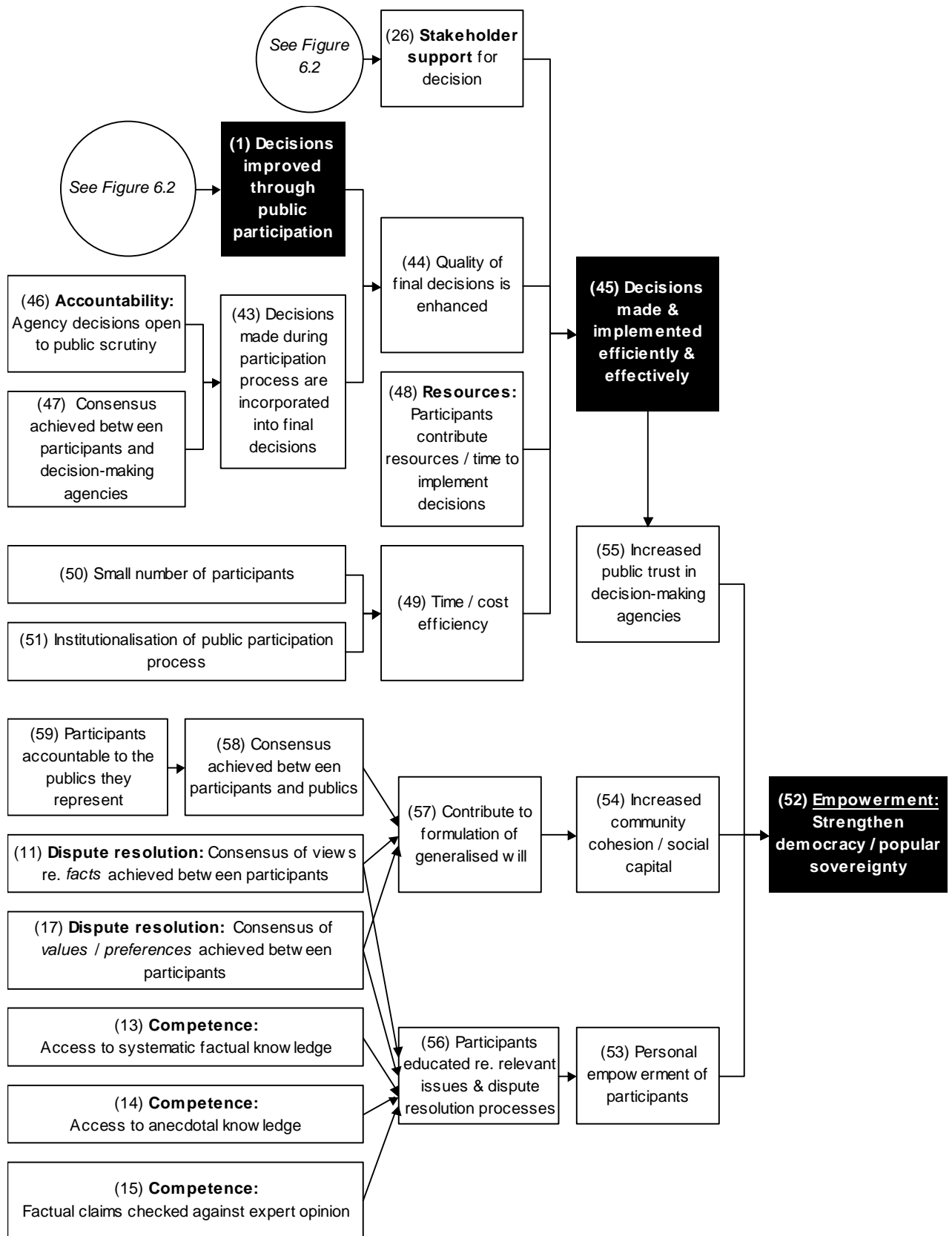


Figure 6.4 Consequences of successful public participation processes

As was mentioned in Section 3.4, decisions taken during public participation processes are not always binding; in some cases, they merely serve as *recommendations* that may be accepted or ignored by decision-making agencies. In such instances, a distinction can be drawn between *participative* decisions (decisions taken during the participative process) and *final* decisions (which will eventually be implemented, and which may be informed by participative decisions). The conditions under which participation improves decision-making (1) then need to be supplemented with conditions pertaining to the probability that such improvements will be *transferred to final decisions* (43), enhance the *quality* of those decisions (44) and contribute to their effective and efficient *implementation* (45).

Whether or not a decision taken during a public participation process is implemented effectively and efficiently depends on a number of factors:

- ✓ It was pointed out in Section 3.2 that participation increases *transparency* of decision-making in the public sphere, and therefore renders public institutions more *accountable* to their constituencies (Abelson et al., 2003) (46). Such transparency and accountability may in themselves be sufficient to ensure that recommendations arising from public participation processes are incorporated into final decisions.
- ✓ The probability that participative decisions will be carried through to implementation is further increased if participants can *convince* the *parties responsible for implementing decisions* of the soundness of those decisions (Krannich et al., 1994) (47). The latter observation amounts to an argument for *including representatives of decision-making agencies in participation processes*, as a “lack of involvement of policy-makers in [a public participation] process may contribute to their discounting the output of the process” (Armour, 1995, p. 181). If an agency decides *not* to incorporate the outcomes of a public participation process into its decisions, it should at the very least provide feedback to participants as to *why* their recommendations are not being followed (Abelson et al., 2003; Krannich et al., 1994).
- ✓ Whether or not a decision is implemented efficiently and effectively also depends on whether sufficient financial and human *resources* are available. As was mentioned in Section 3.2, members of the public may sometimes contribute such resources – for example, by donating their time to monitor the implementation and impacts of projects (48).
- ✓ Another criterion for assessing the effectiveness of a decision-making process is its *time- and cost-efficiency* (Raimond, 2001; Ruby & Gascon, 2003) (49). A number of options are available for increasing such efficiency:
  - i) One option is to *limit the number of people who may participate* (50). It is easier for people to exchange views in the context of small-group discussions than in large public meetings (Krannich et al., 1994). If the public participation process consists of a small number of parties, the probability that consensus will be achieved is also increased.
  - ii) Another option for increasing time-efficiency is to *institutionalise* participative forums (51). Such institutionalisation may involve the establishment of standing committees that are charged with the task of representing public interests, and that meet on a regular basis to discuss diverse issues. Such forums enable

participants to benefit from prolonged experience, as they “come to know each other well, to learn whether and how much to trust each other, and to share common conceptions of problem and solution, even if they may differ on specifics” (Jentoft et al., 1998, p. 430). An additional advantage is that the establishment of ongoing relationships promotes honesty among participants (Hadden, 1995).

- iii) An alternative solution is to limit opportunities of participation to *existing institutions*, which are presumed to consist of “already-organized, professional interest group staff members possessed of appropriate technical expertise” (Hadden, 1995, p. 251).

It was mentioned earlier that the functions of public participation can be grouped into two broad categories: improved decision-making and empowerment. Whereas the preceding paragraphs focused on the contributions toward improved decision-making, the remainder of this section takes up the theme of empowerment. An empowered society may be defined as one that enjoys a strong democratic ethos and popular sovereignty, and in which the majority of citizens are able to live satisfied, fulfilling lives (Boyce, 2001; Israel et al., 1994) (52). Empowerment has a number of dimensions, including:

- ✓ *Personal* empowerment (53), which involves realising the potential of individuals;
- ✓ *Social* empowerment (54), which entails building community cohesion and social capital (see Section 5.4.1b); and
- ✓ *Institutional* empowerment (55), which involves enhanced public trust in government institutions.

Public participation has the potential to contribute towards each of these three dimensions of empowerment:

- ✓ On a *personal* level, the experience of taking part in collaborative decision-making is frequently an *educational* one (56). Because participants are exposed to various kinds of information (13, 14 and 15), their general knowledge is increased. Furthermore, the fact that they are encouraged to iron out their differences (11 and 17) educates them with regard to dispute resolution techniques (Webler et al., 1995).
- ✓ The discovery of shared interests through such dispute resolution processes contributes toward the *affirmation of collective values* (57), and thereby promotes *social* empowerment (Buchecker et al., 2003; Jentoft et al., 1998, Putnam, 1993, in Abelson et al., 2003). However, whether or not a public participation process enhances social cohesion will depend on whether those to take part in the process are able to convince their constituencies of the legitimacy of their deliberations (Allen, 1998; Hadden, 1995) (58). This, in turn, will depend on whether participants feel themselves *accountable* to the broader public for their decisions (59).
- ✓ Finally, if the public perceives that government agencies are willing and able to attend to their concerns, take their suggestions into account and implement decisions efficiently and effectively, *public trust* in those institutions may be enhanced (56), thereby contributing towards *institutional* empowerment (Carnes et al., 1998; Krannich et al., 1994; Raimond, 2001).

#### 6.2.4 Trade-offs among functional criteria

The model presented above offers a number of insights into public participation. For example, it shows how fairness and competence combine with various other factors (such as appropriate mechanisms for selecting participants and the accountability of those participants to the interest groups they represent) to produce effective decisions and contribute towards the empowerment of individuals, communities and institutions. The model also makes it possible to identify a number of *tensions* or *trade-offs* in public participation. These are summarised in the figure below, where they are indicated by thick lines, and are discussed in the following paragraphs.

##### a) *Demographic representativeness versus special representation for directly affected parties*

As was mentioned in Section 6.2.1b) above, decisions taken during a public participation process should yield the greatest benefit for the greatest number of people, but without unfairly disadvantaging anyone. This requirement is enshrined in various guidelines for public participation, as well as in numerous ethical and legal codes. Section 25 of the Constitution of South Africa (Republic of South Africa (RSA), 1996), for example, refers to an “an equitable balance between the public interest and the interests of those affected.”

As was also mentioned above, the problem of deciding how to balance the interests of the minority against those of the majority is closely related to the dilemma of *who should be present (or represented) during participation* (Raimond, 2001; Sinclair & Diduck, 2001; Wellstead et al., 2003). A decision is most likely to be acceptable to the majority of people if the values underlying that decision are consistent with the values of the public at large. One method of achieving such consistency is by ensuring that participants are “a fair cross-section of the population, at least with respect to gender, education, and class” (Dienel & Renn, 1995, p. 125). Because the types of people who volunteer for public participation frequently hail from the more affluent strata of society, such representivity may be ensured through *random selection* of participants, as is the case with planning cells. On the other hand, if decisions are also to protect minority interests, it follows that those who will be *directly affected* by the decisions should be given the opportunity to protect their own interests. Hence, “the ones who are affected in a special way must be allowed to participate in a special way” (Seller, 1995, p. 147).

The tension between these two requirements arises from the fact that directly affected parties often represent a small subsection of society. For example, landowners adjacent to the site for a proposed hazardous waste facility might all belong to a particular income bracket and share similar socio-economic profiles. In such cases, it will not be possible to give preferential opportunities of participation to directly affected parties *without contravening the requirement that participants should be representative of society as a whole*.

##### b) *Representativeness versus fairness*

The requirement that participants should be representative of the general public is also difficult to reconcile with the basic requirement of *fairness* – namely, that all participants should have an *equal* chance to make, debate and decide validity claims. As was discussed in Section 3.6.5, the fairness of a participation process depends on whether its

structure and procedures are able to *neutralise power differences* (in other words, differences in terms of expertise, status, etc.) among participants. For example, a fair process is one whose rules state that all participants must be given the opportunity to state their views without fear of being interrupted or ridiculed (Webler et al., 2001).

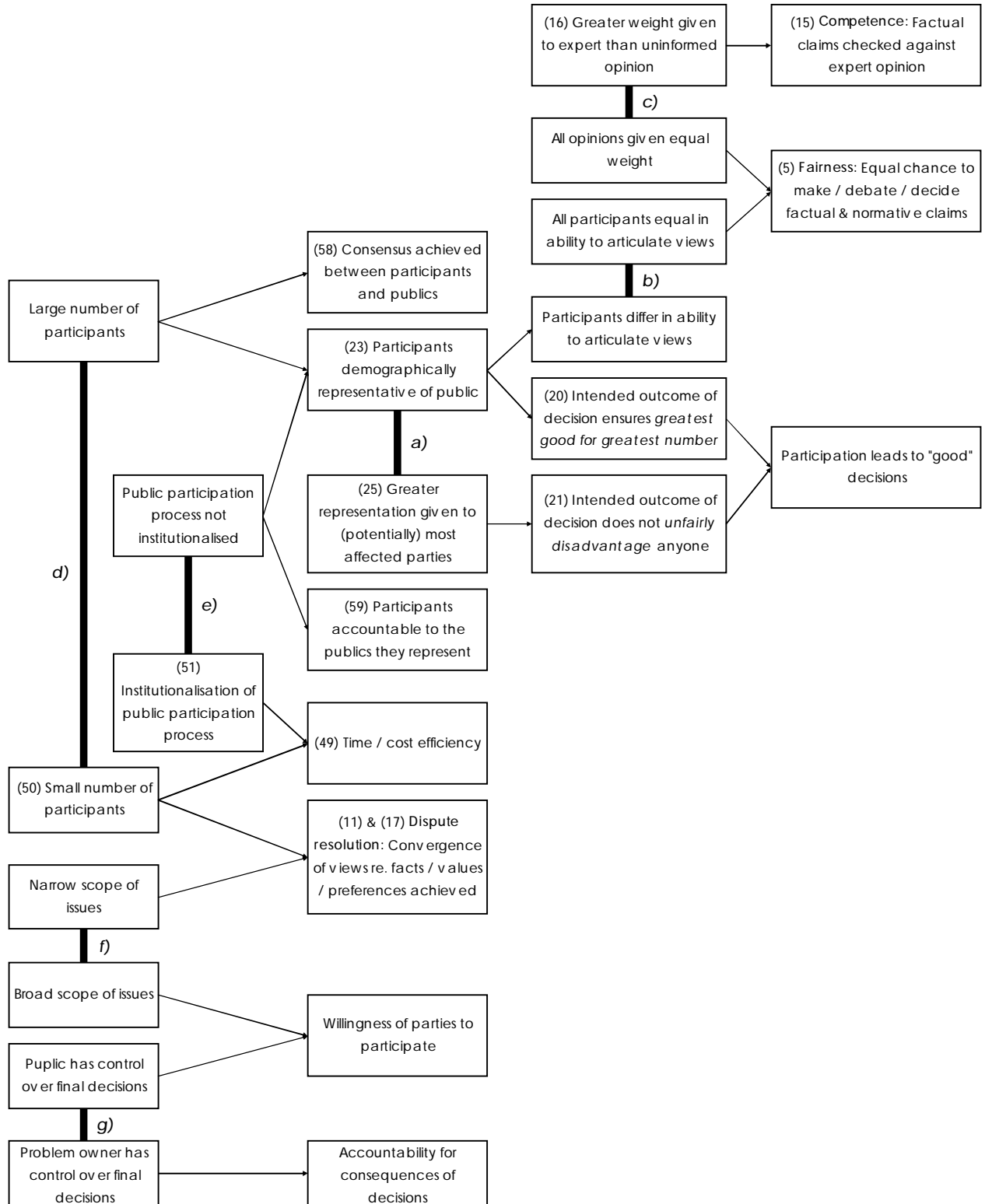


Figure 6.5 Trade-offs in public participation

In cases where significant differences exist among participants in terms of education levels and verbal skills, however, even the most skilful application of structures and procedures might not be sufficient to level the playing field completely (Abelson et al., 2003; Kelly & Van Vlaederen, 1995). More articulate individuals will still have the edge with respect to their ability to convince others of their point of view. One way of eliminating such inequalities might be to *select only those participants that are more or less equal in their ability to inform, explain and persuade*. For example, educated community leaders (rather than a cross-section of community members) could be invited to participate alongside government officials and representatives of industry.

However, restricting opportunities for participation to a narrow stratum of society conflicts with the requirement that participants should be demographically representative of the public as a whole. Community leaders, for example, do not necessarily share the same values and concerns as ordinary members of their communities (O Renn et al., 1995). In an unequal society, the insistence that a participation forum should be a microcosm of society necessarily means those inequalities will be reflected within the forum.

### c) *Popular versus expert opinion*

As was pointed out above, fairness is sometimes difficult to maintain if participants are representative of all sectors and strata of society. An additional complication (of which Webler, 1995, is well aware) is that *fairness often conflicts with competence*. It was mentioned in Section 6.2.1a) that competent decision-making may entail having factual claims checked against *expert opinion*. Doing this may well involve inviting relevant experts to join in the discourse. The opinions of those experts must then necessarily be given *more weight* than the opinions of non-expert participants. However, the criteria of fairness demand that *all participants* (experts and laypersons alike) should have an *equal chance* to make, debate and decide factual claims. In other words, everyone's opinion should count equally.

The conflict between these two requirements can pose a significant dilemma in cases where popular opinion conflicts with expert judgement. For example, informed judgement of the risk associated with a nuclear power station might suggest that the technology poses minimal risk to human health or the environment. However, members of a community adjacent to the station might be convinced (in the absence of evidence) that it will have a detrimental effect on their well-being (Yim & Vaganov, 2003). Fairness demands that the opinion of the public be regarded as no less plausible than that of the experts. However, competence demands that opinions based on years of experience in the field be given preference.

### d) *Small versus large groups*

As was mentioned in Section 6.2.3, one of the criteria of an effective public participation process is that it must be *time-* and *cost-effective*. The inclusion of this variable as a measure of success brings to light another inevitable tension in public participation. On the one hand, time is a significant variable influencing the effectiveness of *communication* among participants, and hence the probability that they will be able to reach *consensus* on relevant issues. If insufficient time is allocated for participants to explore and discuss their differences, it is unlikely that they will be able to overcome those differences (Krannich et al., 1994).



However, the allocation of more time for deliberation necessarily means that the *implementation* of decisions must be delayed. As Seiler (1995, p. 142) points out, “in most political decisions time pressure is present which prevents even the most democratically minded decision maker from discussing all the relevant topics with all the relevant and affected people.” Hence, undue delays may derail the entire planning and implementation process.

One way of overcoming this obstacle is by instituting “participation by proxy” (Baughman, 1995, p. 261) – in other words, not trying to include every interested or affected *individual*, but limiting opportunities for participation to *representatives of interest groups*. This significantly reduces the number of people involved in the process, and therefore makes it easier for participants to communicate with one another (Webler et al., 1995). Consequently, it enables the process to proceed much faster. The disadvantage of this approach is that there is often no fail-safe way of ensuring that such representatives are completely representative of, or accountable to, their constituencies. The higher the diversity of a given society, more difficult it becomes to select or elect a small group of participants that represents all relevant interests (Allen, 1998; Raimond, 2001). This challenge is similar to the fundamental statistical problem of *sampling*: the larger the variance of a population, the lower the probability that a sample of any given size will have parameters similar to those of the population from which it was drawn (Kerlinger, 1986).

Thus far, it has been established that the option of limiting opportunities for participation to small groups offers the *advantage* that it increases time-effectiveness and ease of communication, while it has the *disadvantage* of lowering the probability that participants will be representative of all relevant social interests and values. An additional disadvantage is related to the fact that, even if participants manage to attain consensus on the relevant issues, they are still faced with the task of *convincing policy-makers and other members of the general public of the validity of their decisions*. One way of meeting this challenge might be to conduct public workshops after participants have concluded their deliberations. However, the smaller the number of participants, the harder it will be for them to make their voices heard in the larger public arena (Gutmann & Thompson, 1996, in Abelson et al., 2003).

#### e) *Institutionalisation versus accountability and representativeness*

As was mentioned above, placing a limit on the number of participants represents one way of increasing the time- and cost-efficiency of public participation. An alternative route to the same destination is that of *institutionalising* participative forums (Hadden, 1995). This may involve, for instance, the establishment of standing committees that meet on a regular basis. Over time, such committees usually accumulate extensive knowledge of the relevant issues, as well as experience at collaborative problem solving (Allen, 1998).

However, such an approach also has its disadvantages: as participatory structures become formalised, “they often become out of touch with the citizens they represent. Unfulfilled demands for legitimate citizen representation eventually re-emerge” (Lynn & Kartez, 1995, p. 88). In other words, formalisation of public participation often renders participants less *accountable* to the people they are supposed to represent. The educational effects of public participation processes – which are an important aspect of their empowerment function – may therefore also serve to erode their *legitimacy* by isolating them from their social context. For this reason, some participation models (such as Planning Cells) stipulate

that participatory forums should have a *finite lifetime*. Relying on temporary assemblies to represent public interest is supposed to prevent the development of “an establishment which has self-interests” (Seiler, 1995, p. 151).

*f) Expanding versus limiting the scope of discourse*

As was mentioned in Section 6.1.3, one of the first problems that arise during a public participation process is often that of defining the nature of the problem to be addressed. Some participants might view the problem as that of identifying appropriate mechanisms to mitigate the negative consequences of a particular course of action. Others might insist, however, that the chosen course of action be put under the spotlight and that possible alternatives be discussed.

Confining the agenda to a narrow range of issues has its advantages as well as its disadvantages. The advantage is that it increases the probability that participants will be able to reach *consensus*, as it limits the number of opportunities for disagreements to arise. However, it may also reduce the *willingness of some stakeholders to participate*, as they might resent being forced to work on a limited mandate that disregards issues they consider important (Baughman, 1995).

*g) Accountability for decisions versus public control*

The final trade-off to be discussed here concerns the issue of *accountability*. In the context of public participation, accountability takes many forms. As was mentioned earlier, participants need to be accountable to the publics they represent. Accountability also implies that decisions by government agencies need to be open to public scrutiny. In addition, someone must be held accountable for managing, monitoring and evaluating the *implementation* of decisions taken during public participation.

One of the most significant weaknesses of direct democracy is with regard to this third form of accountability. No matter how laudable the goal of giving members of the public control over decisions that affect them (the upper rung of Arnstein’s ladder, which was depicted in Section 3.6.1), ordinary citizens cannot be held responsible for the *consequences* of the decisions taken during a public participation process. Such responsibility must remain with the government agency or private company that will implement those decisions. However, it is also unreasonable to expect institutions to take responsibility for plans conceived during a process over which they have had no control (Abelson et al., 2003; Webler, 1999).

### 6.2.5 Setting the structural and functional maps side by side

In Chapter 4, it was argued that one of the advantages of compiling alternative theoretical models of the same phenomenon is the potential for additional insights to emerge from a *comparison* between such models. In order to capitalise on this advantage, the two models presented thus far in this chapter were subject to an integrated analysis. What emerged from this analysis was the conclusion that many of the trade-offs and conflicts discussed in the previous section represent a *tension between the microsystem and the mesosystem of public participation*. An emphasis on *internal dynamics* (in other words, on the quality of discourse within a process) often comes at the cost of *embeddedness* (in other words, the links between the participation process and its socio-political context).

Consider, for example, the tension between the requirement that participants should be broadly representative of society and the requirement that they should all be able to participate on an equal footing (which was discussed in Section 6.2.4c above). Representativeness is an aspect of the *mesosystem* of public participation; it relates to the mechanisms by which stakeholders are drawn into the process. Fairness in discourse, on the other hand, is an attribute of the *microsystem*.

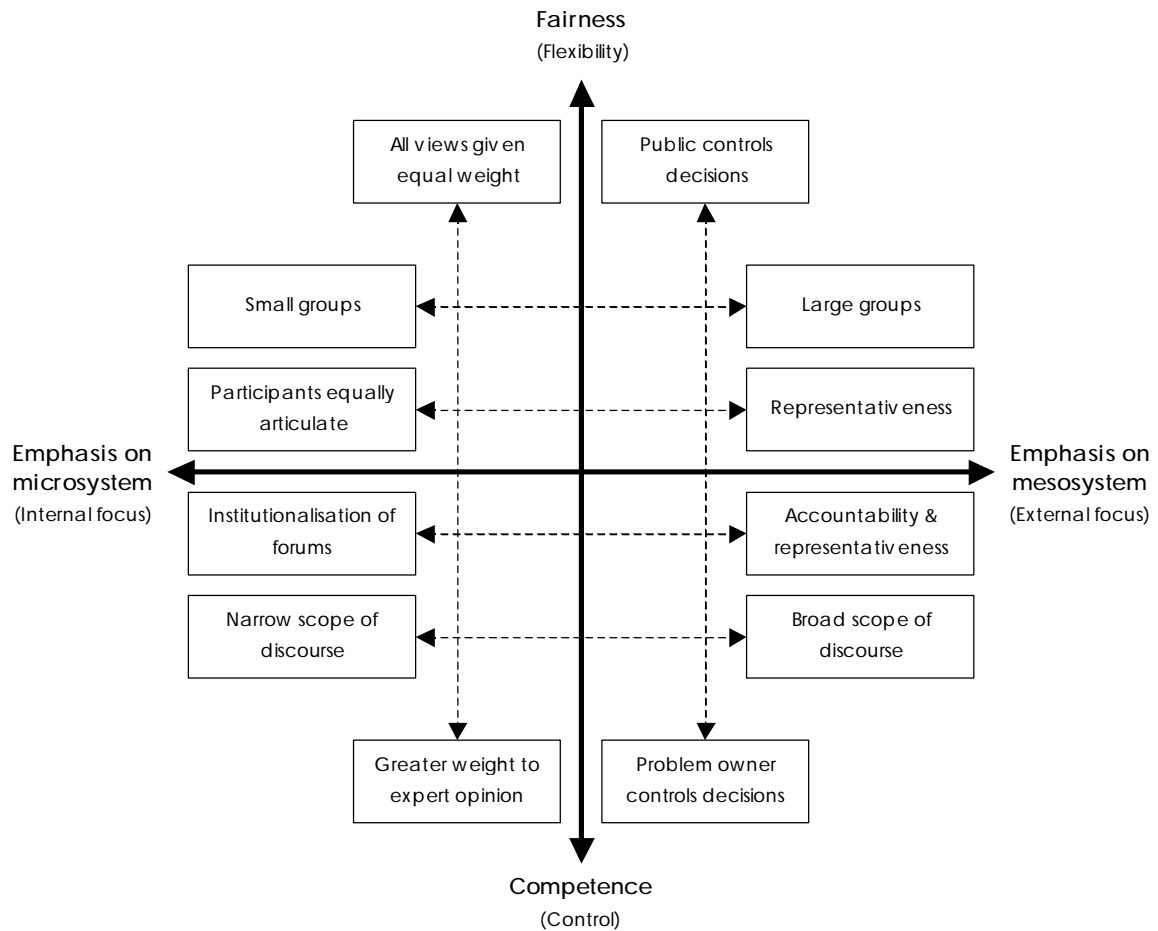
A similar tension can be discerned when considering the relative advantages of small and large groups in participation. It was argued in Section 6.2.4d) above that a preference for large numbers of participants is usually motivated by a need to ensure that all sectors and interests in society are adequately represented. Hence, it betrays an emphasis on the *mesosystem*. Small groups, on the other hand, serve the needs of the *microsystem* by enhancing efficiency and increasing the effectiveness of communication among participants.

This theme is repeated in the trade-off between institutionalisation of public participation forums, on the one hand, and accountability and representativeness on the other. As was pointed out in Section 6.2.4e) above, institutionalisation promotes time- and cost-efficiency. Hence, it prioritises the *microsystem*, while accountability and representativeness are both concerned with aspects of the *mesosystem*. Likewise, broadening the range of issues on the agenda (Section 6.2.4f) emphasises the *mesosystem*, as it serves to increase the willingness of stakeholders to participate. Narrowing the scope of discussion, on the other hand, focuses on the *microsystem*, as it increases the probability that the process will result in consensus.

It should be noted, however, that not all trade-offs in public participation can be stretched onto the Procrustean bed of conflicts between *microsystem* and *mesosystem*. Some can be traced to a tension between Weblert's criteria of *fairness* and *competence*. The problem of balancing popular and expert opinion has already been mentioned in Section 6.2.4c) above as an example. Both of these criteria pertain to discourse among participants – in other words, to the *microsystem*. Another example is the tension between public control and accountability for decisions taken during public participation (Section 6.2.4g above). Both these criteria are related to the implementation of decisions, which is an aspect of the *mesosystem*. Public control, however, is related to the requirement of ensuring fairness, while accountability is most closely aligned to the need for competence.

These two types of trade-off (*microsystem* vs. *mesosystem* and *fairness* vs. *competence*) can be integrated by means of the *Competing Values Model* (Quinn & Rohrbaugh, 1981), which was discussed in Section 3.6.2. The model posits that contrasting perspectives on decision-making can be arranged on a two-dimensional continuum. One dimension ranges from high *control* over the decision-making process to high *flexibility*. The contrast between the two extremes on this dimension is closely analogous to the difference between an emphasis on competence (which implies control) and an emphasis on fairness.

The second dimension of the *Competing Values Model* ranges from an *internal* to an *external* focus in the decision-making process. In the context of public participation, an internal focus implies giving priority to the *microsystem*, while an external focus leans towards the needs of the *mesosystem*. The figure below illustrates the similarities and differences among the various trade-offs in public participation by means of this continuum.



**Figure 6.6 Trade-offs in public participation viewed through the lens of the Competing Values Model**

### 6.3 A PROCESS MAP OF PROBLEMS IN PUBLIC PARTICIPATION

The functional model presented in the previous section focuses on what *should* happen during public participation, and why. The model developed in this section takes the opposite perspective: it concentrates on what should *not* happen in public participation, and on why these events sometimes *do* occur. It is referred to as a “process model” because it emphasises the *sequential* manner in which problems often develop during a public involvement process. In this respect, it differs from the preceding functional model, in which the relationships among elements were *logical* rather than temporal.

The model was constructed by conducting a review of literature indicating frequent problems in public participation, and obtaining information from this literature as to the most common causes and consequences of such problems. Hence, whereas the functional map

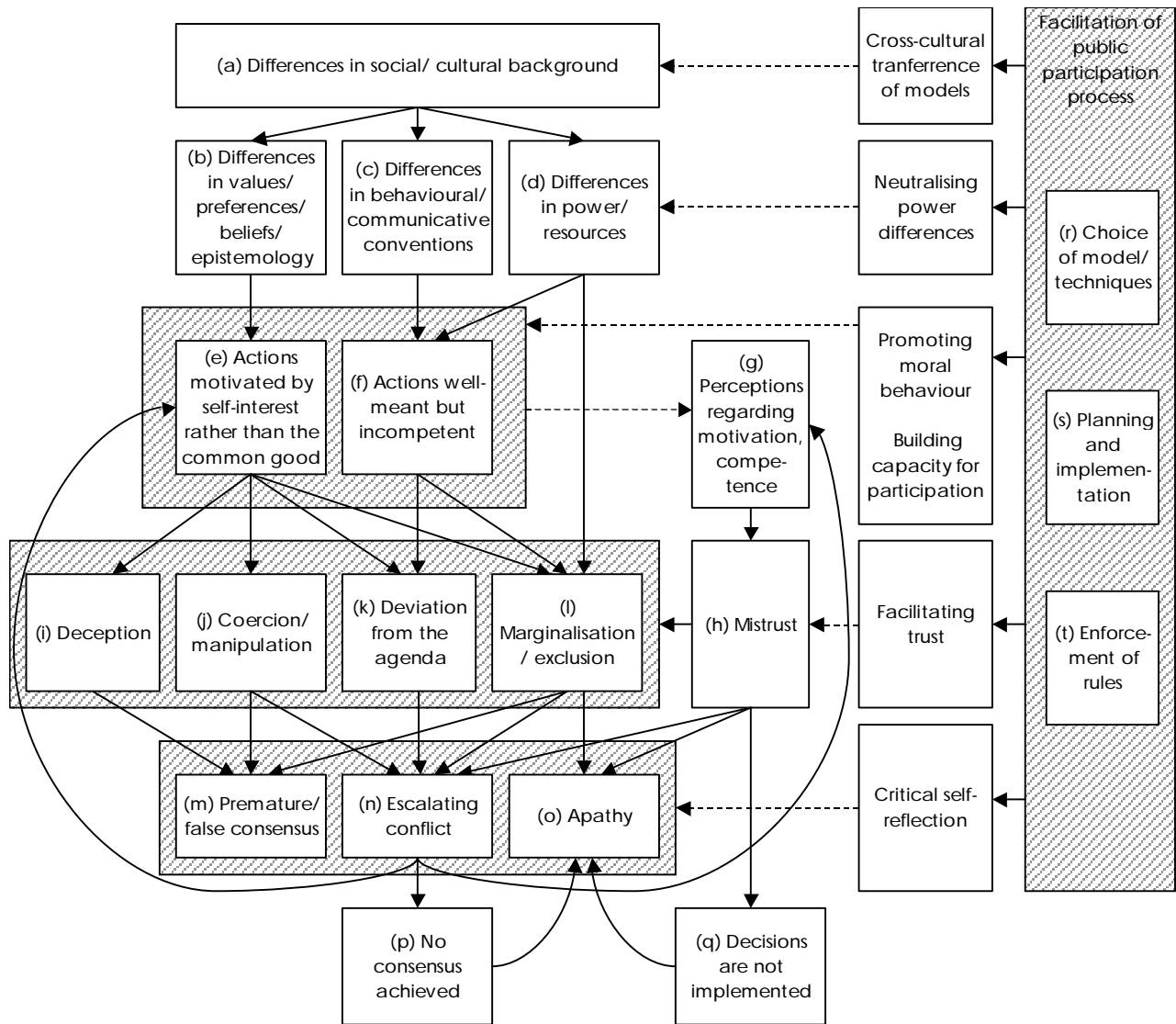
in the previous section was patterned on a “*future reality tree*” depicting what public participation *should* do, this model resembles a “*current reality tree*” depicting its *current constraints* (see Section 4.2.2). As the following sections will reveal, the results of the literature survey suggest that counterproductive behaviour during public participation processes (such as deception, coercion or manipulation of participants by one another) can be traced to three basic causes:

- ✓ *Self-interest* at the cost of the common good;
- ✓ Insufficient *competence* to assimilate the necessary information or to abide by the rules of the process; and
- ✓ *Mistrust* among participants.

This view is consistent with some of the theories of inter-group conflict discussed in Section 5.4.4. In particular, it resonates with:

- ✓ *Principled negotiation theory*, which views conflict as being caused primarily by competition for resources and a tendency of conflicting parties to adopt a self-interested “winner-takes-all” approach;
- ✓ *Intercultural miscommunication theory*, which holds that conflict is caused by incompatible cultural styles of communication. As will be shown below, such cross-cultural misunderstandings may inhibit participants’ ability to assimilate information or participate meaningfully in the process; and
- ✓ *Community relations theory*, which assumes that conflict is caused by polarisation, mistrust and hostility between groups within a community.

The model traces the roots of self-interest, incompetence and mistrust among participants, and delineates the possible effects of counterproductive behaviour on the outcomes of a public participation process. Various challenges related to *facilitating* public participation processes so as to avoid these problems are also identified. A graphical summary of the model is presented in the figure below. In the text that follows, the bracketed letters – (a), (b), (c), etc. – refer to numbered elements in this figure.



**Figure 6.7 An outline of problems in public participation**

### 6.3.1 Differences in social and cultural background

It was argued in Section 6.1.1 that the *social and cultural context* (a) of a public participation process is one of the elements of the macrosystem that exerts a significant influence on the manner in which the process will unfold. This is because a person’s cultural background and socio-economic status play a decisive role in shaping his or her worldview, habits and circumstances. Duncker (1999, p. 51) argues that social and cultural differences among people and groups often present a “major stumbling block for participation” – a view also expressed in numerous other publications (such as Boyle, 1998; Dube & Swatuk, 2002; DWAF, 2001; Mayo, 2000; and Simelane, 2001). Nevertheless, it should be noted that such differences do not always constitute a disadvantage. For example, the “cultural and political diversity which characterises international issue arenas actually facilitate effective environmental mediation” (Baughman, 1995, p. 264). Such beneficial effects may be



ascribed to the fact that diversity of participants increases the range of possible solutions that are considered during a participation process.

This note of optimism is temporarily disregarded, however, as the following paragraphs focus on three aspects of social and cultural diversity that frequently cause problems in public participation. These are:

- ✓ Differences in values, preferences, beliefs and epistemology (b);
- ✓ Differences in behavioural and communicative conventions (c); and
- ✓ Differences in power and resources (d).

a) *Differences in values, preferences, beliefs and epistemology*

The relationship between fundamental values, derived values (or preferences), beliefs and epistemology was defined in Section 5.2.5b). It was argued that a person's *preferences* might change in response to evidence that alters one's beliefs regarding the likely consequences of actions or events. Fundamental *values*, on the other hand, denote the things that one regards as good or important in and of themselves – not things that are good or important because they are a means to an end. Hence, they are not subject to change on the basis of modified beliefs about means-ends relationships. Finally, a person's *epistemology* was defined as a set of core beliefs at the same basic level as one's fundamental values. These ideas are likewise not subject to revision in the light of evidence, since they determine what one regards as "credible evidence."

As was mentioned in Section 5.4.5, people's beliefs, values and epistemologies all reflect their upbringing and current way of life. Hence, public participation processes in cross-cultural settings are often characterised by wide diversity among stakeholders in terms of what they regard as good or true (Ball, 2002; Kelly & Van Vlaederen, 1995). Even in fairly homogenous groups, differences in this regard are sometimes evident among people from different walks of life (Wellstead et al., 2003). (An engineer and an artist, for example, may have contrasting ideas about the value of technology.) Because any of these differences may lead to divergent preferences with regard to the outcome of a public participation process, they are a frequent cause of conflict among participants (Krannich et al., 1994).

Several examples of disputes among participants that have their basis in incompatible *beliefs* have already been offered on the preceding pages. For example, it was pointed out in Section 6.2.4 that laypersons and experts might have differing views of the *risks* associated with a proposed action. As Baughman (1995), Healy(2001) and others have pointed out, such differences may even be a cause of division among experts. For instance, even though there might be general agreement that human actions affect the environment, "the severity of these effects are often highly disputed by the scientific community" (Baughman, 1995, p. 253). Such disputes are especially prominent in public participation processes characterised by "advocacy science" – in other words, processes in which the battle lines are drawn in terms of "my expert versus your expert" (Baughman, 1995, p. 258).

The types of *value differences* that most often lead to conflicts in public participation are most probably those related to an *altruistic* versus an *egoistic* or *partisan* orientation. For example, some stakeholders might be primarily concerned with global environmental consequences of an action, while others might be thinking more of the potential for short-

term, personal gain (Abelson, 2001). Value disputes among participants may also have their roots in differing views on the need for economic growth or the ethics of exploiting the environment for human benefit, or in different answers to questions such as: “should society develop technologies that we cannot fully control? Should society expose future generations to potential long-term costs and risks which we do not fully understand?” (Kunreuther, 1995, p. 285)

The role of *epistemological* differences in shaping public participation processes is also acknowledged by more than one author. For example, Nothdurft (1995, p. 277) points out that “making convincing arguments depends on culturally established ... ‘good reasons’ ... and positively sanctioned inferences.” Hence, if participants have different ideas about what constitutes “good reasons” or “sound inferences,” presenting all of them with identical information regarding the merits and risks of a proposed action *may not be sufficient* to bring about a convergence of opinion.

#### b) *Differences in behavioural and communicative conventions*

A person’s culture and social background not only determine what one believes or values; they also determine how one speaks and acts, and what one regards as appropriate behaviour in a given situation. Differences among stakeholders in this regard pose a number of challenges for public participation. A few of these are listed below:

- ✓ Difference in *mother tongue* may create communicative barriers among participants from different ethnic background (Sekgobela, 1986). Intra-cultural differences in *linguistic competence*, which may exist among participants with different socio-economic standing or education levels even if they belong to the same ethnic group, may impose similar barriers.
- ✓ Culturally determined differences in the interpretation of *body language* may give rise to misunderstandings regarding the motives of other participants. An example in the South African context is the fact that, in African tradition, averting one’s eyes while conversing with someone is regarded as a sign of respect. For most Westerners, however, avoidance of eye contact during a conversation is regarded as evidence of being “shifty, having something to hide or being sulky” (Du Preez, 1997, p. 71).
- ✓ Members of different cultures may also differ in terms of their *willingness to engage in confrontation*. Du Preez (1997, p. 89) points out, as an example, that the “basis of good manners in African culture ... is to make the other person feel good. One should never cause another to lose ‘face’ or embarrass him, particularly in front of others. Consequently, the African person would rather be dishonest than confrontational.” This attribute – which is shared by some Asian cultures (Boyle, 1998) – often manifests itself in contexts of collective decision-making as an unwillingness to openly disagree with a person of high status. *Who* says what is regarded as being no less important than *what* is said.
- ✓ Furthermore, differences may exist among cultures regarding their *preferred modes of decision-making*. Once again, the contrast between Western and traditional African cultures supplies an illustrative example. As was pointed out in Chapter 3, Western political culture has a long history of democratic decision-making in which resolutions are determined by the casting of votes. Within this culture, individual

freedom of speech enjoys an important place. In many African cultures, however, people “generally feel uncomfortable with individual opinions” (Du Preez, 1997, p. 34), and the expression of dissenting views is sometimes regarded as detrimental to social harmony. In this culture, decisions are usually taken on the basis of consensus rather than debate or majority votes. Once again, some Oriental cultures are similar in this respect. Boyle (1998, p. 103), for example, notes that “the Javanese are a consensus-seeking culture with a strong tradition in decision-making of *mufaket* (unanimous consent of all involved) through *musyawarak* (intensive deliberation). Thus, extended discussion precedes any decision, and any premature taking of positions, criticism, and confrontation is avoided.” Such differences might also exist within sub-groups of the same culture. Buchecker (2003, p. 33), for instance, has observed that some rural European communities are characterised by the “persistence of a traditional way of thinking, which is based on rigid rules and does not allow individual deviation – an indispensable prerequisite for a direct participation.”

c) *Differences in power and resources*

There are a variety of resources that a person or group can bring into a public participation process. These include *financial* resources, *material* resources (such as physical assets), *knowledge* resources (such as education) (Abelson et al., 2003; Kelly & Van Vlaederen, 1995) and *social* resources (such as membership of existing organisations or networks) (Krannich et al., 1994). The degree to which a party has access to such resources is usually related to that party’s socioeconomic status. For example, those born into a life of privilege find it easier to make more money, are frequently better educated, tend to be better connected and are more able to organise or mobilise themselves if the need arises (Atal, 1997; Barberton, 1998; Roseland, 2000).

As a consequence of inequalities in the distribution of such resources, parties often differ in their power to influence public participation processes. For instance, the wealthy are more able to hire experts to testify in their favour (Saarikoski, 2000), while the poor frequently lack access to transport to attend meetings or public events. As was mentioned in Section 6.2.4, participants who are better educated tend to be more articulate, and thus more able to persuade others of their point of view. The poorly educated, by contrast, often lack the confidence to participate actively in a mixed group (Kelly & Van Vlaederen, 1995). In addition, because people with limited education generally have limited awareness of environmental issues or political processes, they might not understand the need to participate (Boyle, 1998; Hadden, 1995; SAIEA, 2005). It is also very difficult to ensure that “groups or interests which exist latently but are not organized” enjoy adequate representation in public participation processes (Crosby, 1995, p. 166).

Hence, while public participation can be a means of empowerment, it may also have the opposite effect. The danger always exists that only those who are already empowered will be willing or able to participate. As a consequence, the benefits of participation may be disproportionately distributed, thus exacerbating existing social inequalities (Dube & Swatuk, 2002).

### 6.3.2 Self-interest

As was suggested earlier, *self-interest* – or a tendency of some participants to act according to their own interests without consideration of the interests of others – is one of the central problems with which public participation has to contend. Self-interest represents a particular *value orientation*, which in turn may have its roots in people’s social and cultural background; hence the arrows connecting (a) to (b) and (b) to (e) in Figure 6.7 above.

Participants motivated by self-interest are often not interested in reaching mutual understanding or consensus with other participants. Instead, they may view public participation as “a platform to further their own agendas” (DWAF, 2001, p. 9), to “prevent their opponents from being better off [or] to receive public support” (Nothdurft, 1995, p. 275). A few examples of selfish interests in public participation are provided below. These have been categorised in terms of the role-players most likely to be motivated by such interests.

#### a) *Members of the public*

Self-interest among communities or individuals that stand to be affected by a proposed action frequently manifests itself as the *NIMBY* (“*Not-In-My-Back-Yard!*”) *syndrome*. This term refers to “fervent local citizen opposition to siting proposals or land-use activities with potential adverse impacts” (Webler & Renn, 1995, p. 27). *NIMBY* responses have increased significantly in frequency over the last few decades. This trend may be explained by increased public awareness of environmental issues and the explosion of publicly available information on risk (Freudenburg & Susan, 1992). The fact that it has earned the status of an acronym attests to its prevalence.

A *NIMBY* response is “a very formidable reaction [as it virtually gives citizens] a *de facto* veto over siting decisions, despite legal provisions allowing legislative overrides of local opposition” (Webler & Renn, 1995, p. 27). *NIMBY*-related behaviour is frequently characterised by social mobilisation, acrimonious verbal exchanges and accusations that project proponents are exploiting innocent citizens for financial gain while authorities turn a blind eye. It also sometimes contains an element of dishonesty. For example, participants may use environmental concerns as a smokescreen to guard their own interests (Brion, 1991; Inhaber, 1998).

Classifying the *NIMBY* response under the heading of “self-interest,” as was done here, implicitly assumes that selfishness is the prime motivating factor behind such a response. However, it should be noted for completeness’ sake that this assumption is not necessarily correct. Two alternative theories have been developed to explain the *NIMBY* response to perceived or actual risks (Freudenburg & Susan, 1992). The first theory states that *NIMBY* behaviour should not be regarded as evidence that the public is selfish, but as confirmation of the fact that people are often *ignorant* and *irrational*. For example, if citizens make unsubstantiated claims that a proposed development will have disastrous consequences for the environment and for human health, it should not immediately be assumed that these claims are strategic in nature. It is very possible that those citizens believe their own claims. If this theory is correct, the *NIMBY* syndrome should not be classified as an instance of self-interest, but should be placed under the heading of *incompetence* (Section 6.3.3 below).

The other alternative theory is that a *NIMBY* response is neither selfish nor irrational and ignorant, but *prudent*. Supporters of this theory cite as evidence the fact that organised

protests sometimes uncover elements of the “big picture” (for example, the fact that a project proponent lacks the necessary capacity or motivation to monitor and control the impacts of a proposed development) that may have been missed by science-based risk assessments. If this theory is true, NIMBY responses should not be regarded as a problem at all, but as a vital mechanism to ensure that public participation leads to acceptable decisions (Freudenburg & Susan, 1992).

**b) Project proponents**

As was mentioned in Section 3.5.2, a public participation process often forms part of an *environmental impact assessment* legally required to obtain authorisation for a proposed development or infrastructure project. In many countries (including South Africa), legislation specifies that the public participation process must be conducted by an *independent* facilitator. Since project proponents usually have a significant economic stake in obtaining authorisation for their plans, however, they may be tempted to “become too involved in attempting to direct the environmental assessment and public participation processes” (SAIEA, 2005, p. 18). For example, they may try to silence opposition or to downplay the possible risks associated with their plans. Such attempts may compromise the independence of the public participation facilitator and undermine the legitimacy of the process (Sinclair & Diduck, 2001).

**c) Interest groups**

Interest groups such as environmental organisations may also have a stake in the issuance of environmental authorisation for proposed projects. Whereas project proponents may be motivated to manipulate a process to enhance the probability of obtaining authorisation, however, such interest groups may employ whatever means they have at their disposal to *prevent* the authorisation of projects they perceive as a threat to their agenda (Wellstead et al., 2003). Thus, the problems that public participation facilitators have to contend with include frequent “attempts by activists to influence the participatory process, sometimes even before it has begun” (Renn et al., 1995b, p. 5).

Such attempts at influence may take the form of *lobbying*, and may involve stimulating public opposition by painting a picture of a proposed project that is as one-sided as that provided by the project proponent – but in the opposite direction. In other words, it might emphasise the risks and ignore the benefits (such as job creation, etc.) of a project. The more influential the participation forum, the greater the probability that it will be the target of extensive lobbying.

**d) Politicians**

While lobbying by interest groups may be directed at members of the public, they may also target politicians. Such activities may be motivated by the fact that decisions in public participation processes are often swayed by “political strength of the parties rather than ... rational argument” (O Renn et al., 1995, p. 349). Politicians, in turn, may attempt to use public participation processes for their own gain. For example, they might capitalise on conflicts by backing whatever cause they perceive as most likely to enhance their public visibility or garner support in the next elections (Del Furia & Wallace-Jones, 2000).

### 6.3.3 Incompetence

As the previous section indicates, many of the problems frequently encountered in public participation stem from a tendency of stakeholders to place their own immediate interests ahead of the common good. However, even when actions by participants are well meant, they might still be *incompetent* (f) in that they fall short from the criteria of rationality in one way or another. As Figure 6.7 illustrates, incompetent or inept behaviour during public participation may arise from two factors related to participants' social and cultural background:

- ✓ *Differences in communicative or behavioural conventions.* For example, participants whose mother tongue differs with that in which project-related information is presented might misinterpret such information; and
- ✓ *Differences in power and resources.* For instance, participants with limited education might lack confidence in their own ability to understand technical information, and might thus not even try to master such information.

Competence may also be affected by other factors not related to cultural or socio-economic variables. These include:

- ✓ *The physical setting of participation.* As was mentioned in Section 6.1.3, the spatial arrangement of people in a room and the presence or absence of distracting factors may influence participants' ability and motivation to attend to information that is presented to them; and
- ✓ *The complexity of issues.* It was mentioned in Section 5.4.1a) that information load can influence the quality of group decisions. The greater the amount of information that needs to be considered before deciding on an issue, and the more extensive the background knowledge required to understand this information, the higher the probability that some of this information will be neglected.

Thus, whereas the pursuit of self-interest represents a *deliberate choice*, incompetence is *unintentional*. Instances of incompetence that often occur in public participation may be grouped under five headings:

- ✓ Failure to assimilate available information;
- ✓ Framing effects;
- ✓ Misunderstandings and unrealistic expectations;
- ✓ Negative reactions to perceived loss of control; and
- ✓ Aversion to change.

These are described in more detail below.

#### a) *Failure to assimilate available information*

The following two examples illustrate the alternative forms that this problem may take:

- ✓ The first example concerns the application of Dutch Study Groups to develop a national energy policy, which was discussed in Section 3.4.5i). Despite an intensive public information campaign, pre- and post-test comparisons found that general



levels of knowledge regarding energy issues had not increased significantly (Midden, 1995) during the public participation process.

- ▼ The second example concerns a recent public participation process in South Africa, in which “neighbours were much more upset about the constant nuisance effects of dust from mine dumps in their area than about the carcinogenic Chrome 6 that could be generated in a proposed ferrochrome plant” (Consultative Forum on Mining and the Environment, 2002, p. 71). This example illustrates the fact that “the emotion or fashion of the moment [can sometimes be] permitted to dictate a decision that flies in the face of firm scientific evidence or professional judgement” (Webler & Renn, 1995, p. 28). To put it another way, “the risks that kill people and the risks that upset people are often completely different” (Consultative Forum on Mining and the Environment, 2002, p. 71).

### b) Framing effects

It was pointed out in Section 5.2.2b) that sensitivity to framing (that is, to the manner in which information is presented and the images that are implicitly evoked) is an inherent property of the human mind. For example, if decision options are portrayed in terms of possible gains, people tend to be *risk averse*, thus preferring options that offer a large probability of small gains to those offering a small probability of large gains. However, if the same options are presented in terms of potential losses, people tend to become *risk seeking* – in other words, they tend to prefer options with a small probability of no losses to those with a large probability of significant losses. In the context of public involvement processes related to the siting of hazardous infrastructure such as waste facilities, it has also been found that participants “are much more likely to be concerned with the potential negative impacts of hosting a waste facility than they are to be attracted by benefits of the same magnitude” (Kunreuther, 1995, p. 286).

The foregoing examples refer to framing effects that might arise during *discourse* related to a particular problem. However, they might also occur during *problem definition*, which was defined in the structural model (Section 6.1) as an aspect of *discourse parameters*. An example of framing effects at this level is the fact that project proponents and specialists may define a problem as a dispute about *factual* issues, such as the magnitudes and probabilities associated with various risks. However, members of the public may frame the same problem in a different way: they might regard it as a *normative* debate about the ethics of exposing people to risk against their will, etc. (O Renn et al., 1995).

### c) Misunderstandings and unrealistic expectations

The example offered above of differences in the framing of problems also illustrates one way in which *misunderstandings* might arise among participants. If members of the public interpret a problem as a *value dispute* while the technical team regards it as a difference of opinion about *facts*, citizens’ value-based arguments may easily be “misunderstood by experts as ‘irrationality’ on the part of the public” (O Renn et al., 1995, p. 357).

Other examples of misunderstandings are more prosaic. In the personal experience of the author, notices of public meetings are often interpreted as job advertisements – probably because they usually appear in the classified section of newspapers. Consequently, the public participation office might be inundated with letters and curricula vitae from hopeful

applicants. The tendency of public participation processes to give rise to *unrealistic expectations* has been noted by several other authors (for example, Oceau, 1999; Raimond, 2001; Sekgobela, 1986).

d) *Perceived control*

There is evidence to suggest that stakeholders' evaluation of an event often depends more on the extent to which they perceive that event to be under their control than on its intrinsic desirability. An illustrative example is provided by the public participation process for the proposed Gautrain – a high-speed passenger rail that will connect Pretoria, Johannesburg and Johannesburg International Airport (Bohlweki, 2002; Uys, Bews, & Hattingh, 2002). The project elicited considerable outcry from communities adjacent to the proposed route alignments, mostly because the project will involve the expropriation of some private land.

One community, however, was able to come to an amicable agreement with the project proponent. Members of this community developed their own proposal regarding compensation for the loss of land currently being used as a horse trail. According to the public participation facilitator, Ms Nanette Hattingh (2003), their satisfaction with this solution stemmed at least in part from the fact that they had thought of it themselves.

Conversely, a perceived lack of control often induces feelings of uncertainty and anxiety, which in turn can result in emotional or even aggressive behaviour. There is reason to suspect, however, that it is not the perceived lack of control *per se* that elicits negative responses, but the experience of having less control over one's circumstances than one is accustomed to. For example, Ms Hattingh observed that the greatest resistance to the Gautrain project did not come from poorer communities – who would generally suffer the greatest negative impacts – but from the more affluent communities (who actually had greater resources to weather disruptive changes in their lives). It is possible that wealthier people are more used to exerting control, whereas many poorer people have long since learned to “go with the flow.”

e) *Aversion to change*

Like framing, an aversion to change is also an inherent property of the human mind (De Greene, 1991). In public participation processes related to siting decisions, this attribute often manifests itself as “a tendency to cling to the status quo even if there may be attractive alternatives.” No matter what site is proposed for a new facility, “there will normally be strong objections by one or more groups unless all are convinced that there is a demonstrated need for the facility” (Kunreuther, 1995, p. 285).

Aversion to change is also evident in the “gut resistance” that *unfamiliar public participation models* often encounter from stakeholders. This phenomenon, which was mentioned in Section 6.1.2 above, is aptly illustrated by Crosby's (1995) experience with the Citizens' Jury model. In 1989, the Jefferson Centre proposed to use this model to resolve a dispute over solid waste disposal in Winona County, Minnesota. The proposition was rejected by the city council on the grounds that it was too expensive. Yet, a year and a half later, it had accrued legal fees that were in the order of fifty times more than the citizens' jury would have cost! Thus, it appears that the real reason for the city council's unwillingness to try the new model was because it differs radically from what, in the United States, is regarded as “normal political procedure” (Crosby, 1995, p. 167).

### 6.3.4 Mistrust

The arrow leading from (e) and (f) to (g) in Figure 6.7 is meant to denote the fact that participants inevitably have certain *perceptions* or *beliefs* regarding one another's motivations and competence. These perceptions may be based on several types of information:

- ✓ *The observed behaviour during a public participation process.* For example, members of the public tend to form very rapid judgements about project proponents on the basis of whether they express “caring, empathy and commitment, and respond humanely” without trivialising the feelings of others (Consultative Forum on Mining and the Environment, 2002, p. 71).
- ✓ *Previous experiences of public participation.* For instance, if stakeholders have previously been involved in other participation processes in which project proponents ignored citizens' concerns or in which the public made unrealistic demands of the proponent, they may well expect similar behaviour in the present context (Webler & Renn, 1995).
- ✓ *Perceptions of social or cultural groups.* As was mentioned in Section 5.4.3, stereotyping and prejudice also play a role in shaping people's attitudes towards one another. For example, if an individual believes that all members of a particular ethnic group are incompetent, he or she may be primed to look for evidence of incompetence in the behaviour of participants belonging to that group (Saarikoski, 2000).
- ✓ *Historical factors.* Communities with a history of repression may be distrustful of public authorities or developers (Kelly & Van Vlaederen, 1995). As was mentioned in Chapter 3, this is especially true in the South African context, where memories of apartheid abuses are still fresh in the minds of many people.

Regardless of whether such perceptions are accurate or inaccurate, if they amount to a belief that another party is not motivated to take into account one's interests, or that the other party is not competent to participate meaningfully in the process, this will give rise to a feeling of *mistrust* (h). A number of instances of mistrust in public participation are described below. These are:

- ✓ Mistrust of authorities and decision-makers by the public;
- ✓ Mistrust of the public by authorities and decision-makers;
- ✓ Public mistrust of scientists;
- ✓ Public resentment and mistrust of participants; and
- ✓ Mistrust among participants.

#### a) *Mistrust of authorities and decision-makers by the public*

Public mistrust of authorities and decision-makers can have a variety of consequences. Information pertaining to the results of scientific investigations or risk assessments may be disbelieved, attempts to make technical information more accessible may be viewed as patronising, and the entire process may be viewed as “whitewashing” – in other words, as attempts to pacify the public by bringing them under the impression that they will be able to

influence decisions, when this is in fact not the case (Abelson, 2001). Furthermore, compensation for risks incurred by communities as a result of proximity to hazardous facilities may be “viewed as a bribe unless the affected groups feel that the facility satisfies rigorous, well enforced safety standards” (Kunreuther, 1995, p. 287). Citizens may also demand to oversee the implementation and enforcement of such safety standards.

**b) *Mistrust of the public by authorities and decision-makers***

Dienel and Renn (1995, p. 126) argue that the “common complaint of politicians and agency representatives that the public questions their credibility is only a mirror image of the fact that the people in power have no trust and confidence in the public.” Such mistrust of the public has various causes, including:

- ✓ A widespread belief among those in power that most members of the public are *ignorant or irrational*, and therefore unable to make competent decisions. It was mentioned earlier that this belief may sometimes be justified; however, it is not necessarily always correct (Krannich et al., 1994; Saarikoski, 2000; Sekgobela, 1986; Yim & Vaganov, 2003);
- ✓ The fact that participants are not required to consider the *feasibility* of their recommendations. In order to be meaningful, a public participation process should yield “recommendations which are more than a ‘wish list’ and reflect considerations of implementability” (Armour, 1995, p. 185); and
- ✓ The fact, already mentioned in Section 6.2.4g), that participants cannot be held personally responsible for the *consequences* of their decisions – at least not to the same extent as “officials who face elections and will be legally accountable for their actions” (Dienel & Renn, 1995, p. 129).

Because of such mistrust, authorities and project proponents are frequently unwilling to hand over decision-making power to the public or to take public recommendations into account when they make their final decisions (Del Furia & Wallace-Jones, 2000) (q).

**c) *Public mistrust of scientists***

A general trend over the last few decades has been a steady decline of confidence in the power of science to solve the world’s problems (Saarikoski, 2000). There is a “growing concern by laypersons that the risks associated with new technologies may not be well understood so that there is little reason to trust the experts” (Kunreuther, 1995, p. 286). This erosion of trust in science may be a manifestation of the *postmodern mindset* that is gaining an increasing foothold in Western culture, and that insists on the relativity of all knowledge (see Section 3.1.7). One of the consequences of this trend is that the results of scientific studies and risk assessments are often viewed with scepticism by participants (Soneryd & Weldon, 2003, Yim, 2003 #208).

**d) *Public resentment and mistrust of participants***

In situations characterised by “participation by proxy,” some interested or affected parties are not directly involved in the public participation process. Instead, they are represented in participative forums by community leaders, chairpersons of homeowners’ associations, ward councillors and the like. Because such representatives often “belong to the same class of elites as the government officials, experts, and stakeholders” (O Renn et al., 1995, p. 342),

they may have more in common with their opponents in the debate than with the parties they are supposed to represent. Consequently, relations between them and their constituencies may be characterised by an element of mistrust and resentment. If such representatives attempt to reach consensual agreements with other parties (for example, by agreeing to compensation for communities that will be exposed to risk), they may well be perceived as “selling out” to their opponents (Baughman, 1995, p. 259).

#### e) *Mistrust among participants*

As the previous paragraph indicates, mistrust might afflict the *mesosystem* of a public participation process by weakening the ties between participants and the segments of society they represent. However, mistrust may also find its way into the *microsystem* to taint relationships among members of the public who are directly involved in the process. Such mistrust usually arises in situations where participants have different or incompatible interests, needs or values (Raimond, 2001). The greater the diversity of stakeholders taking part in a process, the higher the probability that they will be mistrustful of one another (Kelly & Van Vlaederen, 1995).

### 6.3.5 Counterproductive behaviour during public participation processes

As a result of self-interest, incompetence and mistrust, participants may engage in a number of actions that are counterproductive to achieving consensus and making good decisions. These include deception (i), coercion and manipulation (j), deviation from the agenda (k), and marginalisation or exclusion of some participants (l) (Abelson et al., 2003). Each of these forms of behaviour is discussed in greater detail below.

#### a) *Deception*

Deception represents one of the strategies that stakeholders might employ to further their own interests during public participation; hence the arrow connecting (e) to (i) in Figure 6.7. Factors that promote dishonesty include *inadequate transparency* in the decision-making process and the absence of measures to *check the veracity of factual claims*. Participants are also more likely to be dishonest if they know they will not have to work together again in future (Hadden, 1995).

A distinction may be drawn between *crude deception* (in which facts are blatantly misrepresented) and *subtle deception* (in which facts are distorted, omitted or presented out of context). Instances of crude deception include:

- ✓ *Deception of the public by radical interest groups.* The attitude of some interest groups – environmental activists in particular – seems to be that the cause for which they are fighting is so noble that it justifies virtually any means. An example of this attitude is provided by a recent public participation process for a proposed nuclear power plant. In order to stimulate public opposition to the proposed project, members of an anti-nuclear group showed photographs of deformed babies to community members and informed them that such deformities are the inevitable consequence of living in the vicinity of a nuclear power plant. In reality, the infants in the photographs bore a suspicious similarity to thalidomide babies. In the same vein, Yim (2003, p. 229) tells of nuclear activists in the United States in the 1970s who employed “horror stories” and exploited “the wave of distrust in institutions which had

been heightened by the Vietnam War and Watergate tragedies” to stimulate opposition to nuclear power.

- ✓ *Deception of the public by project proponents.* In order to pacify members of the public, a project proponent might bring them under the false impression that they will be able to influence its decisions. Such deception might be perpetrated by inviting the public to participate when the basic decisions have already been taken (Abelson, 2001).

Examples of subtle deception include:

- ✓ *Disregarding evidence.* As was mentioned several times on the preceding pages, it is often necessary to verify factual claims by checking them against available evidence or expert opinion. However, such claims may go untested “if it is in the interest of all the parties not to challenge a piece of factual information – because they all benefit from an agreement on its validity” (Fiorino, 1995, p. 233). Such behaviour may be regarded as a form of *self-deception*.
- ✓ *Using facts as weapons.* In an ideal discourse situation, the exchange of information is intended to pave the way for mutual understanding and possible consensus. However, factual arguments can also be used to divide rather than unify, or to “confuse rather than clarify” (Baughman, 1995, p. 261). For instance, participants may attempt to maximise their own positions by taking “extreme views for the sake of argument” (Fiorino, 1995, p. 227).
- ✓ *Disguising normative disputes as factual ones.* It was mentioned earlier that normative assertions may be misinterpreted as factual claims, and vice versa. However, normative disputes may also be *deliberately* disguised as factual arguments, thereby forcing opponents into the impossible position of trying to justify their fundamental values by appealing to scientific evidence or legal requirements (Soneryd & Weldon, 2003; Webler & Renn, 1995).

### b) *Coercion and manipulation*

Like deception, coercion and manipulation can be used in public participation as tactics to further one’s own interests. For this reason, Sinclair (2001) cites freedom from coercion as one of the fundamental conditions for effective public participation. Whereas deception relies on some form of falsehood, *coercion* derives its efficacy precisely from the fact that its threats and sanctions stand a good chance of being real. *Manipulation*, on the other hand, is more insidious; it contains elements of both coercion and deception. In keeping with the distinctions drawn in Section 5.3.5 between the various types of power, coercion may be defined as the illegitimate use of overt power, while manipulation involves the use of covert power (Gunder, 2003).

A few examples of overt coercion in public participation are listed below:

- ✓ *Project proponents* may mobilise their financial and legal resources to threaten or prevent community organisations from participating if they perceive that those organisations are opposed to their plans. Such tactics, which “could be in the form of letters from lawyers or in the form of court interdicts or actions” (SAIEA, 2005, p. 58) are sometimes referred to as Strategic Legal Action against Public Participation (or “SLAPP”) suits.



- ✓ Participants may threaten to *withdraw* from a participation process if their demands are not met (Baughman, 1995; Fiorino, 1995; Krannich et al., 1994). Such a strategy is especially effective if the success of the process depends on the continued involvement of all stakeholders. In order to prevent the process from grinding to a halt, other stakeholders might then have no choice but to concede to the offended party's wishes.

With sufficient experience in public participation, stakeholders may acquire more subtle "strategies and tactics for manipulating the process to their advantage" (Mumpower, 1995, p. 328). There seems to be no limit to the number of forms manipulation can take. If applied with sufficient skill, "even honesty can be used as a tool for manipulation" (Hadden, 1995, p. 245). A few examples of covert manipulation in public participation are provided below:

- ✓ Unscrupulous project proponents may use participation "as a method to gain time or as a psychological trick to cool down a heated conflict" (Midden, 1995, p. 320).
- ✓ Project proponents or government agencies may also *co-opt* representatives of communities or interest groups by making them feel part of their "circle of confidence." By capitalising on the powerful effects of group dynamics and pressures of conformity (see Sections 5.3.5 and 5.4.4b), such tactics may cause their victims to identify more with the values and priorities of their opponents than with those of the groups they are supposed to represent (Boyce, 2001; Kelly & Van Vlaederen, 1995; Raimond, 2001; Sekgobela, 1986).

### c) *Deviation from the agenda*

A frequent problem in public participation is that some participants fail to restrict their contribution to the agreed-upon *discourse parameters*. For instance, they "may raise old, unresolved issues that are external to the current initiative" (DWAf, 2001, p. 9). Consequently, participative forums such as public meetings "may become venting sessions motivated out of generalized resentment and mistrust of public officials" (Krannich et al., 1994, p. 2).

Unlike deception, coercion and manipulation, which represent *deliberate* attempts by participants to promote their own agendas, deviation from the agenda might be ascribed to *either self-interest or incompetence*. Stakeholders may intentionally hijack a participation process, "supplanting the issues with their own agendas" (Ball, 2002, p. 88), or they might introduce irrelevant arguments to pursue a broader social agenda or to delay a process (a technique known as *filibustering*). However, it is also possible that they might drift from the topic in question without being fully aware of it. Such a scenario is particularly likely if participants have had limited previous experience of formal meetings or negotiations (SAIEA, 2005).

### d) *Marginalisation or exclusion*

Like deviation from the agenda, marginalisation or exclusion of stakeholders may either be a deliberate strategy motivated by self-interest or an unintended lapse of competence (as when enthusiastic participants unwittingly dominate the process at the expense of others) (Ball, 2002; Kelly & Van Vlaederen, 1995; Saarikoski, 2000; Soneryd & Weldon, 2003). The probability that some participants will be marginalised or excluded from the process is also dependent on the distribution of *power and resources* (d), although the relationship

between these two variables is not always straightforward. On the one hand, poorer, less educated and less confident stakeholders are less able to fight back if their right to participation is violated. On the other hand, “the principal instigators of public opposition to projects [are often the] poorer, less powerful elements of society with legitimate fears for their livelihoods, health, and safety” (Boyle, 1998, p. 111).

A few examples of marginalisation and exclusion are provided below:

- ✓ *Self-appointed community leaders* may play the part of “gatekeepers” by insisting on “being the only point of contact between practitioners and the community” (SAIEA, 2005, p. 18), thereby excluding the rest of the community from opportunities to participate.
- ✓ *Specialists or project proponents* may assume the role of “intellectual dominators” by using “inaccessible jargon [or] unfamiliar languages” or by behaving “in a way that is superior” (SAIEA, 2005, p. 18). As a consequence, less empowered members of the public may experience participation forums as intimidating, and may prefer to withdraw rather than expose themselves to the risk of humiliation (Boyce, 2001).
- ✓ As was mentioned in Section 3.5.1, *gender inequality* often plays a significant part in marginalising or excluding participants. In patriarchal cultures where females are viewed as inferior to males, women may lack confidence in their own ability to participate meaningfully. This situation is usually exacerbated by the attitudes of the men, who tend to resent women who speak their minds in mixed company (Duncker, 1999, p. 51).

### 6.3.6 Undesirable outcomes of public participation processes

In Section 6.2, a number of *desirable* outcomes of public participation processes were defined. These included the objective that participants should attain increased consensus regarding facts and values, that factual beliefs should correspond to the most accurate available knowledge, that normative choices must be consistent with higher values and with the law, etc. By contrast, *undesirable* outcomes include:

- ✓ Premature or false consensus (m);
- ✓ Escalating conflict (n); and
- ✓ Apathy amongst stakeholders (o).

These are explored in greater depth below.

#### a) *Premature or false consensus*

The terms “premature consensus” and “false consensus” do not require much explanation. The former refers to a situation where debate has been foreclosed – in other words, where decisions have been taken prior to consideration of all relevant information or viewpoints (Webler et al., 2001). False consensus, on the other hand, is consensus achieved by excluding or silencing dissenting voices (Fishkin, Luskin, & Jowell, 2000). The probability of these outcomes is increased if a process involves influential stakeholders who have a large stake in a particular course of action, despite the existence of plausible arguments why this course might not be desirable (Saarikoski, 2000).

Premature or false consensus can be based on:

- ✓ *Deception* (i), as when information about the disadvantages of a preferred course of action is ignored or withheld from participants;
- ✓ *Coercion* (j), as when participants with different preferences or opinions are threatened or prevented in some other way from influencing decisions; or
- ✓ The *exclusion or marginalisation* (l) of participants who refuse to toe the line.

False consensus may also form without deliberate intent. In this regard, Gregory et al. (2001, p. 417) have noted that “focus on consensus can shift, subtly or openly, key elements of the group decision-making process. Issues may be selected in such a way that they offer a high potential for agreement, but which results in less tractable issues being ignored.”

### b) *Escalating conflict*

One of the prime motivators for officials or project proponents to implement public participation processes is the need to secure public support for their plans. However, through the very act of seeking such support, they “often encounter – and may even contribute to the development of – public opposition” (Renn et al., 1995b, p. 6). Such opposition may be so intense as to escalate into an all-out battle of wills among participants. The causes of escalating conflict include:

- ✓ *Conflicts of values or interests* (b). In zero-sum conflicts (in other words, situations where every alternative course of action will inevitably produce winners and losers), participants will understandably engage in attempts to protect their own interests (Daniels et al., 1996; Raimond, 2001; Webler et al., 1995). Such attempts will necessarily bring them into conflict with other participants who are pursuing the same aim. Furthermore, bringing people with contrasting priorities into contact with one another may make them “more aware of their differences in values and preferences” (Nothdurft, 1995, p. 277). “Once reminded of their opinion differences, participants may be enticed to escalate the conflict rather than resolve it” (Nothdurft, 1995, p. 275).
- ✓ *Perceptions of being coerced* (j). People often resent it if decisions are imposed on them – even if it is in their best interest (Allen, 1998; Daniels et al., 1996). “It isn’t just that people oppose any decision they view as involuntary and unfair, regardless of its wisdom; because the equity and control issues come first, people typically never even ask themselves whether they agree on the merits. Outraged at the coercion, they simply dig in their heels” (Consultative Forum on Mining and the Environment, 2002, p. 71).
- ✓ *Deviation from the agenda* (k). If some participants repeatedly raise issues that are unrelated to the decisions at stake, this may exhaust the patience of other stakeholders. This, in turn, increases the risk of conflict among participants (DWAF, 2001).
- ✓ *Perceptions of being marginalised or excluded* (j). A good example is a recent public participation process regarding the proposed merging of an Afrikaans and an English school in a small South African town. Through an oversight of the public participation facilitator, advertisements notifying the public of the process were placed only in the local English newspaper. As emotions were already running high among the Afrikaans community, who perceived the merger as a threat to their

cultural identity, the absence of the advertisement in any of the local Afrikaans newspapers evoked considerable outrage.

- ✓ *Mistrust among participants* (h). The probability that any of the aforementioned circumstances will arise is increased if participants suspect one another of being incompetent or likely to engage in deception, coercion or a deliberate exclusion of opposing views (Raimond, 2001).

The symptoms of escalating conflict in public participation include:

- ✓ *Emotional responses* to value-laden issues. Participants may exhibit anger, frustration and indignation through their words and actions (Kelly & Van Vlaederen, 1995; Rothman, 1997);
- ✓ *Irrational behaviour*. For example, participants may refuse to change their viewpoint despite overwhelming contradictory evidence (Dahinden, 2001; Institute of Development Studies, 2003). Furthermore, contested issues may suddenly begin to proliferate, thus broadening the scope of conflict (Praxis, 1988);
- ✓ *Interpersonal aggression*. Disagreements about issues may turn into personal attacks on opponents (Praxis, 1988); and
- ✓ *A breakdown in channels of communication* (Ishizaka & Tanaka, 2003). Parties may exhibit increased unwillingness to engage in dialogue that might lead to agreement (Baughman, 1995).

Conflicts may also become *self-amplifying*. For example, they may reinforce negative perceptions regarding the motives and competence of other participants (Raimond, 2001) (g), thus increasing *mistrust* (h). Because of this tendency, one of the advantages “of discussions in newly formed groups is that the discussion is not heavily loaded with old conflicts and polarized positions” (Midden, 1995, p. 318). In addition, escalating conflict may strengthen the tendency of participants to disregard the common good in favour of *self-interest* (Raimond, 2001) (e). As a “winner takes all” orientation becomes more and more entrenched, participants may be less and less willing “to publicly pursue avenues of mutual gain” (Baughman, 1995, p. 256). As a consequence of escalating conflict, it may be impossible to achieve consensus on relevant matters (p). This may lead to stalemate, or derail the entire process (Roberts, 1995).

### c) Apathy

One of the oft-cited arguments against public participation is the claim that the public is generally *uninterested* in issues beyond their sphere of immediate concern (Boyce, 2001; Hirst, 1990). It should be noted, however, that such apathy often has its base in experience. If members of the public lack the power and resources to participate meaningfully (Kelly & Van Vlaederen, 1995) (d), if they mistrust other participants (Del Furia & Wallace-Jones, 2000) (h) or feel that they are being excluded from the process (Krannich et al., 1994) (l), they may well choose to withdraw rather than fight an uphill battle to make their voices heard. Previous negative experiences with public participation – for instance, cases in which the process ended in a stalemate (p) or in which recommendations by participants were ignored (q) – may also contribute to public disillusionment (Sinclair & Diduck, 2001).

### 6.3.7 Facilitating public participation processes

The goal of the public participation facilitator is to give structure to a public involvement process and to prevent, as far as possible, the aforementioned problems from occurring. In order to achieve this goal, he or she (or they, as the public participation facilitator is usually a team of individuals) must perform the following tasks:

- ✓ *Neutralising power differences* so as to prevent marginalisation and ensure that all stakeholders have an equal opportunity to participate and influence the process. In order to perform this task, it may be necessary to give special attention to marginalised groups such as poor communities or women (SAIEA, 2005).
- ✓ *Promoting moral behaviour* so as to prevent actions from being dominated by self-interest. Performing this task may involve taking “active steps to encourage an attitude of empathy and respect by decision-makers” (SAIEA, 2005, p. 18). This is perhaps the greatest challenge facing public participation facilitators, as “there is little that discourse structure can do to promote empathy, except for adopting at the onset a list of commitments that state the shared interest in empathizing with another” (Webler, 1995, p. 71).
- ✓ *Building capacity* so as to enhance participants’ competence and increase their ability to participate meaningfully. In some cases, this may involve raising citizens’ awareness and understanding of environmental or political issues that affect their lives (DWAF, 2001; Kelly & Van Vlaederen, 1995).
- ✓ *Facilitating trust*. In order to accomplish this task, it may be necessary to ensure the *transparency* of decision-making processes. For a public participation process to be successful, however, participants require more than trust in *one another*. They also have to trust the public participation *model* that is being applied to structure their involvement. A challenge in this regard is the fact that stakeholders “are almost certain to be suspicious of a new technique and hesitant to endorse or accept it fully until repeated experience has demonstrated its ability to perform fairly and competently” (Mumpower, 1995, p. 329).
- ✓ *Promoting critical self-reflection*, which is necessary to prevent premature or false consensus (Sinclair & Diduck, 2001). As Webler (1995, p. 70) has pointed out, “one way that people come to understand their own opinions is through discussions with others.”
- ✓ *Managing conflict* (Del Furia & Wallace-Jones, 2000). This task presents another significant challenge, as a public participation process “can easily become an adversarial confrontation” (Webler & Renn, 1995, p. 24).

As was mentioned in the discussion of the structural model (Section 6.1), the probability that a public participation process will be successful depends in part on its *socio-cultural and political context*. Hence, an overarching objective for facilitators is to take this context into account when performing the aforementioned tasks.

At a more concrete level, the tasks of the public participation facilitator involve:

- ✓ Choosing an appropriate public participation *model* and *techniques* (r);
- ✓ *Implementing* the model and techniques effectively – which, in turn, involves planning and initiating the process, inviting participants, etc. (s); and

- ✓ *Enforcing the rules* within the public participation process by ensuring that participants keep to the agenda, etc. (t).

As the following sections illustrate, each of these tasks presents its own set of problems and challenges.

#### a) *Choosing appropriate participation models and techniques*

Problems and challenges in this area include the fact that:

- ✓ The chosen model *may conflict with culturally accepted forms of decision-making*. The example of Citizens' Juries has already been mentioned. This model "has only been applied in the North American context and to mainstream cultural groups. ... Its cross-cultural applicability is questionable [as] the selection of jurors through quota sampling, the question-answer form of dialogue, examination of witnesses, and voting form of decision-making ... may not be transferable to aboriginal cultures where decision-making is entrusted to elders and consensus-based processes" (Armour, 1995, p. 186).
- ✓ *A supporting institutional and legal framework may not exist* (Boyle, 1998). For example, "there have been several attempts to promote the transfer of various public participation methods developed in Western European and North American countries to the new democracies of Central and Eastern Europe. ... However, the lack of an adequate legal framework and the decreasing concern for the environment due to pressing economic problems do not establish a favourable background for public participation in general" (Vari, 1995, p. 112).

#### b) *Planning and implementation*

Shortcomings in the planning and implementation of public participation processes sometimes include:

- ✓ An insufficient appreciation of the *diversity* of public interests and values. There is, in fact, no single "public" but a variety of *publics* relevant to any public participation process. Notwithstanding this fact, the reality of society's heterogeneity is sometimes overlooked (Sekgobela, 1986). Furthermore, public participation facilitators may pay insufficient attention to the possibility that self-appointed spokespersons do not necessarily speak on behalf of the communities they claim to represent (SAIEA, 2005).
- ✓ *Insufficient planning*, which may create situations in which stakeholders are not notified of meetings, where meetings are held at times and venues that are inaccessible to participants, or where public inputs are not recorded or processed effectively (Krannich et al., 1994).
- ✓ Participants may *criticise or sabotage a participation process* to further their own agenda. "A pervasive issue experienced worldwide is that stakeholders criticise the public participation process itself ... as a proxy for not wishing the project to go ahead... It is often easier for people to criticise the public participation process, especially where the technical content issues in a project are very complex. ... For example: the process was either too long or too short; there was too little time to comment, or too much; the process provided too little or too much confusing



information; the public participation practitioners were biased; the practitioners cannot claim to be independent because they are being paid for by the proponent ... and so on" (Consultative Forum on Mining and the Environment, 2002, p. 41). In the experience of the author, participants sometimes go so far as to provide incorrect contact details of themselves, so that they can later claim they were not informed of meetings.

- ✓ The challenge of *controlling costs*. Public participation processes are frequently costly and time-consuming, and may therefore "necessitate the commitment of a wide range of an organisation's staff members over a long period of time" (DWAF, 2001, p. 9). A related challenge is the fact that "expenditures for promoting public participation compete with potential expenditures for other worthy public purposes, needs, and desires. ... Funds spent to support public participation cannot be spent for public health, improved medical care, risk reduction, environmental preservation, social welfare, national defense, or whatever" (Mumpower, 1995, p. 328).

### c) *Enforcement of rules*

Problems related to the enforcement of discourse rules in a public participation process include:

- ✓ *The unpredictability of human behaviour*. One of the challenges facing public participation facilitators is "to determine which issues will be considered controversial or significant by the public. An issue that appears relatively insignificant to management and staff, may be viewed in an entirely different light outside the organisation" (DWAF, 2001, p. 9).
- ✓ *A frequent shortage of sufficiently skilled facilitators*. In particular, the "success or failure of public meetings or other multi-stakeholder events is very dependent on the capability of the facilitator. Poorly-run public meetings may have catastrophic consequences for a project, regardless of the merits that the project may have" (Consultative Forum on Mining and the Environment, 2002, p. 13).
- ✓ *Maintaining independence and impartiality*. The fact that the public participation facilitator is usually paid by the project proponent sometimes creates a challenge, as it makes it difficult for the facilitator not to side with his or her client (SAIEA, 2005).
- ✓ *Enforcing rules without dominating the process*. An example is provided by the citizens' jury used in 1993 to evaluate the Clinton health care plan. One of the moderators was a well-known figure. Contrary to expectations, however, this person's performance as moderator was not rated very highly by participants, who implicated that, "when well-known people are brought in to moderate," they have a tendency to "dominate the proceedings" (Crosby, 1995, p. 164).

### 6.3.8 Setting the functional and process maps side by side

In sum, the process model presented in this section states that:

- ✓ Many of the problems in public participation stem from the fact that participants may differ in terms of their *values, beliefs and preferences*, which in turn are often shaped by their social and cultural background.

- ✓ In particular, participants' value orientation might motivate them to pursue their own interests rather than seek a solution that is to the advantage of all parties.
- ✓ A frequent manifestation of self-interest among members of the public is the *NIMBY syndrome*. Self-interested *project proponents*, on the other hand, may attempt to direct the process to their advantage, while *interest groups* may engage in a similar strategy by means of lobbying. *Politicians* may also use public participation processes to their advantage by capitalising on conflicts.
- ✓ Differences among participants in terms of their *behavioural and communicative conventions* (for instance, language differences and cultural differences in non-verbal communication and preferred modes of decision-making) may hamper effective communication.
- ✓ Participants with limited *power and resources* (in particular, those who are poor uneducated, disenfranchised and unorganised) find it difficult to participate in a competent manner. They are also vulnerable to *marginalisation* and *exclusion* by more powerful stakeholders.
- ✓ Other factors that may limit citizens' competence during public involvement processes include the *physical setting* and the *complexity of the issues* with which they have to deal.
- ✓ Manifestations of incompetence in public participation include a *failure to assimilate information*, sensitivity to *framing effects*, *misunderstandings* and *unrealistic expectations*, negative responses to a perceived *loss of control*, and an *aversion to change*.
- ✓ Participants may *mistrust* one another because they perceive other parties to be self-interested or incompetent, because they have had previous negative experiences with public participation, because of prejudice, or because of historical factors such as a history of exploitation.
- ✓ Members of the public are also often suspicious of *scientists* or of individuals who have been appointed to *represent their interests* in participation forums.
- ✓ Participants who are motivated by self-interest and spurred by mistrust may try to *deceive*, *manipulate* or *coerce* one another to further their own ends. Both deception and manipulation can take subtle forms. For instance, value disputes may be *disguised as disagreements about facts*, and representatives of public interests may be *co-opted* by powerful elites.
- ✓ *Deviation from the agenda* may also be used as a manipulative strategy. However, it may sometimes be the result of limited experience with formal meetings and negotiations.
- ✓ If deception, coercion or the exclusion of dissenting participants is successful, a public participation process may end in *premature* or *false consensus*. However, such strategies may also backfire, causing the process to degenerate into *escalating conflict*.
- ✓ Another possibility is that participants may become *apathetic* and withdraw from the process. The probability of such a response is increased if participants perceive

that their inputs are likely to be ignored or that the process is likely to end in stalemate.

- ✓ The responsibility of preventing the aforementioned problems from arising rests largely on the shoulders of the *public participation facilitator*.
- ✓ Challenges with which public participation facilitators have to contend include *unsupportive institutional or legal frameworks*, the *diversity of public opinion*, attempts by disgruntled participants to *sabotage* the process, the *unpredictability* of human behaviour and the difficulties of maintaining *impartiality*.

One shortcoming of this model is that it makes various implicit assumptions about the reasons *why* certain events or tendencies constitute problems for public participation. For example, the model assumes that a public participation process is in trouble if the majority of citizens are apathetic towards it. This premise may be questioned on the grounds that non-involvement of the (frequently uninformed and irrational) public actually increases the probability that decisions will be left in the hands of competent individuals. In other words, public apathy towards public participation might actually *enhance* the quality of decision-making in the public sphere, rather than diminish it.

This shortcoming may be compensated for by superimposing the process model on the *functional model* developed in Section 6.2. The latter model defines the various criteria that a public participation process must meet in order to yield the maximum benefit for all concerned. Setting the two models side by side reveals that, for each of the problems defined in the process model, it is possible to identify *at least one functional criterion that is threatened by it*. For instance, it explains why public apathy towards a participation process should be considered a problem: it reduces the probability that participants will be demographically representative of the public at large (23). This, in turn, may impact negatively on public support for decisions taken during the participation process (26). Public apathy toward the process also reduces the probability that the full diversity of public values will be taken into account during decision-making (18).

The table below shows the complete results of superimposing the process and functional models of public participation developed in this chapter. It provides an inventory of all the *problems* identified in Section 6.3. It also shows which of the *functional criteria* described in Section 6.2 are most directly affected by each problem. Problems related to effective *facilitation* have been omitted from this table. The reason for this omission is the fact that these problems do not impact directly on the functionality of a public participation process. Instead, they limit the ability of a public participation facilitator to deal with problems that do have such a direct impact.

**Table 6.1 Problems related to functions**

Problems	Functional criteria most directly affected
Differences in social/ cultural background (a)	
Differences in values, preferences, beliefs and epistemology (b)	(11) Dispute resolution: Convergence of views re facts achieved between participants (17) Dispute resolution: Convergence of views re values / preferences achieved (22) Values of participants consistent with those of general public (36) Empathy and trust achieved among participants (47) Consensus achieved between participants and decision-making agencies (57) Contribute to formulation of generalised will
Differences in behavioural/ communicative conventions (c)	(4) Information: Participants contribute to problem definition & formulation of decision options (5) Fairness: Equal chance to make / debate / decide factual & normative claims (28) Redemption of claims according to consensually approved scheme (32) Participants are linguistically / cognitively competent (34) Fairness: Equal chance to make / debate / decide claims re definitions (38) Competence: Access to information about others' subjective experience (39) Competence: Translation of expressive into factual / normative claims (47) Consensus achieved between participants and decision-making agencies
Differences in power/ resources (d)	(4) Information: Participants contribute to problem definition & formulation of decision options (5) Fairness: Equal chance to make / debate / decide factual & normative claims (10) Competence: Factual implications of normative choices considered (23) Participants demographically representative of public (24) Most-affected parties able to protect own interests (25) Greater representation given to (potentially) most affected parties (32) Participants are linguistically / cognitively competent (34) Fairness: Equal chance to make / debate / decide claims re definitions (41) Face-to-face contact between participants (42) Fairness: Equal chance to make / debate / decide expressive claims (47) Consensus achieved between participants and decision-making agencies (48) Resources: Participants contribute resources / time to implement decisions (56) Participants educated re relevant issues & dispute resolution processes
Self-interest (e)	
Self-interest among participants	(20) Intended outcome of decision ensures greatest good for greatest number (21) Intended outcome of decision does not unfairly disadvantage anyone (36) Empathy and trust achieved among participants (47) Consensus achieved between participants and decision-making agencies (59) Participants accountable to the publics they represent
Self-interest among project proponents	(43) Decisions made during process are incorporated into final decisions (47) Consensus achieved between participants and decision-making agencies
Self-interest among lobbies/ interest groups/ activists	(20) Intended outcome of decision ensures greatest good for greatest number (21) Intended outcome of decision does not unfairly disadvantage anyone



Problems	Functional criteria most directly affected
Self-interest among politicians/ authorities	(11) Dispute resolution: Convergence of views re facts achieved between participants (17) Dispute resolution: Convergence of views re values / preferences achieved (43) Decisions made during process are incorporated into final decisions (55) Increased public trust in decision-making agencies
Competence (f)	
Failure to assimilate available information	(12) Relevant facts are taken into account (18) Relevant values are taken into account (33) Consensus re terms / definitions achieved between participants (43) Decisions made during process are incorporated into final decisions (56) Participants educated re relevant issues & dispute resolution processes (58) Consensus achieved between participants and publics
Framing effects	(10) Competence: Factual implications of normative choices considered (19) Competence: Normative choices consistent with one another, with higher values & with law
Resistance due to perceived lack of control	(26) Stakeholder support for decision (43) Decisions made during process are incorporated into final decisions
Misunderstandings and unrealistic expectations	(11) Dispute resolution: Convergence of views re facts achieved between participants (12) Relevant facts are taken into account (17) Dispute resolution: Convergence of views re values / preferences achieved (27) Effective communication takes place
Aversion to change	(10) Competence: Factual implications of normative choices considered (26) Stakeholder support for decision
Mistrust (h)	
Public mistrust of authorities/ decision-makers	(26) Stakeholder support for decision (55) Increased public trust in decision-making agencies
Authorities/ decision-makers mistrust participants	(43) Decisions made during process are incorporated into final decisions (46) Accountability: Agency decisions open to public scrutiny
Public mistrust of scientists	(16) Greater weight given to expert than uninformed opinion
Mistrust among participants	(36) Empathy and trust achieved among participants (57) Contribute to formulation of generalised will
Public mistrust of participants	(58) Consensus achieved between participants and publics
Counterproductive behaviour during participation process	
Deception (i)	(13) Competence: Access to systematic factual knowledge (14) Competence: Access to anecdotal knowledge (15) Competence: Factual claims checked against expert opinion (43) Decisions made during process are incorporated into final decisions

Problems	Functional criteria most directly affected
Coercion (j)	(5) Fairness: Equal chance to make/ debate/ decide factual & normative claims (23) Participants demographically representative of public (24) Most-affected parties able to protect own interests (59) Participants accountable to the publics they represent
Deviation from the agenda (k)	(30) Sufficient time is allowed for discussion (49) Time / cost efficiency
Marginalisation and exclusion (l)	(5) Fairness: Equal chance to make / debate / decide factual & normative claims (13) Competence: Access to systematic factual knowledge (14) Competence: Access to anecdotal knowledge (23) Participants demographically representative of public (25) Greater representation given to (potentially) most affected parties (34) Fairness: Equal chance to make / debate / decide claims re definitions
Possible outcomes of the process	
Premature or false consensus (m)	(15) Competence: Factual claims checked against expert opinion (19) Competence: Normative choices consistent with one another, with higher values & with law
Escalating conflict (n)	(11) Dispute resolution: Convergence of views re facts achieved between participants (17) Dispute resolution: Convergence of views re values / preferences achieved (47) Consensus achieved between participants and decision-making agencies (58) Consensus achieved between participants and publics
Apathy (o)	(23) Participants demographically representative of public (26) Stakeholder support for decision (48) Resources: Participants contribute resources / time to implement decisions
Ineffective/ inappropriate enforcement of rules	(5) Fairness: Equal chance to make / debate / decide factual & normative claims (10) Competence: Factual implications of normative choices considered (16) Greater weight given to expert than uninformed opinion (19) Competence: Normative choices consistent with one another, with higher values & with law (28) Redemption of claims according to consensually approved scheme (30) Sufficient time is allowed for discussion (34) Fairness: Equal chance to make / debate / decide claims re definitions (39) Competence: Translation of expressive into factual / normative claims (40) Competence: Discourse about participants' sincerity encouraged (42) Fairness: Equal chance to make / debate / decide expressive claims

#### 6.4 CONCLUDING THOUGHTS

The three models or “maps” presented in this chapter all point to a similar conclusion: public participation consists of processes that regulate other processes, and are in turn regulated by higher-level processes. These processes are embodied in structures embedded within structures within still larger structures. For example, the behaviour of participants is regulated (in part) by the rules of the process. These rules, in turn, are determined (in part) by the legislative and institutional framework in which the process takes place.

The levels of processes and structures depicted in the models cover a wide spectrum. They range from the discourse of participants and the parameters governing this discourse to



interaction with the wider public and with social and political institutions. However, none of the models presented above makes more than passing references to the most basic elements of any public participation process – namely, the events that occur in participants’ heads and hearts, and the ideas and abstractions that guide their experience and behaviour.

This chapter has provided numerous clues suggesting that processes and structures residing at this personal level might have a significant influence on public participation processes. For example, the all-important role of *trust* was emphasised several times, as were the inherent limitations of the human mind as far as *information processing* is concerned. In the following chapter, these clues are followed up as the systemic analysis of public participation is expanded to include its psychosocial dynamics.

## CHAPTER 7: TWO SYSTEMIC PERSPECTIVES ON PSYCHOSOCIAL PROCESSES IN PUBLIC PARTICIPATION

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*We are what we repeatedly do.*

– Aristotle

The aim of this chapter is to present two systemic models of the psychosocial dynamics of public participation. These models make use of the information on public participation presented in Chapters 3 and 6, as well as of the information on psychology presented in Chapter 5. The two bodies of knowledge (public participation and psychology) were integrated by means of the systems theoretical tools and concepts discussed in Chapter 4. The first model makes use of the concepts of *logical typing* (Section 4.3.2) and the *economics of flexibility* (Section 4.4), while the second model uses the notions of *descriptive levels* (Section 4.3.3) and *feedback loops* (Section 4.2.3). It also employs the distinction between *dynamic variables*, *order parameters* and *control parameters* drawn during the discussion of descriptive levels.

Because each model incorporates numerous facets of systems theory as well as of psychology and public participation, it is difficult to find descriptive names for them. They are therefore simply referred to as “Model A” and “Model B.” As with the three “macro-level” maps of public participation presented in the previous chapter, these models are intended to complement each other. Each model highlights a different set of aspects related to the psychological dynamics of public participation, and each offers a unique set of insights regarding these dynamics. The closing section of the chapter presents a comparison between the two models, and identifies the insights that might be obtained from setting them side by side.

### 7.1 MODEL A: ECONOMICS OF FLEXIBILITY IN PUBLIC PARTICIPATION

People bring various ideas into a public participation process. These ideas may change during the course of the process, or they may remain unchanged. If they do change, they might either converge (as when participants reach consensus on beliefs and/or preferences), or they might drift further apart (as when opinions become more polarised during conflict).

A person’s ideas do not exist independently from one another: they form a complex network of interdependencies. Thus, if one idea changes, a ripple effect might occur through many related parts of the network. For example, an expert’s arguments about the various safety mechanisms built into a nuclear reactor might convince me that this technology does not pose significant risks. However, if my beliefs about the trustworthiness of the expert were to change (perhaps because of the discovery that he is on the payroll of the power company), my beliefs about the safety of nuclear power might also be altered.

A theory of the psychosocial dynamics of public participation needs to account for this interrelatedness of ideas, as well as for the factors that might induce ideas to change or to

resist modification. The model presented in this section endeavours to address such issues. In the first sub-section below, the model is developed from basic systems theoretical principles. The second sub-section demonstrates that this model incorporates or can be reconciled with a number of established psychological concepts and theories. Finally, the model is applied within the context of public participation.

### 7.1.1 Sketching the model

The model takes as its starting point Bateson's theory regarding *orders of learning*, which was discussed in Section 5.2.4. The theory states that the most basic form of learning (which Bateson termed "*Zero-Learning*") involves the simple receipt of meaningful information. Two examples of *Zero-Learning* are:

- ✓ The experience of looking at one's watch and learning from the position of the hands that it is now one o'clock.
- ✓ Seeing a traffic light turn red and realising that one should step on the brake.

*Learning I* was then defined as a change in the parameters governing *Zero-Learning*. Examples include:

- ✓ Learning that the little hand on a watch denotes the hour while the big hand counts the minutes past the hour.
- ✓ Learning that a red traffic light means "Stop!"

As these examples indicate, *Learning I* creates or modifies the *parameters* according to which *Zero-Learning* takes place. *Learning II* can then be defined as a change in the parameters of *Learning I*, *Learning III* as a change in the parameters of *Learning II* and so on.

Bateson's theory regarding orders of learning may be viewed as a *process model*, since it describes the various types of change that a mind is capable of attaining. However, it makes implicit claims about the *structure* of the mind. These claims may be made explicit by considering *what it is* that changes during each type of learning.

First of all, let us consider the two examples of *Zero-Learning* provided above. What changes when one looks at a watch and discovers that it is now one o'clock? The answer to this question is: One's *belief* about the current time. Before looking at the watch, I may have been uncertain about the time, or I may have had the mistaken idea that it was earlier or later. Seeing the red traffic light, on the other hand, changes one's belief or conviction about what one's next *action* should be. The common conclusion to be drawn from both these examples is that, at any given moment in time, the mind is populated by a variety of *transient ideas*, which include beliefs about the current state of the world and impulses to perform certain actions. *Zero-Learning* can thus be defined as *any change in this population of transient ideas*. Such changes are induced by experience, and may involve either the formation of new ideas or the alteration of existing ones.

Consider next the definition of *Learning I* reiterated above: it is any change in the *parameters of Zero-Learning*. This definition makes the implicit assertion that, underlying the population of transient ideas, there is a second, deeper layer which consists of ideas about how, and when, this population should be modified in the face of experience. In other words, these ideas belong to a *higher logical type* than the first level. Examples of ideas at this second level include notions such as "The little hand counts the hours while the big hand

counts the minutes," "XII means 'twelve'," "A red light means 'Stop'," "To stop, one should step on the right-hand pedal" and so forth. Without this underlying set of ideas, the face of a watch, the colour of a traffic light – indeed, all symbols – would be meaningless.

When considering the origins of ideas occupying this second level, a basic distinction is immediately apparent. Some of these ideas are innate; they are present from birth by virtue of one's genetic makeup (Perold & Maree, 2003). It is likely that, in many non-human species, the majority of ideas fall in this category. For example, a fighter fish knows instinctively that the flash of a red fin means, "Attack!" (Lorenz, 1996). In humans, on the other hand, most ideas belong in a second category, which consists of ideas that are *acquired on the basis of experience*. For example, one is not born with the knowledge that a red traffic light means "Stop!" One has to learn it. Learning I, then, refers to any process that makes changes or additions to the complement of second-level ideas that one is born with.

This line of reasoning can be extrapolated to the next level. If Learning II is defined as changes in the parameters governing Learning I, it follows that the mind hosts a *third* level of ideas – namely, ideas about how and when second-level ideas should be modified. Ideas at this level include the precepts and mental apparatus that have to be in place for a child (or adult) to learn the names of objects and the meanings of symbols. One example is the idea that, "If someone repeatedly points at an object while pronouncing a word, the word is the *name* of that thing."

It seems likely that a large proportion of ideas at this third level of the mind are innate. For instance, it is hard to imagine how knowledge of the aforementioned "naming ritual" (the procedure of drawing attention to something while pronouncing its verbal label) could be acquired through experience. Nevertheless, there is evidence suggesting that at least some third-level ideas have to be learnt. The story of Helen Keller is perhaps the most illustrative and poignant example.

When she was a child, Helen was struck with an illness that left her deaf and blind for life. This made it impossible for anyone to penetrate her "dark and silent world" (Trenholm & Jensen, 1992, p. 209). Attempts by her governess – Anne Sullivan – to teach her to communicate by means of finger spelling met with consistent failure. Helen quickly learnt to imitate Anne's finger movements, but did not grasp that these movements were meant to convey *meaning*.

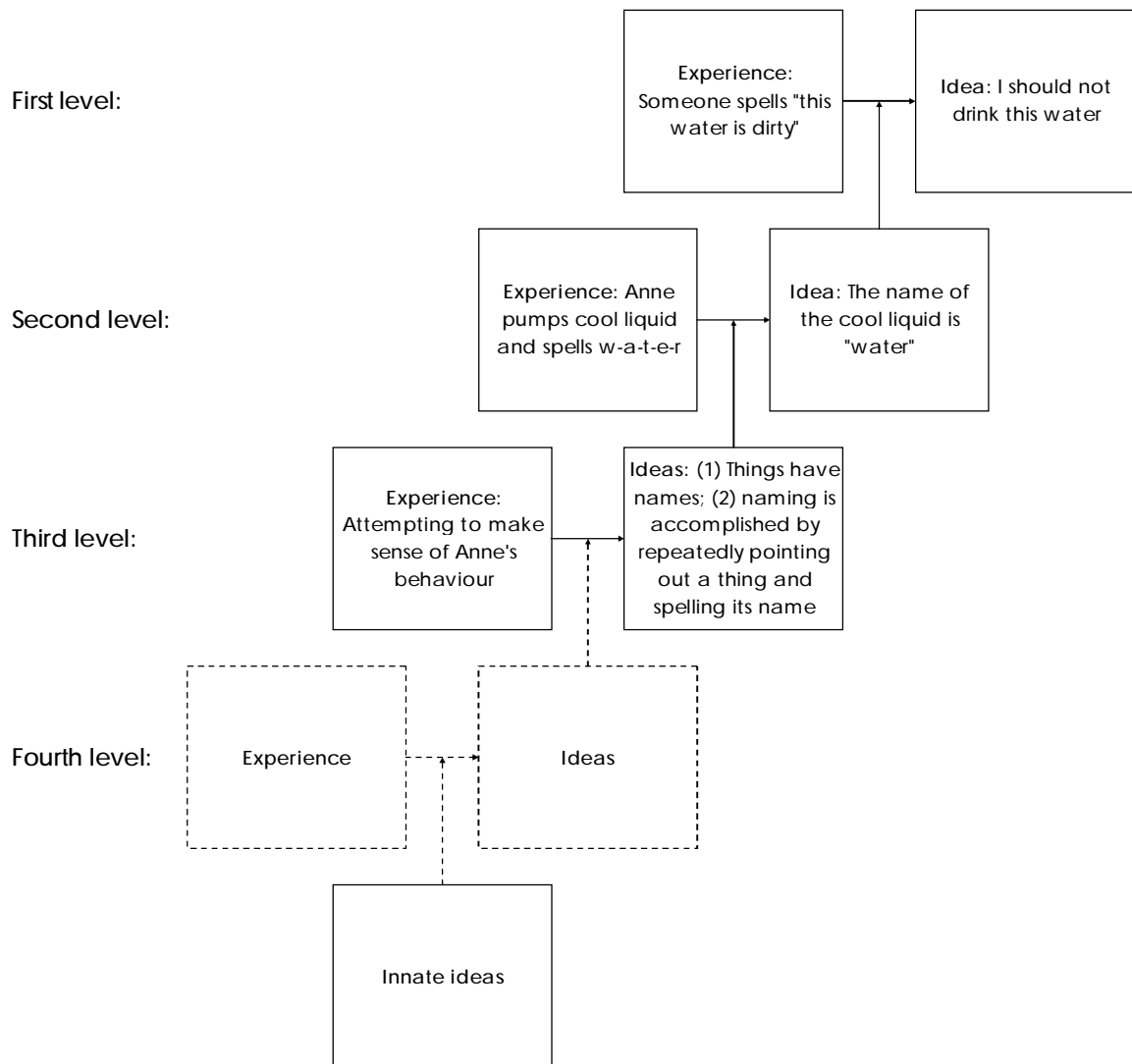
The critical moment in Helen's life occurred when she was seven years old. She and her governess, Anne Sullivan, were in the well house of the Keller home. Sullivan placed Helen's hands beneath the pump and repeatedly spelled the word "w-a-t-e-r" into them. As she felt the cool liquid spilling over her hands, Helen realised for the first time that *things have names*. She later described the experience in her autobiography (Keller, 1967/1903):

That living word awakened my soul, gave it light, hope, joy, set it free!... I left the well-house eager to learn. Everything had a name, every object which I touched seemed to quiver with life. That was because I saw everything with the strange, new sight that had come to me. (p. 35)

The story of Helen Keller suggests that we are not born with the idea that things have names. We have to acquire this knowledge – and we probably do so through our very early interaction with other human beings. Somehow, Helen's sensory disability had deprived her

of critical elements of such interaction during infancy. Her experience as a seven-year old girl is an example of the sudden and life-changing addition of a new third-level idea – a change that involved Learning II.

The description of the hierarchy provided thus far makes it clear that, if it is possible for an idea to change on the basis of experience, there must necessarily be a deeper stratum of ideas to govern this change. One's idea about the time cannot change unless one has certain ideas about the meaning of a watch and the meanings of numbers. Similarly, one cannot learn the meaning of numbers unless one already has the idea that things have names. If it is possible to *acquire* the idea that things have names – in other words, if this idea is not innate – it therefore follows that the mind must house a *fourth* level of ideas – and so on. It is not known how far this hierarchy of ideas extends. However, because the human mind is a finite instrument, it cannot house an infinite population of ideas. At some stage, the hierarchy must come to an end. At this most fundamental level, all ideas will be innate or instinctive. An example of such a hierarchy based on the story of Helen Keller is provided in the figure below.



**Figure 7.1 A hierarchy of ideas**

a) *Ideas and flexibility*

If it is claimed that a particular idea is not innate but was acquired through experience, this implies that there exist *alternative* experiences which, if they had occurred, would have given rise to different ideas. For instance, a child growing up in a German household will learn that a furry animal that purrs is called “eine Katze” rather than “a cat.”

Some ideas (such as knowledge of the vocabulary and grammar of one’s mother tongue) are relatively fixed after having been imprinted through initial experience (Deacon, 1997; Johnson & Newport, 1989). Other ideas, by contrast, are always subject to revision. For instance, I may believe that today is the 8<sup>th</sup> of February, but one look at the calendar will correct this idea if it is mistaken. It is therefore appropriate to refer to the *flexibility* of an idea, where this flexibility may be defined as the *range of alternative experiences that would give rise to modifications of that idea*. *Inflexible* ideas are ones that are resilient, and likely to change only when blatantly contradicted by experience. *Highly flexible* ideas, on the other hand, are ones that are held only tentatively and are liable to change as soon as information becomes available that calls them into question. Flexibility of ideas is a prerequisite for all types of *learning*, and is therefore an essential condition of survival.

The concept of *requisite flexibility* was introduced in Section 4.4; it refers to the extent to which a variable in an adaptive system has to be *able to change* in order to respond appropriately to changes in the system’s internal or external environment. It is possible to classify ideas in terms of their degree of requisite flexibility, and it turns out that those ideas with *less requisite flexibility* are usually also the ones that are more *formal* or *abstract* – in other words, they are more fundamental in hierarchies of the type described above. In Bateson’s terms, ideas with less requisite flexibility tend to belong to *higher logical types*.

The correlation between level of logical typing and degree of requisite flexibility arises from the fact that abstract ideas are by definition not confined to particular cases, but are applicable over a wide range of circumstances. Hence, the need to adjust them arises less frequently. Consider, as an example, the contrast between the following two ideas:

*Idea 1:* If X is consistently followed by Y, it is reasonable to conclude that X is a cause of Y.

*Idea 2:* Pollen is the cause of my hay fever.

Idea 1 is both more abstract than Idea 2 and a likely premise on which Idea 2 may be built through appropriate experience (for example, if I suffer a bout of hay fever every time I come near flowers). Furthermore, Idea 1 has more or less universal validity; it is the idea upon which all classical conditioning in humans and animals is based. Idea 2, by contrast, is valid only for some people, and even then perhaps not over the course of their whole lives.

If appropriate experiences *do* occur to precipitate a change in an idea as fundamental as Idea 1 above, the consequences will *cascade upward through the hierarchy*, affecting many of the ideas that have been built upon it. Consider, for instance, the multiple ramifications of the change in ideas regarding humanity’s place in the universe that was brought about by the publication of Darwin’s *Origin of species*.

Although it is generally true that more abstract ideas hold true over a wider range of circumstances than concrete ones, and therefore require less flexibility, there are some



exceptions to this rule. Among the examples of ideas that are fairly concrete, but are still more or less universally true, two main categories can be discerned:

- ✓ Ideas that refer to specific constancies in the material world (such as the idea that night and day follow each other in 24-hour cycles, which is true all over Earth and has been true for all of human history); and
- ✓ Ideas which are true for those who hold them, as long as they are shared by enough other people (such as ideas regarding the meanings of words).

### b) *Uncovering ideas and their flexibility*

It is perhaps easier to form an understanding of the hierarchic interdependence and flexibility of ideas by considering what *types of questions* one could ask a person to uncover his or her current ideas, their relationships to one another and their readiness to change. A possible series of questions intended to elicit such answers is described below:

1. "What do you believe / know / prefer / intend doing?" The answer to this question would provide information on the upper layer of a person's hierarchy of ideas.
2. If the answer to the first question is denoted by the label  $I_1$ , the next question would read: "Why do you believe / know / prefer / intend doing  $I_1$ ?" By subdividing this question as follows, its answer can yield information on the experiences that led to that idea as well as its flexibility in the face of alternative experiences:
  - a. What *experiences* led you to adopt  $I_1$ ?
  - b. What experiences would lead to do adopt a *different* idea?
3. If the answer to Question 2a is denoted by the label  $E_1$ , the next question would read: "Why do you assume that  $E_1$  implies  $I_1$ ?" The answer to this question would provide information on the premises underlying the first layer of ideas.
4. If the answer to Question 3 is denoted by the label  $I_2$ , the next pair of questions would be:
  - a. What *experiences* led you to adopt  $I_2$ ?
  - b. What experiences would lead to do adopt a *different* idea / change your assumption?

Question 3 can now be adapted to uncover the next layer of premises, while Question 4 can be adapted to ascertain their formative experiences and their flexibility. This process can (theoretically) be repeated until the base of the hierarchy is reached.

It should be noted, however, that the set of questions outlined above will be useful only insofar as respondents are willing and able to reflect upon and verbalise their ideas. Not all ideas are open to introspection. Ideas that are inaccessible to one's awareness, but nevertheless exert an influence on one's behaviour and experience, may be termed *unconscious ideas* (Bateson, 2000). The notion of consciousness and its relation to logical type and flexibility is revisited in the following section.

### c) *Ideas and the economics of flexibility*

As was discussed in Section 4.4, the "economics of flexibility" refers to the challenge – faced by all biological, cognitive and social systems – of having to distinguish between

circumstances that are *transient* (and therefore require frequent adaptive change) and those that are likely to remain relatively *constant* (in which case responses that have proven adaptive in the past are likely to remain appropriate in future). Because the ability to change always exacts a cost, it is to the advantage of adaptive systems to “hardwire” consistently successful solutions – in other words, encode them into less flexible subsystems or information processing pathways.

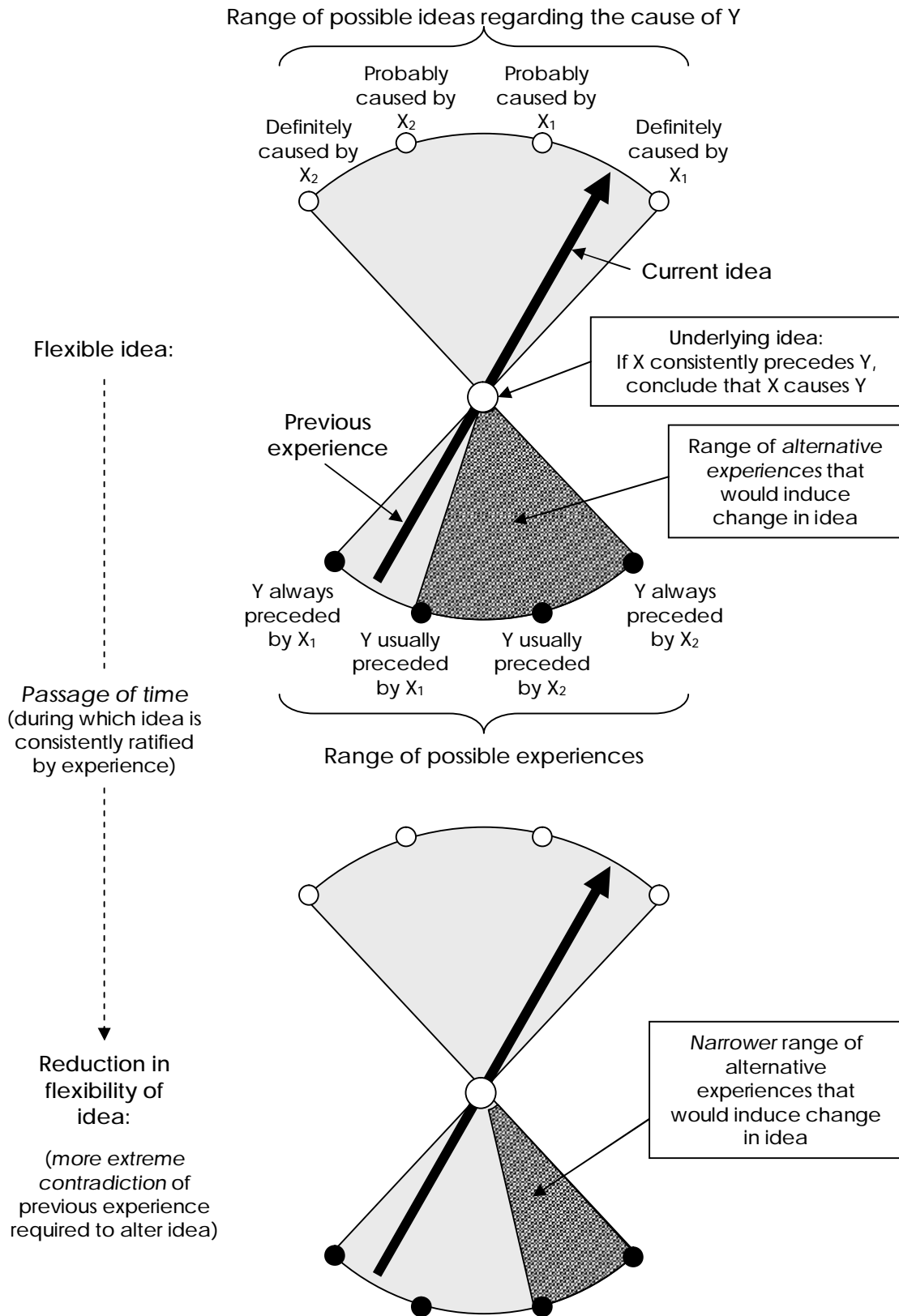
As was implied in Section 4.4.3, the economics of flexibility applies as much to ideas as to physiological variables. Hence, the longer an idea has withstood the test of time (by being consistent with experience or by providing a basis for effective action), the greater the extent to which it will have *lost its flexibility* – in other words, the narrower and more extreme the range of experiences that will induce a change in this idea. The nature of the human mind is such that these ideas are also “sunk” into deeper, less conscious regions of the mind (Bateson, 2000).

Figure 7.2 below provides a graphic example of this process. In this highly simplified example, a given event –  $Y$  – has only two possible causes:  $X_1$  and  $X_2$ . Which of these two alternatives is the *actual* cause of  $Y$  can only be inferred from experience. The spectrum of possible experiences ranges from a situation where  $Y$  is consistently preceded by  $X_1$  (and never by  $X_2$ ) to its inverse, with many gradations in between. The *underlying idea* in this scenario is the assumption that, if two events consistently follow each other, then the first event is the cause of the second. This idea forms the “fulcrum,” or the connecting point, between the experience of  $X_1$ ,  $X_2$  and  $Y$ , on the one hand, and the idea regarding the cause of  $Y$  on the other.

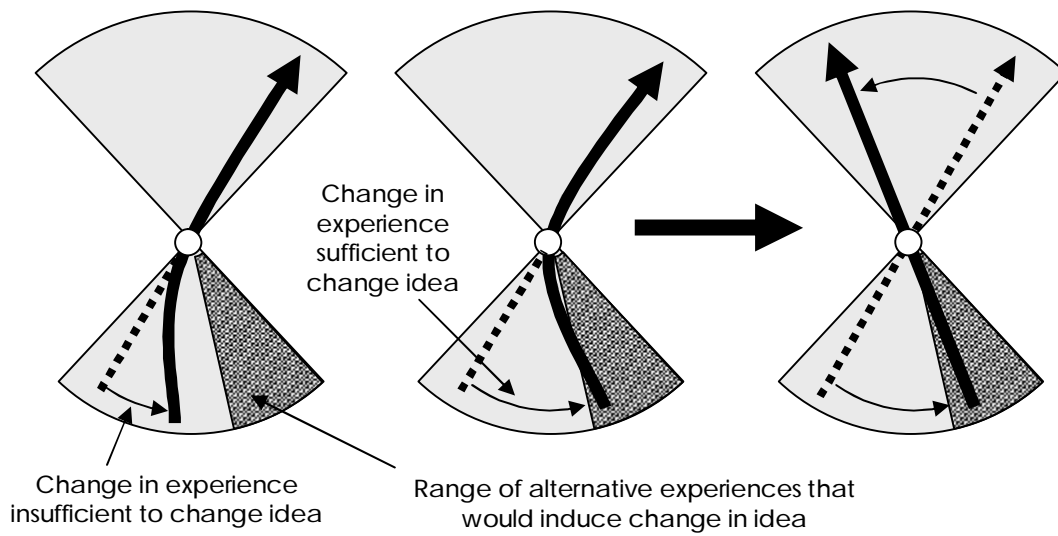
If one’s prior experience has been that  $Y$  is almost always preceded by  $X_1$ , this will have formed a reasonably certain conviction that  $Y$  is caused by  $X_1$  rather than by  $X_2$ . Initially, this belief will be relatively pliable in the face of contradictory experience. For example, a few instances in which  $Y$  is preceded by  $X_2$  rather than by  $X_1$  will lend credence to the idea that  $X_2$  is another possible cause of  $Y$ . However, if the rule that  $Y$  is preceded only by  $X_1$  has held for a considerable length of time, the belief will gradually acquire the status of indubitable fact. Once this has occurred, it will take a much more a dramatic change in experience (say, a shift to a situation in which  $Y$  is almost never preceded by  $X_1$ ) before the established belief is called into question and modified.

In terms of the diagram, this reduction of flexibility can be visualised by imagining that the arrow linking the experience to the idea is slightly elastic, and that the arrow’s point gradually becomes more and more “sticky” the longer it stays in one place. The greater this “stickiness,” the greater the deviation that will be required at the arrow’s lower end to dislodge it from its former position. Such a situation is depicted in Figure 7.3, while Figure 7.4 illustrates the postulated relationship between the time that an idea has remained in force and the probability that it will be altered through a change in experience.

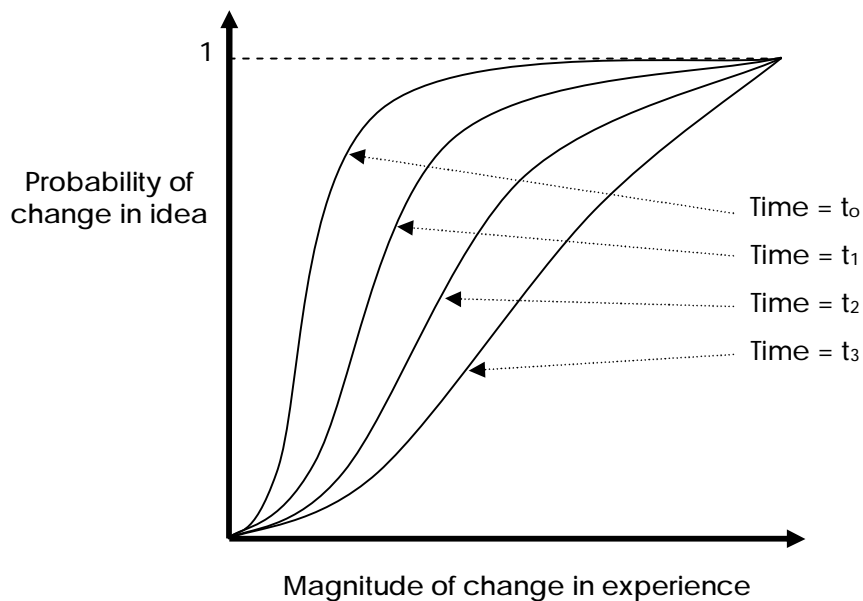
The increasing rigidity of an idea may also be visualised as a *progressive dissociation of that idea from its underlying premises*. Suppose, for example, that the belief “ $Y$  is caused by  $X_1$ ” has lost so much flexibility so that it is no longer affected by repeated experience in which  $Y$  is preceded by  $X_2$  instead of  $X_1$ . This implies that the belief is no longer wholly premised on the assumption that, if one event consistently precedes another, it is probably its cause.



**Figure 7.2 An example of the “hardwiring” of an idea**



**Figure 7.3 An experience that fails to alter an established belief**

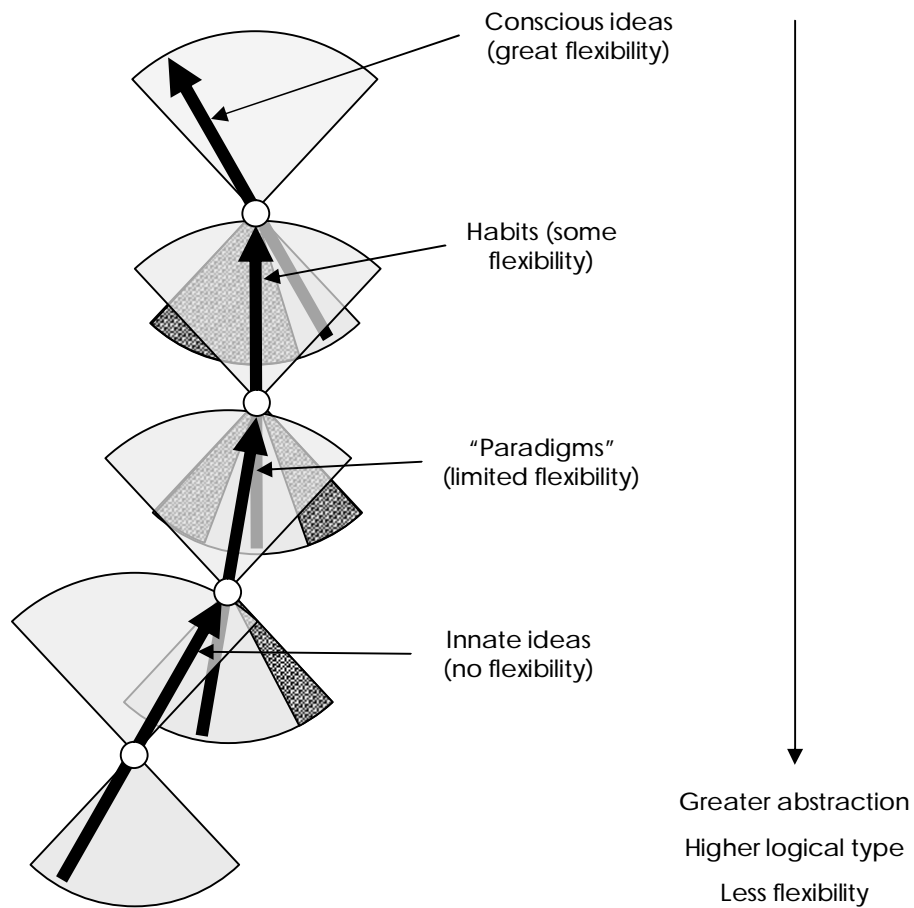


**Figure 7.4 The relationship between change in experience and modification of ideas**

The argument presented thus far in this section may be summarised as follows: The interrelationships among ideas are hierarchical, with some ideas forming the premises on which other ideas are based. Ideas that occupy more fundamental positions in this hierarchy are usually also more abstract. Because they are more abstract, they remain true over a wider range of circumstances, and therefore need to be revised less often. Because of the economics of flexibility, such ideas tend to become more and more fixed the longer

they remain unchallenged, so that they become harder and harder to change even if the need to change them should arise.

The process of moving down the hierarchy of ideas – or upward in logical typing, progressively uncovering premises underlying other premises – therefore involves a process of burrowing deeper and deeper into less flexible parts of the mind. The path traced by such “mental archaeology” is depicted in Figure 7.5. At first, one encounters ideas held in the highly flexible, adaptive realm of conscious thought. These are followed by ideas that have become encoded as habits, and are therefore slightly more resistant to change. These, in turn, are followed by ideas that constitute a person’s “paradigm” or fundamental outlook on life (and are likely to resist all but the most traumatic, “Damascus” experiences). Finally, at the root of the hierarchy, one finds those ideas – variously referred to as “instincts,” “innate knowledge” (Lorenz, 1996) or “archetypes” (Jung, 1990) – that have remained true for so long that evolution has encoded them into our genetic makeup.



**Figure 7.5 A hierarchy of ideas and their associated flexibility**

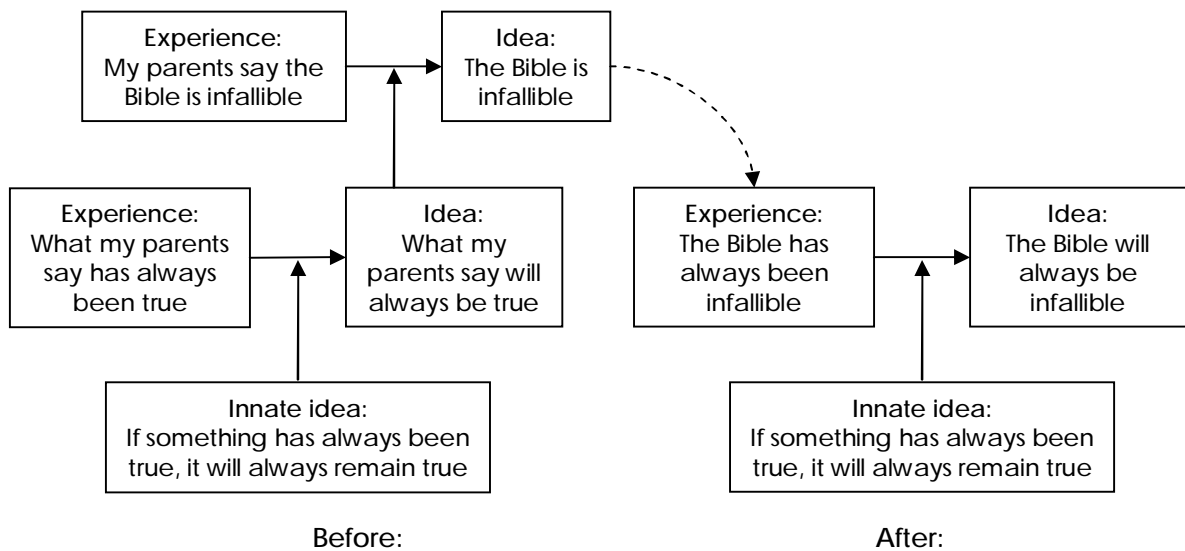
The aim of this section has been to integrate the notion of an economics of flexibility into the hierarchic model of ideas. This integration is made complete by recognition of the fact that changes in ideas are governed by the economics of flexibility precisely because this

economics is engraved into the human mind as an *idea*. If translated into words, this idea might read as the following proposition:

*“The more often something has proven true in the past,  
the more likely that it will always remain true.”*

This idea is sometimes referred to as the *uniformity principle* (Garrett, 1997). Because of its universal validity (consider the fact that it has always applied to all living things), it seems likely that evolution has encoded it into our genes, so that it forms one of the innate “operating principles” of the human mind.

Instances where ideas lose so much flexibility that they resist even the effects of changes in their underlying premises can now be conceptualised as follows: such ideas become dissociated from the premises on which they were originally based, and become *rooted directly onto the aforementioned “operating principle.”* For instance, I might originally believe the Bible to be infallible because the experience of my parents telling me so was supported by the assumption that my parents are always right. Later, I might shed the assumption that my parents are always right, but still believe the Bible to be infallible – simply because I have believed it for so long that it seems inconceivable I could be mistaken. Such a process is depicted in Figure 7.6.



**Figure 7.6 Hardwiring as change in the hierarchic position of an idea**

**d) Other factors that influence change in ideas**

It was stated above that ideas tend to become more and more inflexible the longer they remain unchanged. However, it may be more accurate to say that the resilience of ideas does not depend on time *per se*, but rather on the *number of times* those ideas have been ratified by experience. In other words, the flexibility of an idea depends on the *frequency* with which experiences have occurred in the past that were congruent with that idea. The frequency with which an idea was ratified by experience depends, in turn, on three factors:

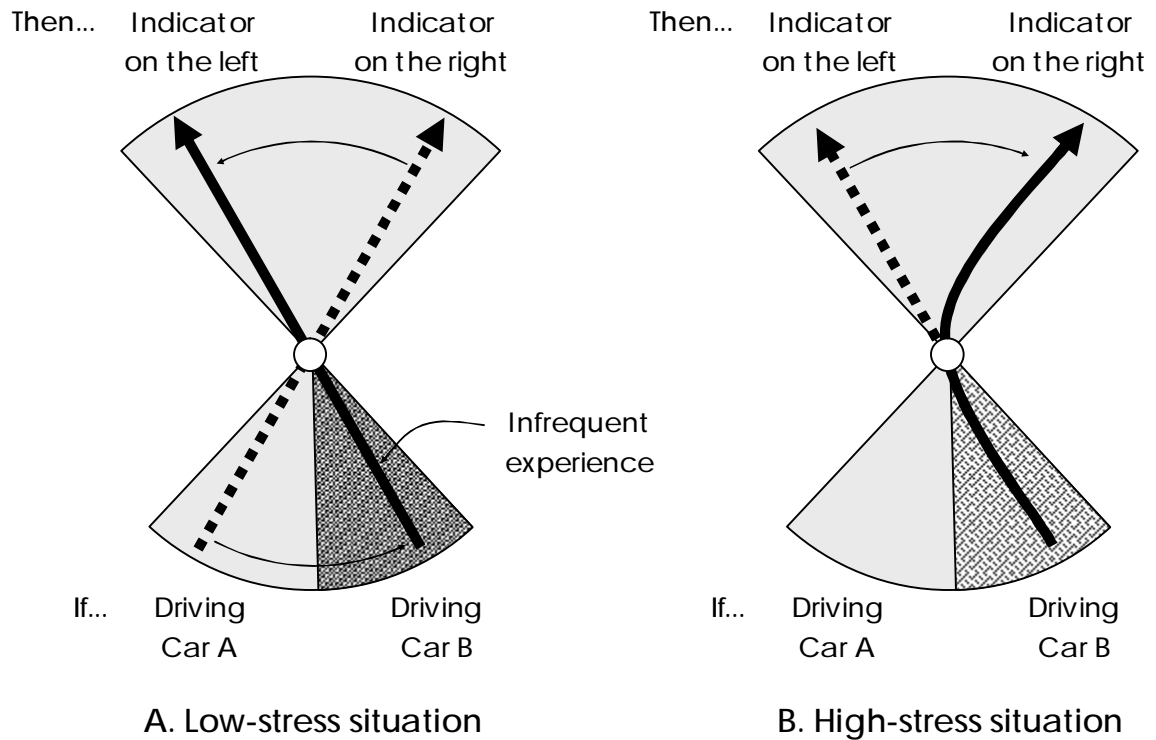


- ✓ The frequency with which *relevant experiences* occurred. A “relevant experience” may be defined as an experience that might either prove or disprove a particular idea. The belief that nuclear power stations cause cancer, for instance, would be neither supported nor challenged by the discovery that a particular politician is dishonest. Hence, that specific experience would not fall within the idea’s range of relevant experiences.
- ✓ The *variability* of relevant experiences. If all previous experiences relevant to a particular idea were highly consistent with one another, it is unlikely that any of them would have contradicted the idea. Hence, that idea’s flexibility would have diminished. Inclusion of this variable is supported by the common-sense notion that people who lead monotonous lives with little variation in experience tend to become less flexible, so that they are less able to deal with change when it does occur.
- ✓ The idea’s *level of abstraction*, or logical type. As was mentioned earlier, an abstract idea is consistent with a wider range of experiences than a concrete one. Hence, such an idea might never have been contradicted by past experience, even if that experience was highly variable.

The flexibility of an idea depends, therefore, on its *history*, as this defines the idea’s *readiness to change*. In order to predict whether change *will* actually occur, however, it is necessary to move from the past to the present. Information must be obtained, first of all, on whether any *current* (or likely *future*) experiences differ significantly from the experiences that originally led to the formation of the idea. If this difference is dramatic enough to exceed the limits of tolerance set by the idea’s flexibility, that idea is likely to undergo change.

When assessing the probability that an idea will undergo change, it is also necessary to consider *other, competing demands on the mind’s flexibility*. Consider, as an example, the experience of driving a car in which the indicator is located on the opposite side of where one is accustomed to finding it. As was mentioned in Section 4.4.3, one will probably succeed in turning corners without activating the windscreen wipers only as long as one is able to attend consciously to the task. However, as soon as other matters (such as the traffic or a talkative passenger) demand one’s attention, one may well revert to one’s accustomed (but, in this context, inappropriate) pattern.

This phenomenon is graphically illustrated in the figure below. In the scenario depicted in this figure, there are two automobiles: Car A (which has its indicator on the right-hand side of the steering wheel) and Car B (which has its indicator on the left). The driver regularly uses Car A, but drives Car B only on infrequent occasions. Consequently, he has acquired the *idea*: “The indicator is on the right.” Because this idea is frequently ratified by experience, it has become partly habitual. Nevertheless, it retains sufficient flexibility so that, on those occasions when the driver gets into Car B, it is temporarily transformed into the alternative idea (“The indicator is on the left”). However, this transformation only holds as long as there are not too many other information-processing demands laying claim on the driver’s mind. As those competing demands increase, the flexibility of the idea (in other words, the range of alternative experience required to dislodge it from its habitual position (“The indicator is on the right”)) decreases. This, in turn, increases the probability that the habitual idea will reassert itself.



**Figure 7.7 The effect of competing demands on flexibility**

Stated in more general terms, the principle illustrated by the foregoing scenario states that the mind has a finite amount of flexibility at its disposal at any given time. Hence, if a large proportion of this flexibility has to be channelled toward any particular task, the amount of flexibility available for *other* tasks will be concomitantly reduced. As a corollary of this principle, a situation in which a large number of tasks simultaneously demand attention or flexibility creates a state of *stress*, and thereby reduces the probability that any of these tasks will be accomplished successfully.

Thus far, three factors have been identified that influence the probability that an idea will undergo change:

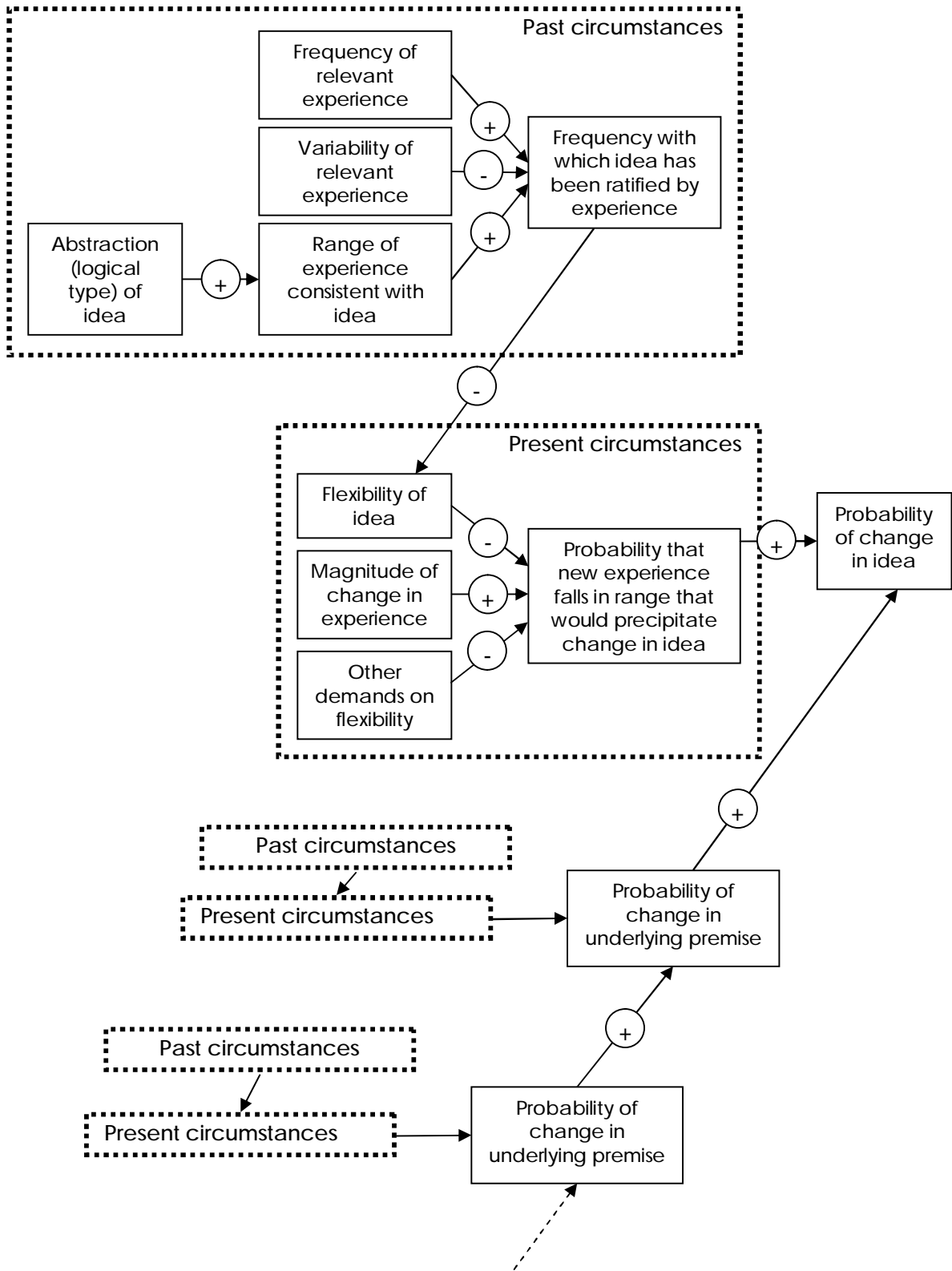
- ✓ Its *flexibility* (which, in turn, depends on the frequency with which it has been ratified by experience);
- ✓ Whether *current* experiences differ significantly from the experiences that originally led to the formation of the idea; and
- ✓ *Other* information-processing demands being imposed on the mind.

Yet another factor that influences the likelihood that an idea will undergo change is the probability that the *underlying premise(s)* on which it is based will undergo change. The relevance of this consideration stems from the hierarchic interdependence of ideas. As was mentioned earlier, a change in an underlying idea is likely to cascade upwards through many of the ideas based upon it.

To determine the probability that such a premise might undergo a change, it is necessary to follow the same procedure as that outlined above. In other words, information must be obtained on:

- ✓ The *flexibility* of that premise (which will depend on the same three variables listed above);
- ✓ Whether current (or likely future) experiences differ sufficiently from past experience to call that premise into question;
- ✓ Other concurrent information-processing demands; and
- ✓ The probability of change in the *premises underlying that premise*.

The task of identifying conditions for change in a particular idea is therefore by no means an easy one: it is a *recursive* process that involves identifying the conditions for change at every level of the hierarchy extending from that idea to the genetically determined constants of the human mind. This task is mapped out in Figure 7.8 below. In this diagram, "+" signs at connecting arrows denote *positive correlations* between variables, while "-" signs denote *negative correlations*. Thus, for example, the frequency with which a particular idea is ratified by experience will be large if experiences relevant to that idea occur with high frequency and if the variability of that experience is small.



**Figure 7.8 Variables determining the flexibility of an idea**

e) *Hierarchies of ideas in group settings*

It was mentioned above that every person's hierarchy of ideas is rooted in a set of *innate, genetically determined ideas*. These ideas do not owe their existence to any experience acquired during one's own lifetime; they are hardwired into the structure of one's brain and have been shaped by millions of years' evolution. Because these ideas have their basis in biology rather than experience, it can be assumed that the majority of these ideas are identical (or very nearly so) for all members of the species.

It was also mentioned that ideas which are not innate, but nevertheless are located close to the base of the hierarchy, tend to be highly abstract and therefore true over a wide range of circumstances. Because of the general validity of such ideas, it is to be expected that they will be *shared by large numbers of people*. Ideas falling in this category may include culture-specific premises and habits of thought. As was mentioned in Section 5.4.5, these are shaped by people's early childhood experiences, and manifest themselves in child-rearing practices and in the subtext of a variety of social interactions. Hence, they are passed on from one generation to the next with relatively little change.

As we come closer to the "surface" of the mind, however, one will tend to find greater diversity among people in terms of the nature and content of their ideas. This variety can be ascribed to the fact that the *day-by-day experiences* that shape people's beliefs, interests and preferences differ widely from one person to the next. It is also perhaps an inevitable consequence of the role differentiation that is a necessary characteristic of any technologically advanced society.

Thus, if it were possible to draw a diagram representing the ideas held by a group of people (stakeholders in a public participation process, for example), this diagram would have a *tree-like structure*. At its top, this tree would have a canopy consisting of a multitude of branches and twigs; these would represent the diversity among people in terms of their *particular* (or concrete) ideas. Tracing these branches to their bases, one would find that many of them join together. This represents the fact that, although differences in experience might lead people to adopt different ideas, they might still have many *underlying premises* in common. Examining the premises underlying those premises, one would find still fewer differences among individuals – in other words, more and more branches will become fused together as one moves down the tree. Finally, all branches would come together at a common base, which represents the universal aspects of the human mind that is the shared legacy of our species. Such an "idea tree" is depicted in the figure below.

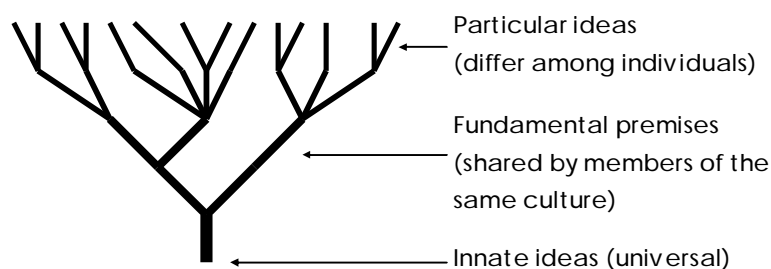


Figure 7.9 An "idea tree"

For different groups of participants, such “idea trees” will tend to take on different shapes. For example, in a culturally diverse group, the branches would split close to the base. A culturally homogenous group of participants, by contrast, will have many fundamental ideas or premises in common. Consequently, the tree will have a long trunk, and the first split between branches will appear relatively high above the ground. It is also possible that some groups will have “tangled” idea trees. This possibility arises from the fact that people might share certain particular ideas despite underlying differences in premises. Consequently, branches that have split off from one another may join together again further up. These alternatives are depicted in the figure below.

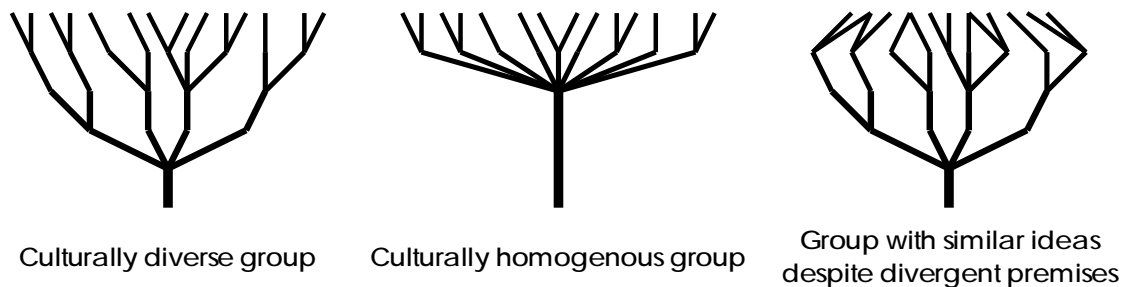


Figure 7.10 Groups with different “idea trees”

Thus far, the only kinds of ideas that have been considered are those that people might hold about the material world around them. However, people might also have ideas about one another, and about one another’s ideas. The complexities associated with this possibility are discussed in the following sub-section.

#### f) Ideas about others’ ideas

Forming an idea about other people’s ideas is like the act of placing one mirror in front of another: it conjures up images of their ideas of one’s own ideas, their ideas of one’s own ideas about their ideas, and so on. This hierarchy embraces the hierarchy of ideas-built-on-premises-built-on-premises, since one might have ideas about another’s premises, about the premises underlying those premises, and so on. One might even have ideas about someone else’s ideas about one’s own premises. Consider, as a highly simplified, hypothetical example, the interaction between two individuals – say, Xavier (“X”) and Yvonne (“Y”). The figure below illustrates the types of ideas that Xavier might entertain, as well as the antecedents and consequences of those ideas. As this figure shows, Xavier’s experiences of the material world – interpreted through his existing premises – may lead him to form certain ideas about that world. Some experiences may also change his premises about how experiences should be interpreted. Xavier’s ideas about the world will form the basis of his behaviour – in particular, his actions intended to either accommodate or change what he perceives to be his current circumstances.

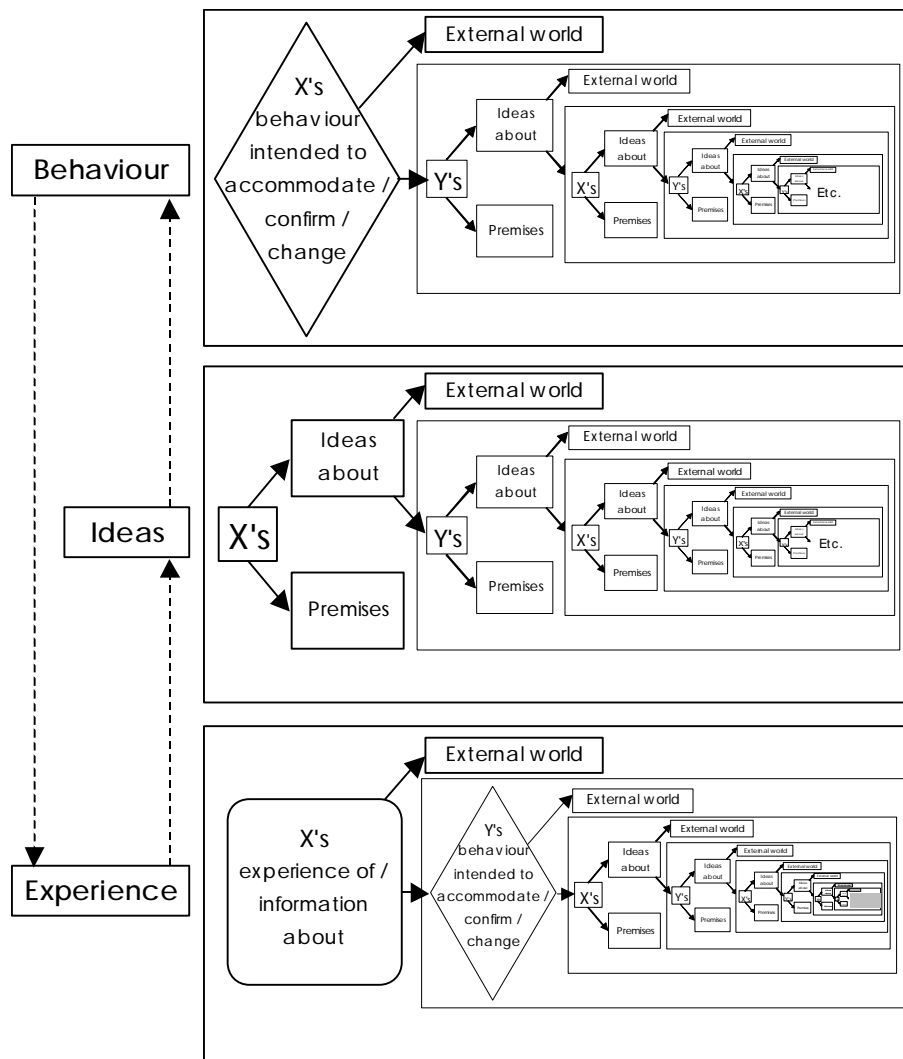
Xavier’s premises will also lead him to interpret Yvonne’s behaviour in certain ways so as to form specific ideas about her Ideas about the world. In addition, he might infer the premises according to which she interpreted her experiences to form those ideas. Based on his ideas about her premises, he might then engage in behaviour that is intended to either confirm or



challenge her ideas. He may even attempt to change what he perceives to be her premises.

The third level of the hierarchy involves Xavier's ideas – which may be based on information received from a third party, or formed on the basis of Yvonne's behaviour toward him – regarding her ideas about his ideas and underlying premises. It may be that he perceives some of her actions as attempts to either change or confirm his premises, his ideas about the external world – or his ideas about her premises and ideas. He may, therefore, act so as to either resist or yield to those perceived attempts to change his ideas.

In theory, this second hierarchy (which, of course, would have its mirror image in Yvonne) may be extended indefinitely. In practice, however, the number of levels would be limited by the amount of information that the human mind can contemplate at one time. Because of the economics of flexibility, which frees up information processing capacity by delegating proven ideas to unconscious levels of the mind, the number of levels that may be achieved in long-standing interpersonal relationships might be surprisingly large. Be that as it may, the limitations of language are such that an attempt to describe more than three levels is so clumsy as to be of limited value.



**Figure 7.11 A hierarchy of ideas about ideas**

### 7.1.2 Incorporating psychological concepts and theories into the model

The model advanced above was derived in a deductive manner from the general systems theoretical concepts of *logical typing* and the *economics of flexibility*. It takes as its starting point an inclusive definition of the term “idea.” According to this definition, an idea can be a belief, an attitude, an intention to act in a certain way, a habit, a premise of thought or action, or a belief or attitude regarding the ideas held by others. It was argued that ideas that are not innate, but have their basis in experience, can only come into being if other, more fundamental ideas are already in place to determine how that experience is to be interpreted. Thus, ideas stand in a hierarchic relationship to one another, and different positions within this hierarchy reflect differences in *logical type*.

Next, it was argued that ideas acquired through experience are only useful insofar as they maintain a degree of *flexibility* – in other words, if they are able to change in response to changing experience. However, because the mind possesses a finite “supply” of flexibility, and because the maintenance of flexibility always exacts some cost, ideas that have withstood repeated tests against experience without requiring modification will gradually become more and more rigid – in other words, they become ingrained as *habits*. While this poses the danger that ideas may be prematurely “hardwired” so that they will be unable to respond appropriately to possible future changes in circumstances, it has the advantage of “freeing up” flexibility that may be more effectively applied to other challenges in the here-and-now.

A third point raised by the model is that ideas occupying more fundamental positions in the hierarchy of logical types generally require less frequent modification. This trend results from the fact that fundamental ideas are necessarily more formal or abstract, and are thus applicable over a wide range of circumstances. The economics of flexibility dictates that such ideas will gradually be deprived of their flexibility.

Fourth, it was suggested that “consciousness” may be defined as *the region of the mind that hosts the most flexible ideas*. Thus, the degree to which an idea is endowed with flexibility correlates with (or perhaps determines) the extent to which it is accessible to conscious introspection. The inverse of this statement is also true: if an idea remains consistently true over a long period of time, and therefore loses much of its flexibility, it also sinks into deeper, more obscure levels of the mind. It is one of the great ironies of life that those ideas closest to the core of our being are also those that are most likely to remain forever hidden from us.

Finally, it was argued that the adaptability of an idea in the face of changing experience does not only depend on its history; it is also influenced by *present circumstances*. In particular, the fact that the mind may be simultaneously occupied by numerous tasks means that each of these tasks will consume a portion of the total available budget of flexibility. If some tasks demand more flexibility than is currently available, other parts of the mind will also be constrained in their functioning. Hence, the greater the information-processing demands imposed upon the mind at any particular instant, the smaller the amount of flexibility that will be available for any given idea.

In conclusion, it may be observed that, although the model does not make extensive use of empirical data, this does not necessarily detract from its validity. The axioms on which it is based all possess a high degree of plausibility. (For instance, it is hard to raise an objection against the assertion that a mind can only make sense of information if it is equipped with the necessary “readiness to receive” that information, or that flexibility is necessary but

always comes at a price.) Further support for the model is provided by the fact that it is *consistent with several of the established psychological theories and concepts* discussed in Chapter 5. These consistencies are explored in the following paragraphs.

a) *Hierarchies of ideas*

First of all, the notion that ideas may be classified in terms of a hierarchy of logical types is echoed in the distinction between *values, preferences, beliefs* and *epistemology*. This distinction was introduced in Section 5.2.5b) and applied to public participation by means of the process model presented in Section 6.3. The definitions of values, preferences, beliefs and epistemology offered in those sections makes it clear that these terms may all be subsumed under the heading “ideas.” However, these ideas differ from one another in terms of their degree of *abstraction*: beliefs and preferences are generally more concrete than values and epistemologies.

Furthermore, a person’s epistemology and values determine the *parameters* according to which changes in his or her beliefs and preferences will take place. More specifically, *epistemology* mediates the relationship between *experience* and *belief*, while *values* mediate the relationship between *belief* and *preference*. For example, my epistemology will determine whether or not I regard accumulated scientific evidence as convincing proof that biodiversity promotes human welfare. On the other hand, if I attach a positive value to the long-term survival and prosperity of the human race, the belief that biodiversity is a means to this end will translate into a strong preference that other species be preserved. Thus, values and epistemology belong to a *higher logical type* (in other words, occupy a more fundamental level in the hierarchy of ideas) than beliefs and preferences.

b) *Unconscious ideas*

Next, the notion that hierarchies of ideas extend deeper and deeper into unconscious levels of the mind is consistent with the distinction between different types of *power* offered in Section 5.3.5. Recall that French and Raven (1960) identified five bases of social power: reward power, punishment power, legitimate power (which is based on shared social norms), expert power (which is based on beliefs regarding to superior knowledge of another) and referent power (which relies on interpersonal relationships and emotional attachment). Bachrach and Baratz (1962) later identified another form of social influence that is distinct from the five bases of power listed above. They called this form of influence *covert power* and defined it as the ability to manipulate others’ thoughts, actions and values – sometimes even *without their being aware of it*.

Careful consideration of French and Raven’s bases of power reveals that all of them depend on manipulating the *experience* (and thus the beliefs and preferences) of others. Hence, they focus on the upper layers of people’s hierarchies of ideas. Covert power, on the other hand, exerts a subliminal influence on people’s *underlying premises*. Its strength lies in the fact that a change in a single fundamental premise (for example, a reduction in one’s feeling of self-worth) may alter a great many ideas that are built upon it. Furthermore, the effects of such subtle manipulation are often not immediately apparent to conscious scrutiny.

The role of unconscious ideas in shaping conscious experience is also acknowledged in the theory of *orders of communication*. As was pointed out in Section 5.3.1, people often need

to *communicate about their communication* – in other words, to explicate the rules for interpreting one another's messages. (For example, an utterance may have to be accompanied by a meta-message informing the recipient that "this statement is intended as a joke; do not take it seriously.")

Meta-communication (or the exchange of ideas about the *rules* of communication) therefore belongs to a higher logical type than the *content* of communication. In face-to-face interpersonal discourse, such higher-order communication is also frequently accomplished *beyond the sphere of speakers' awareness*. For example, a speaker may unconsciously make use of facial expressions or tonal inflections to signal to the audience how his or her verbal messages should be interpreted.

### c) *The economics of flexibility and the biological base of behaviour*

It was argued in Section 4.4 that the economics of flexibility is ubiquitous in the living world: it governs phenomena as diverse as biological evolution, acclimatisation and the formation of cultural institutions. The tenets of *evolutionary psychology* may be subsumed under the same general principle, thus forging a link between psychology and biology. As was pointed out in Section 5.1, evolutionary psychology posits that many of the current anomalies of human behaviour (ranging from our propensity for violence to children's fear of the dark) stem from the fact that our bodies and brains evolved in an environment that was very different from the one in which we find ourselves today. Traits that conferred an advantage in the stone age (a propensity for violence, for instance, may have been necessary for survival in a hostile environment) are not necessary adaptive any more.

If the evolution of the human race is viewed through the lens of the economics of flexibility, it becomes evident that adaptive traits were "hardwired" into our genes and our brains by evolution, precisely so that they *would not have to be re-learned by each new generation*. Mental flexibility could thus more profitably be applied to learning other things that are more changeable. There was no way the forces of evolution could have "foreseen" that humans would one day set about changing their environment at a rate that makes it impossible for natural selection to keep pace. Thus, genetic traits that are currently regarded as maladaptive or anachronistic persist precisely because they served our ancestors so well for so long.

### d) *Competing demands on flexibility*

The notion that flexibility can be "spread too thin" – in other words, that an idea's amenability to change is inversely proportional to the number of concurrent demands on the mind's information-processing resources – is a theme that runs through much of social psychology. Four examples will be discussed here. These are:

- ✓ The curvilinear relationship between arousal and performance;
- ✓ The elaboration likelihood model of persuasion;
- ✓ Cognitive heuristics; and
- ✓ The cognitive dissonance theory of attitude change.

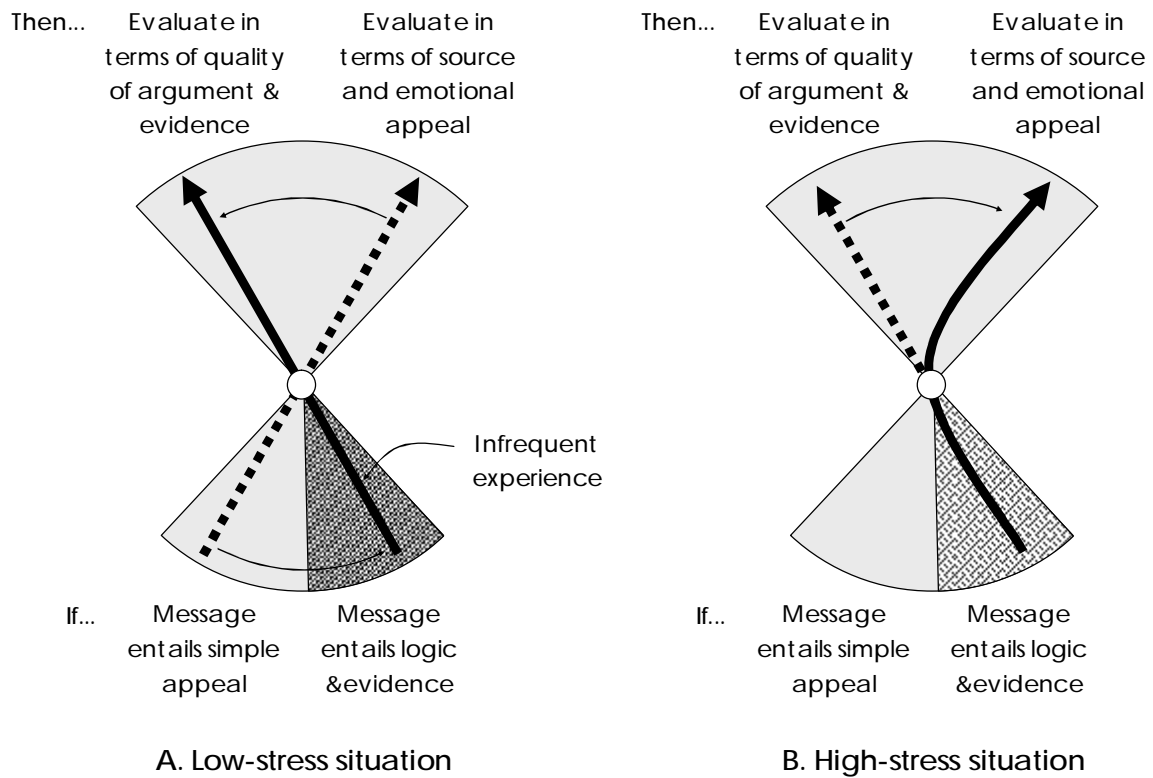
The *inverted-U hypothesis*, which was introduced in Section 5.2.3, states that increased emotional arousal is conducive to task performance – but only until it reaches a certain critical value. If arousal is increased beyond this point, performance begins to decline

again. It may be that the optimal level of performance occurs just before the factors responsible for arousal (which may include the presence of other people) *begin to impose a significant drain on the mind's budget of flexibility*. As this drain becomes more pronounced (for example, as the cheering crowd becomes a distraction rather than a boost), the amount of flexibility available for the task at hand is reduced, and performance deteriorates.

A likely explanation can also be offered for the fact that performance on simple, well-learned tasks reaches its peak at higher levels of arousal than performance on complex or unfamiliar ones. Thanks to the economics of flexibility, uncomplicated or familiar tasks *will already have been "hardwired" to some extent*. Hence, they will require fewer information-processing resources, and are less likely to be negatively affected if flexibility happens to be channelled elsewhere.

According to the elaboration likelihood model, which was described in Section 5.3.4, messages aimed at producing attitude change can be processed in one of two ways: through the "central route" (which involves careful attention to the quality of arguments and the plausibility of evidence) and the "peripheral route" (which relies on superficial cues such as the likeability or status of the message source). The peripheral route can be interpreted as the *filtering of information through the lens of habitual, "hardwired" or "rough-and-ready" premises*. The central route, on the other hand, requires greater flexibility in that it demands that one search one's mind for appropriate premises or background knowledge to analyse the content of the message.

The elaboration likelihood model also states that the peripheral route is more likely to be chosen in preference to the central route if a person's *motivation* to attend to the message is low, or if *distracting factors* are present. Just as excessive arousal impacts negatively on task performance, these distracting factors divert flexibility away from the message to be interpreted. As the following figure shows, processing information through the peripheral route when it was intended for the central route is analogous to the experience of activating the windscreen wiper when one was reaching for the indicator. Both responses indicate a reliance on habits that *usually yield adequate results* – otherwise they would not have become entrenched in the first place. (For example, a speaker's status is often a valid indication of the trustworthiness of his or her pronouncements.) However, both are inappropriate in the current circumstances.



**Figure 7.12 Effect of the economics of flexibility on cognitive elaboration**

Three main categories of *cognitive heuristics* (the representativeness heuristic, the availability heuristic and the anchoring-and-adjustment heuristic) were discussed in Section 5.2.2a). The circumstances under which these heuristics come into play (i.e. in situations of high stress, ambiguity or time pressure) suggest that they are *habitual mechanisms* designed to deal with incoming information at times when most of the mind’s flexibility resources are occupied elsewhere. However, as will be shown below, the explanation of cognitive heuristics on the basis of the economics of flexibility differs slightly among the three categories.

Of the three, the *anchoring-and-adjustment heuristic* lends itself most readily to interpretation in terms of flexibility dynamics. If flexibility is diverted away from an idea, the economics of flexibility dictates that it would *resist adjustment* in the light of subsequent information. Thus, while it might undergo some modification, this change may be insufficient to completely override the effect of the initial judgement.

The *availability heuristic* is also readily accommodated in the framework of flexibility. This heuristic gives rise to a tendency of *salient* ideas to exert a disproportionate influence on judgement and the interpretation of information. From the perspective of the economics of flexibility, “salience” may be defined as a function of the frequency with which an idea was ratified by past experience. Thus, a salient idea is one that has been partially “hardwired,” so that the probability of its being applied in inappropriate contexts is increased.

In order to explain the *representativeness heuristic* in terms of flexibility dynamics, it is necessary to posit the existence of a fundamental idea that, if put into words, might read something as follows: “*If two things look the same, they are the same.*” It is possible that this idea is innate; however, because it frequently yields adequate results (things that have



superficial resemblances often really *are* related), it may also become ingrained in the mind through repeated confirmation. Because it has the status of *habit*, the probability that this idea will serve as a premise for the interpretation of information increases as available flexibility decreases.

Like the representativeness heuristic, *cognitive dissonance* can be reconciled with the economics of flexibility only if the existence of a universal, fundamental idea is posited. Whereas the premise underlying the representativeness heuristic was assumed to be an assumption that *similarity implies identity*, the premise responsible for dissonance effects may be described as *an ingrained belief in the balance between causes and consequences* – for example, an idea that the value of a goal is proportional to the amount of effort required to achieve it. Thus, if the available flexibility resources are insufficient to allow assessment of a goal through careful consideration of its actual benefits, it may be evaluated on the basis of this premise instead. Consequently, a goal that required considerable effort might receive a positive evaluation despite the fact that it yielded limited benefits.

### 7.1.3 Applying the model to public participation

The preceding discussion amounts to a defence of Model A by pointing out its numerous overlaps or links with other models within psychology. Through this discussion, the model was elaborated to incorporate distinctions between values, beliefs, preferences and epistemology, between various bases of power, between orders of communication, and between social facilitation and social inhibition of task performance. It was also argued that the model is consistent with the axioms of evolutionary psychology, the elaboration likelihood model and the theories of cognitive heuristics and cognitive dissonance.

This section explores a few of the insights that the model yields into the psychosocial dynamics of public participation. It begins by tracing the ramifications of the assertion that ideas occupying different positions in a hierarchy of logical types are associated with varying degrees of awareness. Next, it examines the implications of the *economics of flexibility* and the dynamics of *habit formation* for public participation. Typologies are also developed to distinguish various ways in which participants' hierarchies of ideas might *differ* from one another and in which such differences might be *reconciled*. Finally the Habermasian theory of the *redemption of validity claims* (which was introduced in Section 3.6.5) and the notion of *trust* are revisited.

#### a) *Differences in the degree of consciousness associated with ideas*

If it is accepted that the ideas populating the conscious mind represent the apex of a hierarchy – one that extends through various layers of diminishing awareness until it finally joins up with the biological substrate of the mind – it follows that *unconscious elements are present in all aspects of behaviour related to public participation*. Some of these elements exist just below the threshold of consciousness, and may be accessed with relative ease if they need to be interrogated or modified. Others are buried so deep that they are forever hidden from introspection; these ideas may be completely inflexible, or they may change only over long periods of time or in response to intense experience.

A few examples of unconscious ideas that might influence a public involvement process in one way or another are provided below. These examples have been ordered in such a way that they trace a path from ideas that are close to the threshold of awareness (in other

words, that occupy relatively superficial positions in the hierarchy) to ideas buried deep in the unconscious (in other words, close to the base of the hierarchy):

- ▼ *Problem definition and the rules of discourse.* As was pointed out in Section 6.1.3, the initial stages of a public participation process often involve defining the problem and the rules to be followed during discussion. This may be regarded as a form of *meta-communication*, since it requires “parties [to] talk about how they want to talk about their dispute” (Nothdurft, 1995, p. 272). Once the process gets underway, these definitions usually take a back seat to the *content* of the discussion. Consequently, they also become less salient. Although they are delegated to a lower level of awareness, however, this does not mean that they lose all relevance: from their position on the fringes of consciousness, they guide and orchestrate participants’ behaviour and interpretation of one another’s actions. They may also be called back to centre stage at any time – especially if they are contravened. Meta-communication in public participation can also occur *subliminally*. Indeed, a public participation process will inevitably contain a “meta-communicative undercurrent” as participants automatically use their facial expressions, tone of voice, etc. to signal agreement or disagreement, to negotiate interpersonal relationships and the like (Ruby & Gascon, 2003). Even participants’ choice of words and timing of utterances may have a meta-communicative function, as these serve to “mutually signal and ratify the definition of the ongoing event as part of the mediation process” (Nothdurft, 1995, p. 274). Parties may even *contradict* the rules of discourse without being aware of it. As was mentioned in Section 6.3.5, they may unintentionally stray from the agenda, and body language can betray thoughts or feelings a person did not mean to make public. Crosby (1995, p. 163) implicitly acknowledges this possibility when he notes that a public participation facilitator has to be especially vigilant “to insure that his/her facial expressions and body language does not indicate a preference for one point of view over another.”
- ▼ *Power differences.* As was pointed out several times in Chapter 6, power differences among participants play an important role in shaping public participation processes. The most influential power differences are those that reside below the level of awareness, which may include differences in the ability “to control what information gets considered and what information is not salient...” (Adler & Kranowitz, 2005, p. 37). In comparison with ideas related to problem definition and the rules of discourse, ideas related to power (or the lack thereof) belong to a higher logical type – in other words, to a more fundamental level of the hierarchy. There are three pieces of evidence to support this claim. First, those with the greatest power are often the ones who get to define the problem and decide on the rules of discourse. Thus, power differences set the parameters for the process of *setting the discourse parameters*. Second, participants are sometimes completely unaware of being the targets of covert exercise of power (Saarikoski, 2000). Third, *changes* in a person’s subjective experience of power – in other words, processes of empowerment or disempowerment – occur very slowly. A single participation process is almost never sufficient to truly convince people that they can influence events that will affect their lives (Boyce, 2001; Kelly & Van Vlaederen, 1995). Conversely, the disillusionment and apathy that characterise many disadvantaged communities are probably the result of repeated experiences of being ignored or exploited.

- ✓ *Culture and personality.* In comparison with ideas related to power, ideas that define a person's personality and cultural affiliation reside at a still deeper level in the hierarchy. As was pointed out in Chapter 5, such ideas are usually formed early in life and are extremely resistant to change. Of the two, personality is probably the most fundamental, as it includes elements that may be genetically determined. The role of culture in shaping public participation processes was emphasised several times in Chapter 6. Personality differences among participants are no less important (Boyce, 2001). For example, whether a person is dominant or submissive, introverted or extroverted, or has an internal or external locus of control all exert a profound influence on his or her behaviour during a process. Dienel and Renn (1995) developed the following tongue-in-cheek taxonomy of personality types that are deleterious to public participation:

“First, there is the aggressive type of citizen who claims to speak for the rest of the world. These advocates of common causes often deny their own self-interests and know better than everybody else which policies are needed for the common good. Second, there is the apathetic citizen who would like to be on the winning team without raising his or her hand. Such citizens are hard to mobilize for any cause, but join the bandwagon as soon as all the work is done and benefits are to be distributed. Third, there is the moralist who wants to impose his or her moral standards on the rest of the world. Fourth, there is the hobby politician who wants to be celebrated for all his or her involvement and does not miss a chance of being portrayed in the media.” (p. 120)

It is interesting to note that the spectrum of ideas set out above (problem definition, rules of discourse, power, culture and personality) roughly corresponds to the levels comprising the structural model presented in Section 6.1. In that model, problem definition and rulemaking are both regarded as activities related to *discourse parameters*, which is an aspect of the *microsystem*. Empowerment and disempowerment, on the other hand, are among the *long-term social effects* of public participation – which, in turn, constitute an element of the *mesosystem* – while culture represents an aspect of the *macrosystem*.

It was claimed above that a single action or decision in a public participation process may be shaped by ideas at various levels. This claim can be substantiated by taking as example one of the most basic decisions facing any potential participant: the decision of *whether or not to become involved in the process*. Renn et al. (1995) compiled a list of factors that might influence this decision. The list includes a number of “rational” considerations that clearly reside in the realm of full conscious awareness. These include:

- ✓ Whether participation offers rewards such as monetary compensation, or even coffee and snacks (which are widely used as an incentive at public meetings);
- ✓ Whether the participation process will allow opportunities to voice grievances to leaders or government officials; and
- ✓ The probability that others will represent one's interests on one's behalf (the “free rider” phenomenon).

However, the decision to participate may also depend on “non-rational” factors of which a person might not be fully aware. These include:

- ✓ Peer pressure, solidarity and the desire to belong to a group (all of which may be regarded as aspects of the dynamics surrounding *interpersonal relationships*);
- ✓ Whether or not one believes one can make a difference to the outcomes of the process (which, in turn, reflects one’s sense of *empowerment* or *disempowerment*); and
- ✓ Whether one feels a moral obligation to participate (which will depend in part on one’s *value orientation* and *personality*).

b) *The logic of “irrational” behaviour*

The notion of an economics of flexibility sheds new light on much of the apparently irrational behaviour frequently found in public participation. In many cases, such behaviour is actually the consequence of a “logic” that is far older and runs far deeper than the logic of analytic reasoning. This primeval logic concerns the need to balance the imperative for change with the imperative to conserve the resources needed to enable change. Consider, for example, the fact that:

- ✓ Attempts by participants to persuade one another of their viewpoints often “do not follow the line of rational argumentation, but operate with common-sense assumptions, opinions, and stereotypes” (Nothdurft, 1995, p. 267). This suggests that the rhetoric of public participation often relies on what the elaboration likelihood model defines as the *peripheral route* of information processing.
- ✓ The degree to which preferences and/or information is *shared* by participants exert an extraordinary influence on group decision processes and their outcomes (Kameda, Tindale, & Davis, 2002). Because ideas that are held by many participants stand a greater chance of being mentioned during discussions, their disproportionate influence on decision-making may be attributed to the *availability heuristic*.
- ✓ Participants tend to make quick judgements regarding the character and motives of others, and these initial perceptions are very difficult to change later (Consultative Forum on Mining and the Environment, 2002). This tendency suggests that the *anchoring-and-adjustment heuristic* may be at work in public participation.
- ✓ As was pointed out in Section 3.2.1, participants’ support of and feelings of ownership towards decisions taken during a public participation process often depend more on whether they were involved in the process than on the quality of the decisions themselves. This trend is consistent with the predictions of *cognitive dissonance theory*, which states that outcomes are often evaluated more positively if they involved the expenditure of time and effort. “As with a market transaction, ownership will follow an expenditure of capital... [which] may be in the form of political, monetary, or other resources” (Baughman, 1995, p. 262).

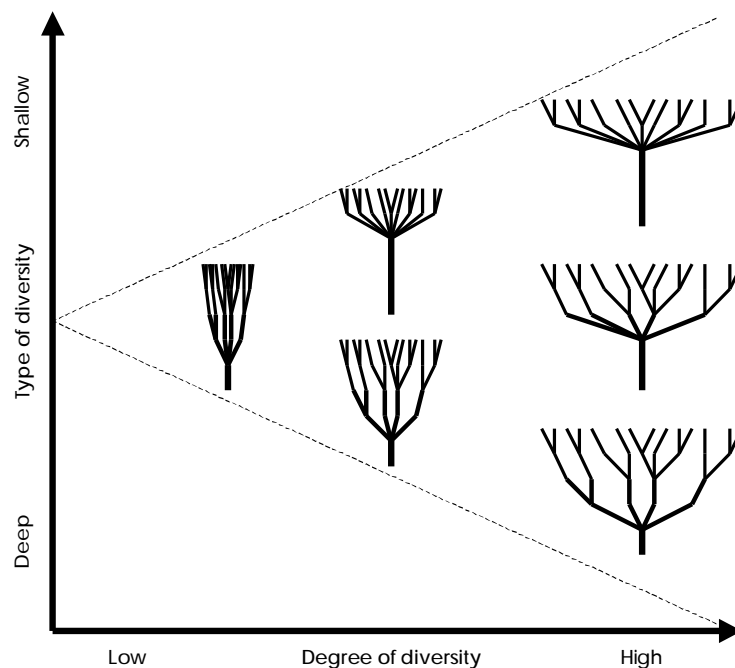
The tendencies listed above are most likely to occur in circumstances where participants are emotional (Litva et al., 2002; Ruby & Gascon, 2003), feel threatened (Baron, M. L. Inman, Cao, & Logan, 1992; Yim & Vaganov, 2003), are faced with extreme information loads (Krannich et al., 1994) or time pressure (Saarikoski, 2000), or in which the physical setting

presents distractions or inhibits communication (Webler et al., 1995). According to the economics of flexibility, one attribute that such circumstances have in common is the fact that they *channel available flexibility resources in many directions at once*. Consequently, limited flexibility is available to consider all the relevant facts, to evaluate the quality of an argument or to consider the possibility that others' motives might not be as they appear. In order to cope with such demands, participants then fall back on tried-and-proven or hardwired habits of thought. Although these mental habits are not always equally appropriate for the task at hand, they often *do* yield satisfactory results. In any event, they are probably more effective than the alternative course of action, which would be to freeze into inaction.

**c) Types of divergence among participants**

As was mentioned earlier, participants may bring diverse attitudes, perceptions, priorities and ways of knowing into a public participation process. The image of an "idea tree," which was developed in Section 7.1.1e), provides a powerful means of visualising the nature and degree of such diversity. In terms of the *degree* of diversity, idea trees can be arranged on a spectrum from highly homogenous (in which all the branches are close together, like those of a cypress, symbolising the fact that participants agree on most issues) to highly heterogeneous (in which the branches grow far apart, denoting the fact that participants hold widely divergent views).

Differences among groups in terms of the *type* of diversity in their members' ideas, on the other hand, require the addition of a second dimension to this spectrum. This extra dimension ranges from "shallow" diversity (in which participants who are divided by divergent interests or opinions are still united by similar premises and/or values) to "deep" diversity (in which agreement on even such basic issues as fundamental values and the appropriate ways of evaluation evidence is lacking). The figure below depicts the relationship of these two dimensions to each other.



**Figure 7.13 Two dimensions of diversity among participants**



Of the two dimensions, the *type* of diversity has the more far-reaching practical implications, as deep diversity and shallow diversity pose two distinct sets of challenges for public participation. The following critique by (Hadden, 1995) of regulatory negotiation (“RN”) – a public participation model that was discussed in Section 3.4.5g) – illustrates the disadvantages of conducting a public participation process characterised by *shallow* diversity:

The lack of heterogeneity among RN participants is of ... concern. The diversity of views included in RN is not the issue: public interest groups can offer quite diverse approaches to the same issue. Rather, it is the homogeneity of the participants’ experiences and activities. All the participants in RN are inside-the-beltway regulators – generally white males of middle age with considerable experience within government itself or as lobbyists. With such similar backgrounds, RN participants can readily communicate – “speak the same language” – no matter how different their views on a specific subject, and are thus able to arrive at consensus or compromise. More diverse participation, which is inhibited by minority groups’ lack of organization and resources and their relative disinterest in environmental issues thus far, might make RN more difficult at the same time that its outcomes might be more legitimate or reflect different conceptions of the public interest. (p. 251)

Groups characterised by *deep* diversity, on the other hand, display the opposite attributes in that their members usually hail from diverse cultural and/or social backgrounds. While groups with shallow diversity often fall short in terms of representivity and legitimacy, groups tending towards deep diversity are less likely to be able to reach consensus on the relevant issues (Kelly & Van Vlaederen, 1995). There are two reasons for this trend. First, because fundamental ideas determine how information is encoded or filtered to form or adjust more superficial ideas, participants with different underlying premises may “view the same set of issues through different lenses” (Adler & Kranowitz, 2005, p. 4). Thus, presenting them with identical information is *no guarantee that they will come away with the same set of ideas* (Yim & Vaganov, 2003). Evidence for this fact is provided by a sophisticated evaluation of a public participation process that was carried out in the state of Washington and funded by the US Department of Energy. The evaluation included pre- and post-tests of participants’ attitudes, and the results of these tests indicated that “as many task force members’ attitudes towards the project changed from positive to negative as vice versa” (Lynn & Kartez, 1995, p. 96).

The second reason why groups characterised by deep diversity find it difficult to overcome their differences relates to the *economics of flexibility*. Because this principle dictates that ideas occupying fundamental positions in the hierarchy are usually only capable of very gradual change, the *time* required to bring about a significant change at this level may lie beyond the practical limit for a single participation process. Several authors have remarked on the important role of time in public participation. For instance, (Hadden, 1995, p. 245) mentions that “trust can only be ensured if built up over a long-term relationship,” while Kelly and Karau (1999) point out that groups faced with time pressure tend to focus on fewer alternatives and place greater emphasis on shared information.

The notion of a spectrum ranging from deep diversity to shallow diversity is closely analogous to Adler and Kranowitz’s (2005) distinction between what they call “Type I,” “Type II” and



“Type III” problems. A *Type I problem* may be defined as a “technical” or “convergent” problem, in that differences among participants are mainly confined to disputes about the relevant facts.

*Type II* (or “value/ divergent”) problems, on the other hand, are those in which groups differ on deeper issues of priorities or ethics. Adler and Kranowitz argue that the types of problem-solving techniques that are appropriate for *Type I* problems (systematic problem identification, information collection, formulation of alternative solutions, etc.) are usually not sufficient for *Type II* problems. In order to be effective, they have to be supplemented with techniques aimed at ensuring broad representation of viewpoints, identifying mutual questions, fostering acceptance of diversity and the like.

Finally, *Type III* (or “wicked/ intractable”) problems are those characterised by high drama, volatility and general disagreement about what “the problem” actually entails. In comparison to *Types I* and *II*, *Type III* problems also stand the greatest chance of degenerating into *escalating conflict* (see Section 6.3.6a). As Adler and Kranowitz (2005) put it:

Because integrity, good will, trust, and working relationships are perceived to be missing, people often act impulsively and actively seek to defeat each other. The conflict seems to have a life unto itself and in the most extreme stages ... disputants give up their deepest instincts for self-preservation and charge headlong and together into the abyss. They want to annihilate each other, even if it costs them their lives, fortunes, or futures. (p. 12)

If Adler and Kranowitz’s trichotomy were changed into a continuum ranging between *Type I* and *Type III* problems, this continuum would therefore closely resemble the spectrum connecting shallow consensus and deep consensus.

#### d) *Types of consensus among participants*

The previous sub-section focused on the *initial conditions* that might exist in a public participation process. This section, on the other hand, focuses on a few of the possible *outcomes* of such a process. More specifically, it explores the various types of *consensus* that participants might achieve.

It was argued in Section 6.2.1 that the effectiveness of a public participation process often depends on whether participants are able to reconcile their differences and reach at least a degree of consensus. However, an important exception to this rule was later identified in Section 6.3.6a), where it was pointed out that *premature* or *false* consensus might be more deleterious to effective decision-making than no consensus at all. In other words, two types of consensus were identified in Chapter 6: “true” consensus (which is desirable) and “false” consensus (which is not).

Using the image of the idea tree and the economics of flexibility as conceptual tools, it is now possible to refine and extend this list by defining *three possible types of consensus* that might emerge during a public participation process. These are:

- ✓ *True consensus*. The hallmark of this type of consensus is that participants reach agreement on the most desirable course of action, as well as on *why* this is the most desirable course of action. In other words, it entails consensus with regard to preferences *and* with regard to the premises on which those preferences are based.

Consensus of this kind is the objective of what Vari (1995) calls the “confrontational” approach to dispute resolution, since this approach involves an exploration of the reasons behind differences among participants.

- ✓ *Superficial consensus.* In this type of consensus, participants agree on the most preferable course of action, *but for different reasons.* Hence, it involves reaching agreement despite underlying value differences. For instance, the overriding concern for a project proponent might be to ensure that the plans for the project are approved, as this will translate into expanded business opportunities. On the other hand, local communities who stand to be affected by the environmental impacts associated with proponent’s plans may understandably place the greatest value on their own well-being rather than on that of the company. It may be possible for these two parties to reach a mutually acceptable trade-off in which the project proponent offers adequate and acceptable financial compensation for the risks to which the communities will be subjected. Consensus of this kind is the objective of what Vari (1995) calls the “reconciliatory” approach to dispute resolution. In contrast with the confrontational approach, this type of dispute resolution does not emphasise an exploration of differences, but rather tries to find mutually acceptable solutions.
- ✓ *False consensus.* This type of consensus is the least desirable and usually the least stable of the three. It may be defined as *consensus achieved under pressure of limited flexibility.* In other words, it is a type of consensus that is not rationally motivated, but the product of selective information processing, persuasion through the peripheral route, attitude change based on cognitive heuristics, and/or behaviour change motivated by pressures toward conformity. In short, it is the type of consensus that results from *groupthink* (see Section 5.4.2b).

The figure below is a graphical representation of these three types of consensus.

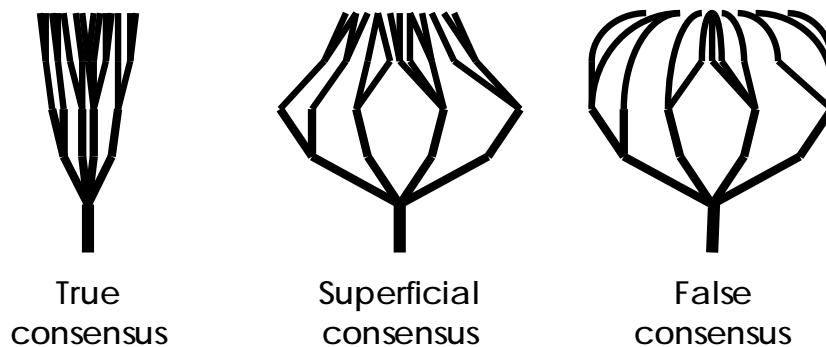


Figure 7.14 Three types of consensus

e) *Redemption of validity claims*

As the foregoing discussion shows, “true consensus” is the most desirable outcome of a public participation process, since it entails consensus that is based on “arguments and

evidence rather than rhetoric" (Dienel & Renn, 1995, p. 129). The process required to reach such consensus may be outlined as follows. First, participants are required to *identify* the differences in their attitudes or beliefs. Next, they have to identify the *reasons* for these differences – for instance, whether they have been exposed to different information, or whether they interpreted the same information according to different premises. If it is found that their differences in opinion resulted solely from having been exposed to different *information*, these might be reconciled if participants share the information they have at their disposal. However, if participants discover that they have based their reasoning on different *premises*, the process will entail a third step – that of exploring the *reasons why* some participants hold different premises. They might also have to explore the reasons behind these reasons, and so on, until they succeed in uncovering a set of premises that are shared all members of the group.

Reaching true consensus is therefore a recursive processes aimed at "anchoring arguments in a discourse of mutually accepted or generally acceptable opinions and values" (Nothdurft, 1995, p. 273). In order to visualise this process, the image of the idea tree may be put to use once again. To achieve true consensus, participants have to trace their respective "branches" in the tree, moving steadily downwards *until they find the place where all branches converge*. This is by no means an easy or simple task, however. It requires painstaking introspection and honest reflection on one's own beliefs and presuppositions. In essence, it involves asking oneself (or one another) the questions listed in Section 7.1.1b) above. For diverse groups (in other words, groups whose idea trees are characterised by "deep" diversity) this process might be much more difficult than for homogeneous groups, since it may involve burrowing into deeper levels of the hierarchy of ideas.

The difficulty associated with this task does not only depend on the attributes of *participants*; it also depends on the nature of the *problem*. In Section 5.4.1a), the concept of the *demonstrability* of a problem was introduced. A demonstrable problem is one for which it is possible to "demonstrate," through an appeal to shared axioms and logical reasoning, why a particular alternative is correct or optimal (Tindale & Sheffey, 2002). The higher the demonstrability of a problem, the greater the likelihood that participants will be able to find "common ground" from which to resolve their differences.

The process outlined above corresponds exactly to what Habermas called the *redemption of validity claims*. As was discussed in Section 3.6.5, Habermas (1971) distinguished between four types of validity claims:

- ✓ *Communicative* validity claims (i.e., claims regarding the linguistic correctness and comprehensibility of statements);
- ✓ *Constantive* validity claims (claims regarding the factual correctness of statements);
- ✓ *Regulative* validity claims (claims regarding the ability of statements to accurately distinguish right from wrong); and
- ✓ *Representative* validity claims (claims to the effect that statements accurately represent speakers' subjective experience).

He argued that the redemption of validity claims occurs through discussing, exploring and reflecting on validity claims so as to root them in the *background consensus of the lifeworld*.

This background consensus may be regarded as the set of ideas that are shared by all participants in a discourse. In other words, it is the point of convergence in their idea tree.

In closing, it must be noted that the process of redeeming validity claims or tracing ideas to their common root is a necessary – *but not always a sufficient* – condition for resolving differences among participants. In some public participation processes, stakeholders may be divided by irreducible value differences that no amount of rational discourse will be able to eliminate (Rothman, 1997). Reconciling such value differences lies in the province of *emotion* and *interpersonal relationships* rather than that of reason. Another issue related to emotions and relationships is the role of *trust* in public participation. This issue is explored in the following paragraphs.

#### f) *Trust*

The importance of trust in public participation has been mentioned several times on the preceding pages. Within the framework of Model A, trust may be defined by employing the notion of *ideas about others' ideas*, which was introduced in Section 7.1.1f). The statement “Xavier trusts Yvonne,” may be translated as “Xavier holds the idea (the belief) that Yvonne will not wilfully act in ways that run counter to his interests.” Since Yvonne’s actions are based on her ideas (for instance, her knowledge of Xavier’s preferences and the relative priority that she assigns to his needs), the statement that Xavier trusts Yvonne implies that he has specific ideas about *her ideas*.

If Yvonne trusts that Xavier trusts her, on the other hand, this would imply that she holds certain ideas about his ideas about her ideas. *Mutual trust* between Xavier and Yvonne may then be defined as a relationship in which he trusts her, trusts that she trusts him, trust that she knows that he trusts her, and so on – while a complementary set of ideas must of course be present in Yvonne. Such trust would form one of the central *premises* according to which Xavier and Yvonne interpret one another’s behaviour and by which they formulate their own actions.

#### 7.1.4 Concluding thoughts on Model A

The preceding sections point to the conclusion that Model A offers two major benefits when applied to public participation. First, it clarifies the causes of *incompetence*, which, together with self-interest and mistrust, was identified in Chapter 6 as among the major causes of problems in public participation. Of the various instances of incompetence discussed in Section 6.3.3, all but one can be at least partially attributed to the combined effects of *differences in ideas* and the *economics of flexibility*. For example:

- ✓ *Failures to assimilate available information* tend to occur in situations where participants hold divergent ideas about the factual issues relevant to the problem at hand, and where these ideas have remained constant for long enough to have become relatively rigid. Consequently, the provision of factual information to participants does not carry sufficient psychological impact to affect changes in those ideas.
- ✓ *Framing effects* occur when participants use different underlying premises to interpret information that is presented to them, and when the choice of these premises is dictated by habit rather than by the nature of the information. (For

example, scientists who are used to framing problems in factual or technical terms will tend to apply this premise to value-based problems as well.)

- ✓ *Misunderstandings and unrealistic expectations* can be attributed to the tendency of participants to rely on their *habitual modes of communication* without considering the possibility that others might attach different or inappropriate interpretations to their messages. (For example, project proponents or experts may employ technical jargon when making presentations, and overlook the fact that these terms may be inaccessible to less educated participants.)
- ✓ *Aversion to change* occurs when participants' *preferences* have become hardwired to a significant extent, so that a departure from the *status quo* is automatically rejected without considering its possible merits.

Exaggerated sensitivity to a perceived *loss of control* represents one instance of incompetence in public participation that is *not* readily explained in terms of the economics of flexibility and diversity of ideas. As will be argued later in this chapter, negative reactions to the experience of losing control may be more accurately interpreted as responses to messages about *interpersonal relationships*. For example, if a project proponent fails to give members of the public a say in decisions that will affect them, this conveys the unspoken message that the proponent regards himself as being in the dominant position in the relationship. If such dominance is not acceptable to other participants, they may well oppose the proponent's decisions in an attempt to redefine the relationship. (The economics of flexibility does, however, play some part in determining the *severity* of negative responses to a perceived loss of control. It was mentioned in Chapter 6 that people who are *accustomed to being in a dominant position* tend to find it especially threatening if others take decisions on their behalf.)

A second benefit of the model is that it subsumes many of the challenges associated with the effective *facilitation* of public participation processes under a single heading – namely, that of *channelling flexibility where it is needed most*. This may involve exerting strict control over factors that are likely to divert participants' attention (or available flexibility) away from the task at hand. Thus, a skilled facilitator is one who knows how to create discourse settings that minimise distractions, prevent debates from degenerating into emotional exchanges and reduce the probability that participants will fall back on cognitive heuristics when evaluating information.

Given the fact that the relationship between arousal and task performance is a curvilinear one, it may be that the most successful public participation facilitators are those who can strike an *optimal balance between insufficient and excessive demands on participants' flexibility*. If issues are presented in such a way as to create no distress whatsoever, they may be regarded as being relatively unimportant. Consequently, participants may not be motivated to apply the cognitive effort required to examine and perhaps modify their existing ideas. On the other hand, if the situation is experienced as too threatening, attempts to cope with this threat will siphon off much of the flexibility required to assimilate relevant information. As a result, the quality of decision-making will again be reduced. Somewhere between these two extremes, however, there might be a point where the "energy created by the conflict may be turned into positive energy that is aimed at resolving issues both related to, and beyond, the focus of the initiative" (DAAF, 2001, p. 9).

Despite its advantages, the model also has two significant shortcomings. The first of these shortcomings is related to the fact that it has an *individualistic focus*. Although it emphasises the interrelatedness of ideas in the minds of *individuals*, it does not provide the means for depicting interaction among ideas held by *different* people. Because of this limitation, it is not a very effective tool for analysing the interpersonal dimension of public participation. As Section 7.1.1f) indicated, a comprehensive treatment of even a two-person dyad within the framework of the model requires consideration of X's ideas about Y's ideas, of Y's ideas about X's ideas, of X's ideas about Y's ideas about X's ideas, and so on. Such an analysis quickly becomes prohibitively complex. In real life, people reduce such complexity to manageable proportions by *jumping to a higher level of description*: ideas about ideas are condensed into *ideas about relationships*. Model A, on the other hand, does not make allowance for more than one level of description.

A related shortcoming of the model is the fact that it treads lightly around issues of *culture* and *group identity*. It recognises that members of the same culture or social group generally employ similar premises for viewing the world and evaluating issues. However, it does not explain how such uniformity of premises is able to take root in the first place, or how it is maintained over generations despite the multiplicity and ambiguity of individual experience. Moreover, the model does not explicate the relationship between *shared premises* (which cannot be observed directly, but influence behaviour in a roundabout way by mediating the formation and modification of other ideas) and the *tangible manifestations of culture* as viewed by an outside observer. The model presented in the next section attempts to address these shortcomings.

## 7.2 MODEL B: LEVELS OF DESCRIPTION IN PUBLIC PARTICIPATION

A recurring theme in the previous chapters was the notion that it is often possible to compile alternative, but equally valid, descriptions of the same system or set of phenomena. In Section 4.3.3, it was argued that such descriptions might differ in terms of the *level of abstraction* they employ. Thus, it may be possible to compile high-level and low-level descriptions of the same phenomena. Each will have its own strengths and weaknesses: the low-level description will offer a great amount of detail, but often at the cost of tremendous complexity and an inability to recognise large-scale patterns or connections among phenomena. High-level descriptions, on the other hand, will have the opposite advantages and disadvantages.

The notion of contrasting levels of abstraction appeared in Model A, where *ideas* were distinguished in terms of their relative positions in a hierarchy of logical types. It was mentioned that ideas occupying more fundamental positions in the hierarchy also tend to be more abstract. However, the model itself did not go beyond a single level of description. Its focus was confined to individual role-players in public participation processes, the ideas that populate their heads, the parameters according to which such ideas might undergo change and the ways in which populations of ideas might differ from one individual to the next or from one group to the next.

The model presented in this section, by contrast, takes a broader view in that it identifies, compares and forges links between *various levels* at which the psychosocial dynamics of public participation might be described. These include not only the level of *individual* behaviour and experience, but also levels pertaining to sequences of *interaction* among



participants, to interpersonal *relationships* and to *group dynamics*. Furthermore, the model recognises that *participants themselves* inevitably form impressions and compile descriptions of the participation process, that such impressions and descriptions may contain elements residing at any of these levels, and that they may exert a powerful effect on individual behaviour and on the overall shape of the process.

This structure of this section is similar to that of its predecessor. It begins by sketching the model in broad brush-strokes. Following this, the outline is coloured in by incorporating aspects of other psychological models. The model is then applied in the context of public participation.

### 7.2.1 Sketching the model

In Section 4.3.3a), it was argued that a precise definition of levels of description hinges on a distinction between three types of variables:

- ✓ *Dynamic variables*, or variables describing the state of a system at a given instant in time;
- ✓ *Control parameters*, or variables describing the relationships among dynamic variables; and
- ✓ *Order parameters*, which denote trends or patterns in the values assumed by dynamic variables.

As their name suggests, dynamic variables change from moment to moment. Control parameters and order parameters, by contrast, are comparatively stable, changing at a much slower rate. The distinction between the three types of variables was illustrated by the example of a heater-thermostat system controlling the temperature of a room. It was pointed out that it is theoretically possible to describe such a system at a sufficient level of detail to capture the motion of each individual molecule. Such a description would require an extremely large number of dynamic variables, however.

The *control parameters* specifying the relationships among these dynamic variables would include the mass of the air molecules, since this determines how molecules influence one another's position and velocity. (If a heavy molecule collides with a lighter one, the velocity of the former will be less affected than the velocity of the latter.) An example of an *order parameter*, on the other hand, would be the average kinetic energy of all the air molecules in the room. In everyday language, this average kinetic energy is referred to as *temperature*: a "warm" object is nothing other than an object composed of energetic, rapidly moving atoms and molecules.

It was also pointed out that, although control parameters and order parameters are relatively stable in comparison to dynamic variables, they are not completely static. Hence, it is possible to compile descriptions that focus on *changes* in the values of these parameters, and on the manner in which such changes are related to one another. For example, one might devise a mathematical formula that identifies the manner in which different variables influence the temperature of the air in the room. These variables would include the *mass* of the air molecules (all other things being equal, a heavier or denser gas will be hotter than a lighter one) and the *state of the heater* in the room (if it is switched on, the temperature will tend to rise). Such a description would belong to a *higher level* than the description focusing on the motion of individual molecules: the control parameters and

order parameters of the molecular description become the *dynamic variables* of the macroscopic description.

Changing from the lower to the higher level of description greatly reduces the number of dynamic variables needed to describe the system – although this advantage is achieved at the cost of reduced detail. The higher-level description also has its own control parameters (such as the thermostat setting, which determines the temperature at which the heater switches on or off) and its own order parameters (such as the average temperature of the room). A *third-level description* of the system would therefore be one that focuses on changes in and relationships among these parameters (for instance, the fact that a change in the thermostat's setting would cause it to regulate the room's temperature in such a way that it fluctuates around a different average value).

Differences between control parameters and order parameters in terms of their causal relationship to one another and to their underlying dynamic variables were also explored. It was argued that, whereas a change in the value of a control parameter can be said to cause global changes in the behaviour of dynamic variables, a change in an order parameter merely *describes* or summarises such changes. Thus, if the relationships among control parameters and order parameters are explicated at a higher level of description, it normally emerges that the control parameters are *independent variables*, while the order parameters are *dependent variables*.

If a system contains appropriate linkages or feedback loops, however, an order parameter may also exert a reciprocal influence on a control parameter. In such cases, the order parameter may be regarded as *taking on the role of a control parameter*. This principle was illustrated by contrasting the state of a heater with the temperature of the room in which that heater is installed. It was mentioned above that, in relation to the motion of air molecules, the state of the heater is a control parameter while the room's temperature is an order parameter. If the heater is switched on, the flow of electrical current through its element will cause the molecules in the element to vibrate faster. This, in turn, will increase the kinetic energy of the surrounding air molecules. At a macro level, this change will be reflected as an increase in ambient temperature. Thus, while it is appropriate to say that the change in the behaviour of the air molecules was caused by a change in the state of the heater, it is not meaningful to say that it was "caused" by the change in temperature. If the heater is equipped with a thermostat, however, a change in temperature might cause the thermostat to switch the heater on or off – thereby indirectly exerting control over the motion of air molecules. The feedback loop created by the thermostat therefore allows the temperature of the room to act as a control parameter.

A higher-level example of the same principle is provided by the relationship between the setting of the thermostat, the state of the heater and the average temperature of the room. Because the thermostat setting controls the relationship between temperature and the state of the heater, it also indirectly determines the average temperature. However, because the thermostat has no memory, it cannot register anything more than the temperature at a particular instant. It cannot recall previous temperature values so as to calculate the average around which these values fluctuate. Hence, the thermostat does not provide a means by which the average temperature can influence the thermostat setting.

One way in which such influence can be effected, however, is through the presence of a human occupant in the room. Unlike a thermostat, a human being has a memory, and can

therefore discern *trends* in temperature fluctuations. If the average temperature falls below the occupant's threshold of discomfort, he or she may therefore decide to change the thermostat setting to a higher level. Thus, the addition of the human element to the system enables its *average temperature* (an order parameter) to act as a control parameter by indirectly influencing the relationships among its underlying dynamic variables.

A number of parallels can be drawn between the behaviour of people in a group setting (such as a public participation process) and the behaviour of a heater-thermostat system. Both systems can be described at various levels, and in both cases the relationship between adjoining levels can be defined in terms of order parameters and control parameters. Furthermore, order parameters in both types of system may double as control parameters, if appropriate linkages or channels of feedback are in place. These parallels are explored in greater detail below.

#### a) *Individual behaviour*

The lowest appropriate level for describing group processes is that of *individual behaviour* (Arrow, McGrath, & Berdahl, 2000). Just as the motion of gas molecules may be described by variables denoting their position and velocity at any particular instant, the behaviour of individuals may be defined in terms of moment-by-moment changes in their *actions* and *experiences*. In the case of gas molecules, the control parameters determining how particles influence one another's motion include their mass. The control parameters of individual behaviour, on the other hand, are those variables that determine how experience is translated into behaviour, and how people influence one another's experience and behaviour. In keeping with the terminology of Model A, such control parameters may be referred to as "*ideas*." In other words, they include beliefs, perceptions and intentions to engage in particular actions.

This distinction between ideas, on the one hand, and action and experience, on the other, is consistent with Bateson's (2000, p. 242) definition the self as "an aggregate of habits of perception and adaptive action *plus*, from moment to moment, our 'immanent states of action'." In other words, *we are what we repeatedly do*. The figure below is a schematic representation of the relationship between ideas, behaviour and experience. The resemblance between this figure and Figure 4.22 (which illustrates the relationship between the mass of gas particles and their position and velocity) also highlights the similarities between the two types of system.

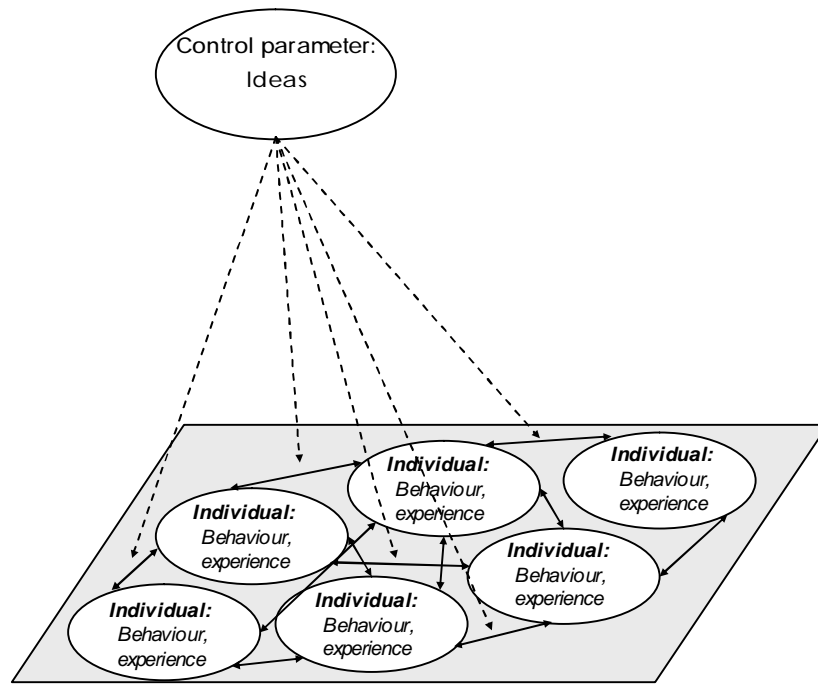


Figure 7.15 Ideas as control parameters

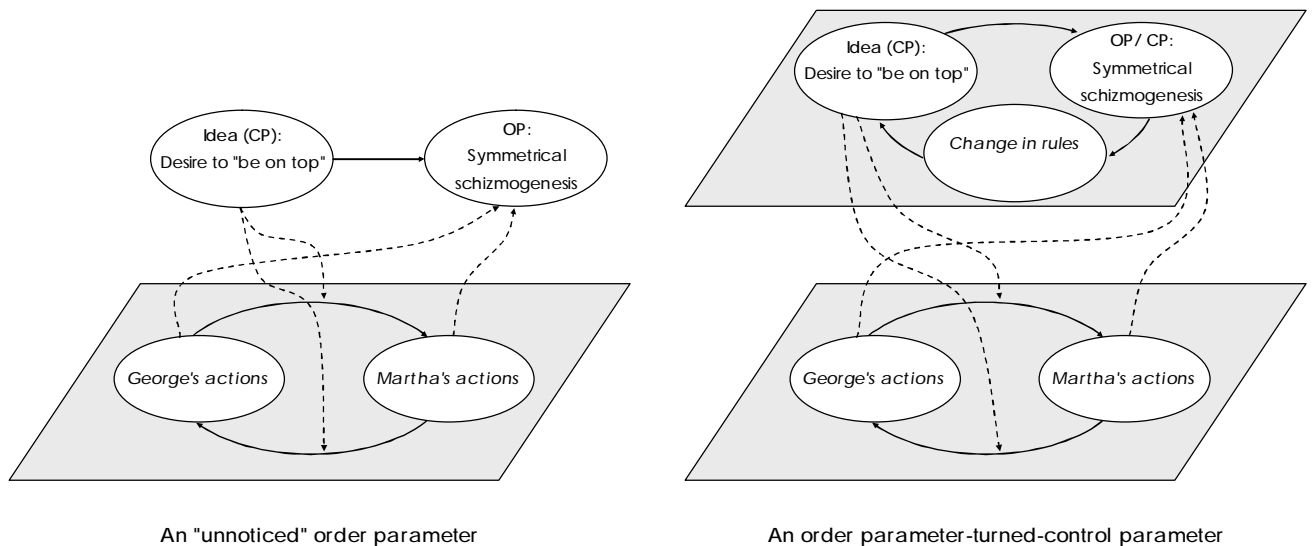
b) Sequences of interaction

When observing a group of people, it may also be possible to discern *trends* or *patterns* in their behaviour. In particular, individual actions may link together to form *sequences of interaction*. The identification of such sequences greatly reduces the number of variable needed to describe the behaviour of a group. For instance, it is much easier to say "The group is voting on such-and-such a matter," or "The group is discussing the merits of this or the other cause" than to describe every single action and utterance constituting these activities. In other words, such sequences play a role that is analogous to that of *temperature* in the description of gas molecules – they are *order parameters*.

Sometimes, such sequences or patterns are only visible to an outside observer; they have no effect on the individuals whose behaviour they describe – perhaps not even on an unconscious level. Consider, for example, Watzlawick, Beavin and Jackson's (1967) analysis of Edward Albee's play, "Who's afraid of Virginia Woolf?" which was mentioned in Section 5.3.3b). These authors point out that the interaction between the two main characters in the play – George and Martha – is characterised by *symmetrical schismogenesis*. Because every (real or perceived) act of aggression elicits a still more aggressive response from the other party, and because neither party wants to concede the upper hand to the other, they repeatedly become locked in cycles of escalating conflict. Yet, neither of the two characters seems to be aware of this numbingly repetitive pattern. They know *that* they are quarrelling, but they do not know *why*. Their behaviour is reminiscent of a thermostat that has been incorrectly configured, so that it responds to an increase in temperature by switching the heater *on* instead of *off*. Because the thermostat is unable to recognise *trends* in temperature, but only responds to the *value* assumed by this variable at each particular instant, it can never "know" that it is causing the room to become steadily hotter and hotter.

The relationship between George and Martha would have taken a very different turn, however, if they had become aware of the self-reinforcing nature of their fights – say, if it had been pointed out to them by a third party, such as a therapist. They might then have attempted to change the ideas governing their responses to one another, thereby perhaps changing the overall pattern of their interaction. If the observed schismogenic character of their interaction had become an impetus for change, it would have been appropriate to describe it as an order parameter that has acquired the status of a control parameter.

If an interactional sequence assumes the role of a control parameter, its relation to its constituent elements becomes reciprocal. Not only does the sequence emerge from the relationships among individual actions; it also serves as a contextual frame for the interpretation (and, possibly, the modification) of future actions. The contrast between an “unnoticed” pattern of interaction and one that has become effective as a control parameter is depicted in the two figures below. In these figures, “control parameter” is abbreviated as CP, and “order parameter” as OP.



**Figure 7.16 Order parameters and control parameters in human interaction**

Another example of interactional order parameters that can become control parameters is provided by the phenomenon of *classical conditioning* (see Section 5.2.4). In Pavlov’s experiment, the behaviour of the canine subject was initially governed by a control parameter that might be worded as follows: “If food, then salivate.” As the experiment unfolded, however, the dog became aware of a *pattern* (an order parameter) in its stream of experience: the appearance of food was consistently preceded by the sound of a buzzer. This observed pattern eventually led to a change in the aforementioned control parameter: it was replaced or supplemented by the idea: “If buzzer, then salivate.”

The example of classical conditioning also illustrates the fact that the perception of patterns (and the subsequent effects of such perceptions on behaviour and experience) *do not always occur at a conscious level*. As Weiten (2001) points out, one might be conditioned

by repeated experience to associate a particular sound or smell with a significant person or episode in one's life. If, in a different context or at a later time, that smell or sound evokes the emotion attached to that person or episode, one may be at a loss to explain why one suddenly feels the way one does.

c) *Patterns of interactional sequences*

The preceding paragraphs indicate that, while the behaviour of groups may be described in terms of individual actions, a higher-level description would focus on *patterns* of actions, or sequences of *interaction*. At a still higher level, then, patterns of interactional sequences – or *patterns of patterns of actions* – emerge. Because of the abstract nature of such patterns, they are often very difficult to recognise. Consider, for example, Bateson's (2000) experiment with the dolphin, by which he illustrated the phenomenon of Deutero-Learning (see Section 5.2.4c). While the animal had little difficulty recognising the patterns characterising *individual sessions* within the experiment, it took much time and frustration before she was able to discern the pattern connecting all these sessions – namely, that the rules of reinforcement changed with the commencement of each new session. It may be assumed that the jump for patterns to *patterns of patterns* poses similar obstacles for human beings.

However, it appears that there are at least two types of second-order patterns that human beings are extremely proficient at recognising – at least under some circumstances. The first of these is the patterns of patterns of syllables that embody the *rules of language*. Chomsky (1986), Pinker (1997) and others have argued that these patterns are so complex and open to such various interpretations that the human ability to acquire language can only be explained by positing the existence of a *language acquisition device* – an innate “pattern recognition algorithm” that is specifically attuned to the deep structures underlying the chaos and flux of verbal utterances. This device operates entirely at an unconscious level (which is consistent with the notion that it occupies a very fundamental level in the hierarchy of ideas depicted in Model A). We know *that* we are able to speak our mother tongue in a grammatically correct manner, but we are unable to say *how* we learnt to do so.

A second type of higher-order pattern that carries profound significance for the human mind is the patterns of interactional sequences commonly referred to as *interpersonal relationships* (see Section 5.3.3). Such patterns, like the patterns embodying the grammatical rules of our mother tongue, affect us mainly at a subliminal level. We are usually not aware of the subtle modulations of signals and meaningful actions from which we draw inferences about our relationships to others; we are only aware of the *outcomes* of such inferences – in particular, the emotions they evoke in us. As Bateson (2000, p. 140) put it, “feelings and emotions are the outward signs of precise and complex algorithms ... [and] these matters, the relationship between self and others, and the relationship between self and environment, are, in fact, the subject matter of what are called ‘feelings’ – love, hate, fear, confidence, anxiety, hostility, etc.”

d) *Patterns of relationships*

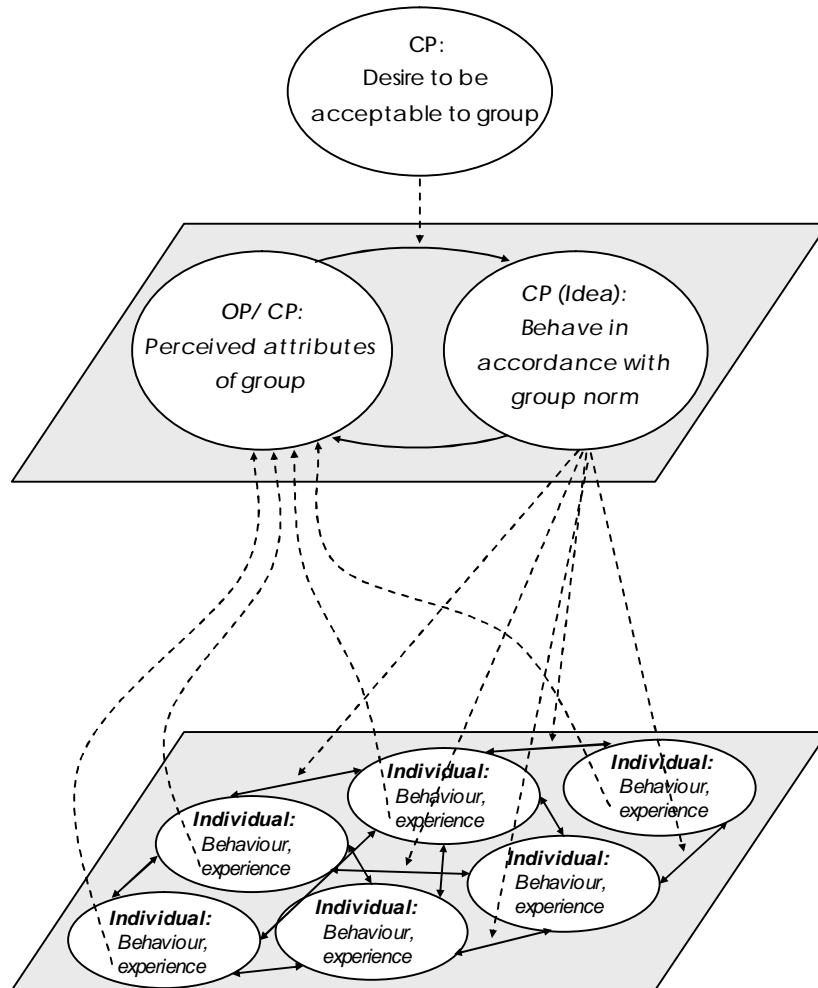
If the first level described above involved individual actions, the second level patterns of actions (or sequences of interaction) and the third level patterns of sequences of interaction (or interpersonal relationships), it follows that the fourth level must involve *patterns of relationships*. Such patterns might manifest themselves in two ways: over *time* (as changes



in relationships) or across space (as differences and regularities in relationships between group members). Such patterns are the currency of *group dynamics* – group polarisation, groupthink, group identity, conformity, inter-group conflict and the like (see Section 5.4).

The distinction between order parameters and control parameters is especially illuminating at this level, as it provides a rigorous means of approaching one of the central problems of social psychology: the problem of how “to bridge the so-called ‘micro-macro divide,’ explaining how individual action is driven by social forces, which, in turn, derive from individual behaviour” (Latané & Nowak, 1994, p. 246). A “social force” may be regarded as an *order parameter* – it is an abstract pattern that emerges from the behaviour and interaction of large numbers of individuals. However, because human beings are not just the *subjects* of abstraction, but are able to *form abstractions for themselves*, such a pattern may become lodged in the (conscious or unconscious) idea structures of the very individuals whose behaviour it describes. From this vantage point, it may become active as a *control parameter*, influencing the behaviour and experience of those individuals. There are innumerable ways in which the characteristics of a social system might impinge upon the minds of its members. These include “the very complex phenomena of personal example, tone of voice, hostility, love, etc.” Furthermore, the “events stream is mediated ... through language, art, technology, and other cultural media which are structured at every point by tramlines of apperceptive habit” (Bateson, 2000, p. 170).

An example of social order parameters that function as control parameters is provided by the phenomenon of *group identity*. As was discussed in Section 5.4.3, every individual forms certain impressions or mental models of the group(s) to which he or she belongs. Under certain circumstances, the salience of these perceived group attributes may increase, prompting the individual to act in ways he or she considers consistent with the behaviour of a prototypical group member. As the figure below illustrates, the place of group identity within a social system is thus analogous to the place of the variable “temperature” in a system regulated by a thermostat: it is both an *average value*, reflecting the attributes of large numbers of individual entities, and a link in a causal chain that prevents the individual entities from deviating too far from this average.

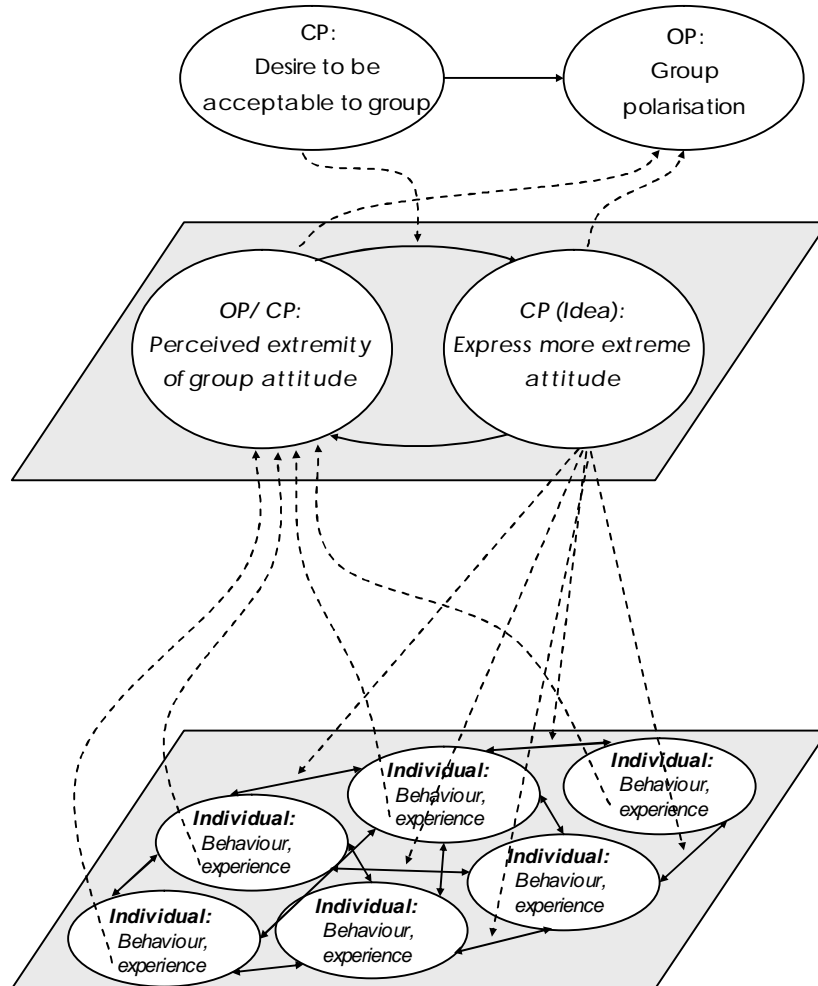


**Figure 7.17 Group identity as order-and-control parameter**

Not all patterns at the group level can be regarded as control parameters, however; some arise and remain “behind the backs” of group members. Consider, for example, the process of *group polarisation*. As was discussed in Section 5.4.2a), there are a number of theories to explain why groups generally display more extreme attitudes than those voiced by their members when questioned in isolation. One of these theories states that, in their zeal to be accepted by the rest of the group, individual group members may express attitudes that are *more extreme* than what they perceive to be the average group opinion. This sets up a self-reinforcing cycle, or *positive feedback loop*, in that each extreme view expressed by a group member induces a slight shift in the “average opinion” as perceived by the rest. They then feel compelled to voice opinions that are still more extreme than this new average... and so on.

Group polarisation therefore provides an example of an *order parameter* at the group level, since it reflects a consistent trend in the average attitudes held by group members. However, it may be argued that this order parameter, *by definition*, does not enter into the idea structures of group members. If it did, they would most likely not let themselves be influenced by it, but would employ measures to correct its runaway effects. Hence, as the figure below shows, this order parameter does *not* assume the role of control parameter.

The behaviour of a group under the influence of group polarisation is analogous to that of a heater-thermostat system in which a malfunction has welded the temperature sensor to the dial controlling the thermostat setting. Such a malfunction would destabilise the system, as a change in temperature would also change the thermostat setting.



**Figure 7.18 Group polarisation as order parameter at the group level**

### 7.2.2 Incorporating psychological concepts and theories into the model

In the previous section, a model of human behaviour in group settings was constructed “from the ground up,” beginning with individual behaviour (the lowest level of description). To this was added the level of interactional sequences, interpersonal relationships and, finally, group dynamics. In the definition of some of these levels, reference was made to established theories and concepts in psychology. Sequences of interaction, for instance, were exemplified by symmetrical schismogenesis, while the distinction between order and control parameters at the level of group dynamics was illustrated by contrasting group polarisation with group identity. In this section, the model will be given “width” by incorporating additional elements from the set of psychological concepts presented in Chapter 5. The first two sub-sections below focus on *individual behaviour* and the factors

that might influence it. This is followed by more extensive discussions of two aspects of *interpersonal relationships*, while the last two sub-sections are devoted to aspects of *group dynamics*.

a) *Reactive and proactive behaviour*

In the foregoing discussion of individual behaviour, it was argued that *ideas* fulfil the role of control parameters in terms of guiding people's behaviour. This argument may be refined by drawing a distinction between:

- a) Actions that are most adequately described as *responses* to the actions of others; and
- b) Actions that are of a more *proactive* nature.

*Reactive* behaviour may be defined as behaviour that is guided by a person's idea or interpretation of the *sequence of interaction* that went before it. For example, if I ask you a question and you respond by looking the other way, I might interpret your response as an act of rejection. I might then respond with hostility. *Proactive* behaviour, on the other hand, is guided by ideas embodying *preferences* rather than by antecedents. For example, if I visit a shop with the aim of buying bread, I would most likely await my turn at the counter until the shopkeeper asks me, "What would you like?" – to which I would reply, "Bread, please." Thus, the manner in which I structure the sequence of my interaction with the shopkeeper will be shaped more by a future goal rather than events in the immediate past.

As was pointed out in Section 5.2.5b), preferences are based on *beliefs*, and the relationship between beliefs and preferences is modulated by *values*. For example, my preference for bread may be based on a belief (founded on previous experience) that bread has a pleasant taste, combined with a value system that leads me to seek pleasurable experiences. In reactive behaviour, such considerations of beliefs and values play a less important part. If I am under stress, I may repay rejection with hostility even though it runs counter to my value system, and despite the fact that I know it will not yield any positive outcomes. In terms of the framework of Model A, reactive behaviour may be regarded as behaviour dominated by the *economics of flexibility* – in other words, it is behaviour shaped by *habit* rather than by careful consideration of its consequences.

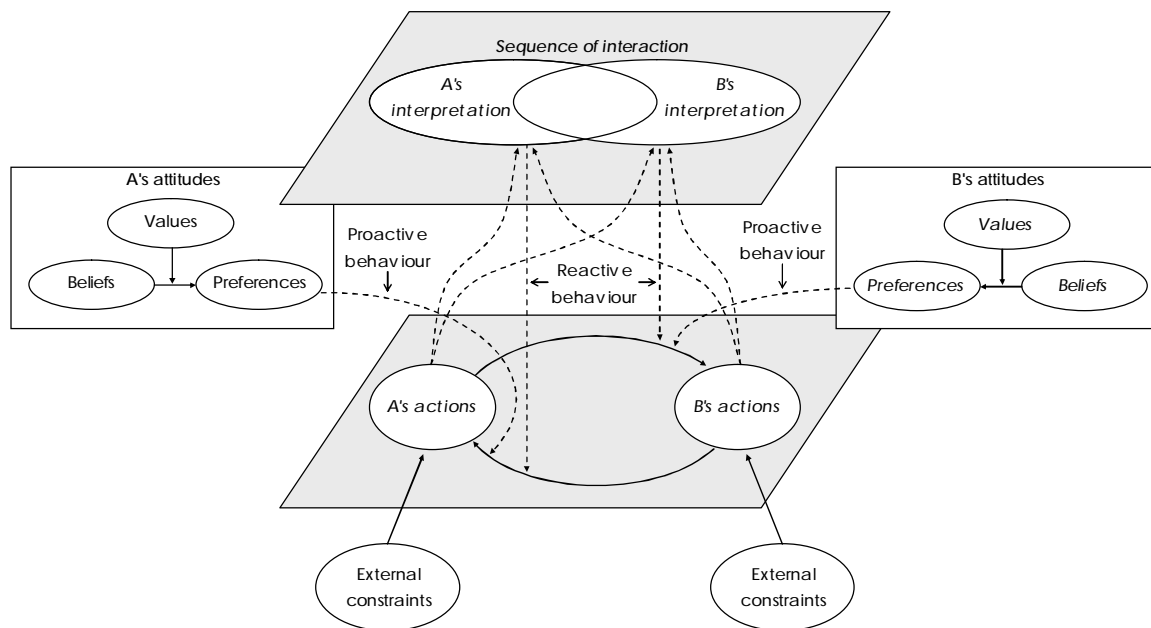
b) *External constraints on behaviour*

In addition to preferences and reactive habits, other factors that influence behaviour include *external constraints*. For example, I might be prevented from acting out my desire to buy bread if I do not have any money. As the *theory of planned behaviour* points out (see Section 5.2.7a), such external constraints include societal *norms* and the degree of *control* that one has over one's own behaviour. The effect of such constraints on behaviour is, of course, again mediated by a person's beliefs – in particular, control beliefs and normative beliefs. For instance, a social norm will not affect my behaviour if I am not aware of its existence.

If it is possible to draw a conceptual distinction between actions that are shaped primarily by *external* constraints and actions that are guided by *internal* factors (such as reactive habits or preferences), it follows that people might draw similar distinctions when interpreting the actions of others. One of the central tenets of *attribution theory* is that people classify one another's actions in precisely this manner. An *internal* attribution implies that a person's

behaviour is attributed to his or her disposition, traits or feelings, while an *external* attribution implies that the credit (or blame) is given to situational demands or constraints. As was pointed out in Section 5.3.2, attribution theory claims that such attributions are formed on the basis of *consensus*, *distinctiveness* and *consistency* – all of which refer to *patterns* of actions that extend over time or space. This claim is consistent with the point made above that perceived sequences of interaction (or patterns of action) provide a “framework” within which individual actions are interpreted.

The figure below depicts the relative influence of preferences, sequences of interaction and external constraints on behaviour. For the sake of simplicity, it only shows the interaction between two people – “A” and “B.” As the figure indicates, each individual’s actions are influenced by his or her *preferences* as well as by the behaviour of the *other person*. If the former predominate in shaping the action, it best described as *proactive*. If the latter predominate, however, the action would be of a more *reactive* nature. Furthermore, each individual forms *impressions* or *interpretations* of the sequences of interaction occurring between them, and does so by abstracting patterns from the stream of experience. The overlapping circles illustrate the fact that, because both parties share the same stream of experience (at least as far as their interaction with each other is concerned), their impressions concerning this interaction will have many features in common. However, each individual may also form impressions that are not shared by the other person. For instance, A may be aware of nuances in her interaction with B that have escaped B’s notice altogether.



**Figure 7.19 Reactive behaviour, proactive behaviour and the effects of external constraints**

c) *Communication about relationship*

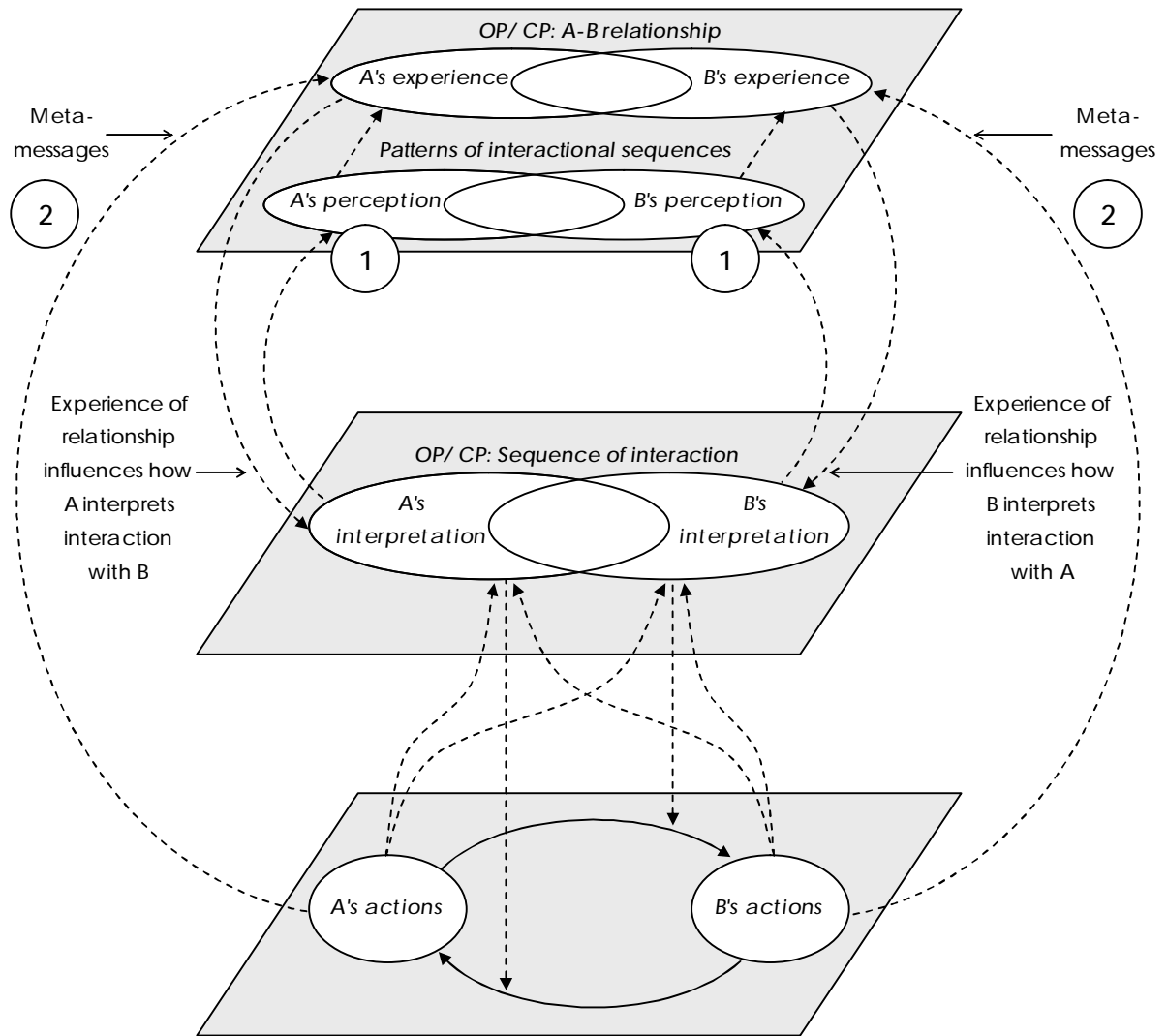
It was suggested earlier in this section that people are finely attuned to patterns in interactional sequences that convey information about *interpersonal relationships*. The pragmatic importance of such information derives from the fact that it fulfils a *meta-communicative function*. Because the relationship between you and me shapes the motives behind our dealings with each other, my perception of this relationship provides me with a “frame” within which I can interpret the meaning of your actions (Spencer-Oatey, 1996). The absence of such a frame, on the other hand, introduces ambiguity into many aspects of interaction. For instance, if I do not know whether our relationship is one of mutual positive regard, I will be uncertain as to whether you have my best interests at heart. Hence, it will be difficult for me to decide whether to trust the information you impart to me.

The relationship between *sequences of interaction* and *interpersonal relationships* – like the relationship between *individual actions* and perceived *sequences of interaction* – is therefore a reciprocal one. On the one hand, we draw (conscious or unconscious) conclusions about the nature of relationships by abstracting patterns from interactional sequences. On the other hand, we use those conclusions as a framework for interpreting new sequences of interaction.

Inferring the nature of interpersonal relationships from interactional sequences is a time-consuming process, as relationship-informative patterns often only emerge during the course of repeated interaction. These perceived patterns might also easily lead to *incorrect conclusions*. For example, I might interpret someone’s behaviour as a comment on our relationship, when in fact it was shaped by external constraints that have nothing to do with me (see Section 5.3.2). In order to circumvent such difficulties, human beings frequently make use of more direct ways of communicating about relationships. As was discussed in Section 5.3.1, certain individual actions – most especially body language and paralinguistic signals – are endowed with meta-communicative meaning in that they reveal the speaker’s feelings toward the person he or she is addressing. The reliability of such messages derives from the fact that they occur, to a large extent, below the threshold of consciousness. As Bateson (2000, p. 137) points out: “Insofar as a message is conscious and voluntary, it could be deceitful. ... I can tell you ‘I love you’ when in fact I do not. But discourse about relationship is commonly accompanied by a mass of semivoluntary kinesic and autonomic signals which provide a more trustworthy comment on the verbal message.”

Thus, people may obtain information about interpersonal relationships by observing what others *do*, or by being sensitive to what they say (with their eyes and gestures as much as with their words). In the figure below, these two alternative sources of information about interpersonal relationships are marked “1” and “2.” As the figure shows, the fact that people may perceive different patterns in their interactional sequences raises the possibility that they might form different impressions regarding their relationships. For instance, I might think that you are my friend when in fact you regard me as a means to further your ambitions. As everyday experience testifies, such misunderstandings – if uncorrected through appropriate meta-communication – can be disconcerting and painful when they eventually come to light.





**Figure 7.20 Sources and functions of information about interpersonal relationships**

**d) Types of relationships**

The preceding discussion points to the conclusion that an interpersonal relationship may be regarded as both an *order parameter* and a *control parameter* in the dynamic system of human interaction. In this sense, its role is analogous to that of average temperature in a heater-thermostat system. Just as average temperature represents a pattern that emerges from moment-by-moment fluctuations in temperature, so an interpersonal relationship represents a pattern that emerges from successive sequences of interaction between two people. It was mentioned earlier that a human occupant of a room regulated by a thermostat might respond to the pattern in temperature fluctuations by adjusting the setting of the thermostat. This, in turn, will modify the way in which the heater responds to changes in temperature – thereby indirectly modifying the overall pattern of temperature fluctuations. In the same way, I might respond to perceived patterns in my interaction with you by modifying my idea of our relationship. This, in turn, will modify the way in which I respond to your actions – thereby changing the overall character of our interaction.

If one asks about the possible values that this order parameter/ control parameter might assume, however, the analogy between the two types of systems begins to break down. Whereas the set of alternative averages around which temperature might fluctuate can be arranged on a simple linear scale (from “hot” to “cold”), it is unlikely that the full range of possible human relationships is amenable to a similar one-dimensional characterisation. In fact, the question might be posed as to whether there is any limit to the number of variations that can arise in the ways people relate to one another.

Nevertheless, it is possible to devise categories for distinguishing among some types of relationships. One such system of categorisation was discussed in Section 5.3.3a). Following Bateson (2000), it was postulated that there are two basic varieties of relationship: *symmetrical* relationships (in which the parties in the relationship engage in similar behaviour) and *complementary* relationships (in which the behaviour of one party is in some sense the opposite of the behaviour displayed by the other). Examples of symmetrical relationships include friendship, rivalry and mutual emulation. Examples of complementary relationships, on the other hand, include dominance-submission, nurturance-dependence and exhibitionism-spectatorship.

Whether or not the relationship between two people will take on a symmetrical or a complementary shape depends on the disposition and habits of both parties; it is an emergent property informed by the *combination* of their respective attributes. In this sense, it is like the trajectory followed by the temperature of a room that is regulated by a thermostat. The shape of this trajectory over time (for instance, whether it displays a steady gradient or oscillates around a mean, whether these oscillations are large or small, or whether they gradually increase in amplitude) does not depend only on the thermostat setting, the way it is connected to the thermostat or the distance between the temperature sensor and the heater; it depends on the specific *combination* of all these parameters.

Bateson argued that a relationship often takes on a “life of its own.” Its effect on the behaviour and experience of individuals is so profound that, once the relationship has taken a particular shape, it may prove extraordinarily resilient; it may remain relatively unchanged over long periods of time despite significant changes in external circumstances. Hence, Bateson’s argument amounts to an assertion that relationship parameters *lose much of their flexibility* once they have assumed a particular value. Bateson offered a number of reasons why interpersonal relationships are often resistant to change. First, the components of a symmetrical or complementary interactional sequence tend to be *mutually reinforcing*: a friendly gesture often elicits a friendly response, which may inspire still more friendliness. Similarly, if one perceives that one’s attempts at dominance are successful in that they elicit submissive behaviour from others, one might gain confidence to be still more dominant, and so on. Second, a particular style of interacting with another person tends to become *habitual* over time – which is to say, it is gradually delegated to deeper and less flexible parts of the mind. Third, the fact that a relationship acts as a “lens” through which behaviour is interpreted means that perceptions of relationships can become *self-validating*. Thus, even if one party attempts to change the relationship by adopting a different style of interaction, the other party might wrongly perceive the new behaviour as simply being a continuation of the old pattern.

Bateson also identified a possible way in which *misunderstandings* might arise with regard to the nature of a relationship – especially in cross-cultural settings. He pointed out that different complementary motifs (dominance-submission, nurturance-dependence,

exhibitionism-spectatorship, etc.) often go hand in hand, and that the manner in which such motifs are most frequently combined might differ from one culture to the next. For example, one culture might associate exhibitionism with dominance, while another might associate it with submission. Thus, expansive or boastful behaviour might be interpreted as an aggressive show of dominance, when it was in fact intended as a sign of respect or a bid for approval. (In the South African context, for instance, some cultures differ in terms of the accustomed volume at which conversations are conducted. Thus, the act of conversing at a particular volume may convey a message of arrogance or lack of consideration in one culture, while it has the opposite meaning in another culture.)

e) *Sharedness and centrality*

In Section 7.2.1, the discussion on patterns of relationships focused on *group identity* and *group polarisation*. These two phenomena were employed as an illustration of the difference between control parameters and order parameters at group level. This discussion may be fleshed out by taking note of factors that influence *group decision-making*. As was pointed out in Section 5.4.1a), two variables that play an important role in this regard are *social sharedness* and the *centrality* of individuals within a group.

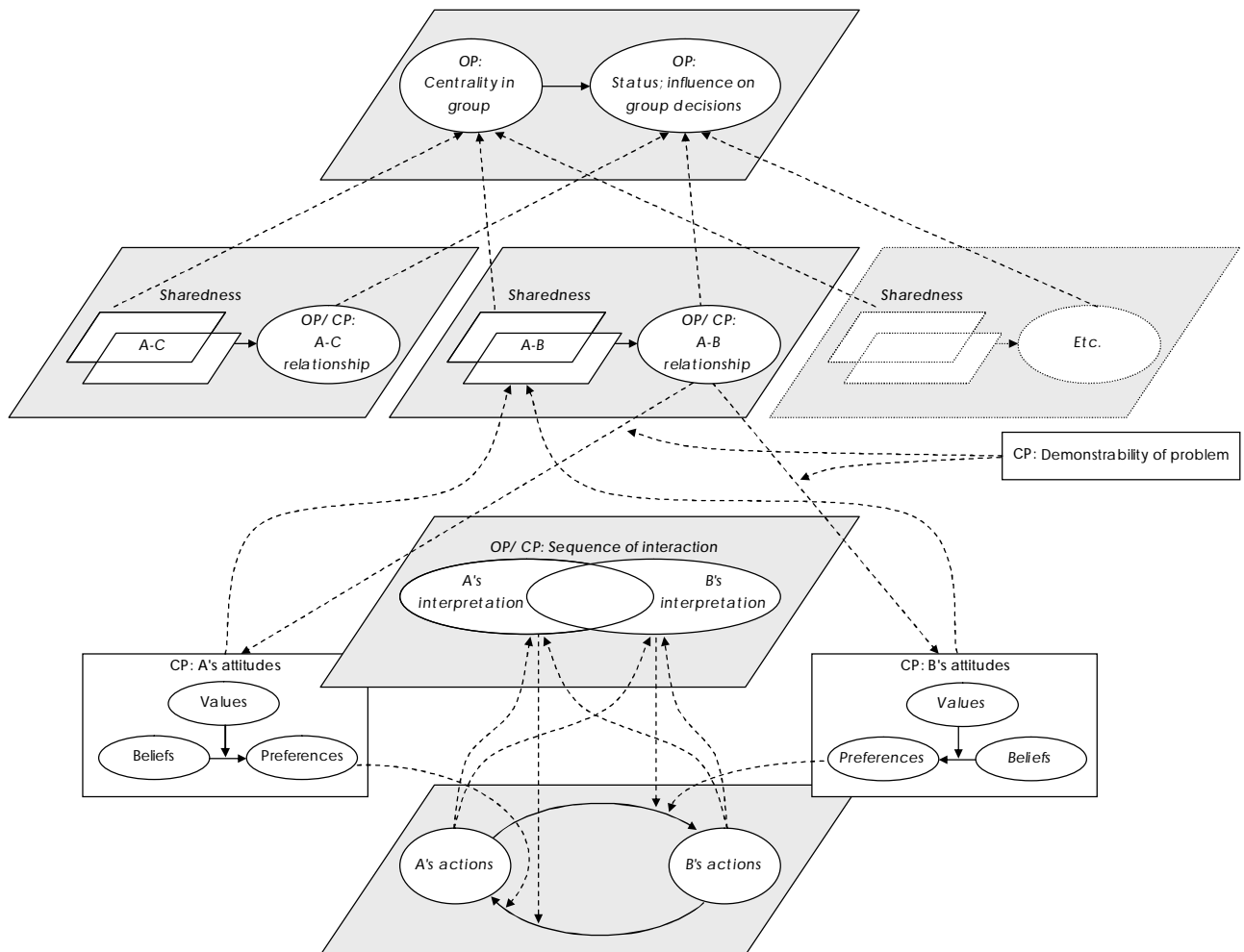
*Sharedness* may be defined as the degree of similarity or overlap between two individuals in terms of their beliefs, values, preferences and the like. As was mentioned in Chapter 5 and again in Section 7.1.3b), the degree to which a piece of information is shared among group members influences the probability that it will be mentioned during discussions and thus incorporated into decisions. *Sharedness* also has a significant influence on *relationships* among group members: if I perceive that you and I have much in common, I would be more likely to view you in a positive light than would have been the case if I had perceived us as being very different. A positive relationship, in turn, increases your ability to influence my attitudes and beliefs: if I like you, I will tend to accept what you tell me as trustworthy. If our relationship is sufficiently intense or continues over a long enough period of time, it may even effect changes in my fundamental values or increase the salience of some values (such as altruism) over that of others (Jentoft et al., 1998).

*Centrality*, on the other hand, may be regarded as an order parameter describing *patterns of sharedness*. It is a measure of the degree of overlap that a person's attitudes display with the attitudes of all other members of a group. Thus, the most central person in a group is the one who has the *most in common with the greatest number of other group members*. As was pointed out in Section 5.4.1a), a person's centrality within a group is often proportional to his or her *influence on group decisions*. This trend may be explained in terms of the aforementioned influence of interpersonal relationships on individual attitudes. The most central person in the group tends to have positive relationships with the largest number of other group members. As Kameda et al. (1997) have pointed out, such a person may acquire *pivotal power* in the group, as he or she will have the greatest ability to influence the attitudes of others. Such influence, in turn, gives the person the ability to rally support for his or her cause.

As was pointed out in Section 5.4.1a), the relationship between centrality and influence is not always equally strong: it is modulated by the type of decisions the group has to take, or the *type of problem* it faces. For problems that are highly *demonstrable* (in other words, for which it is possible to identify an optimal decision on the basis of logical proof and/or incontrovertible evidence), the greatest influence often does not lie with the most central

group members. If “peripheral” members possess the necessary knowledge and reasoning ability to demonstrate the correct solution, their input may outweigh the opinions of the central faction.

The relationships among attitudes, sharedness, relationships, centrality and influence are summarised in the figure below. As this figure shows, sharedness is an order parameter that emerges at the *relationship level* and reflects the degree of similarity between the attitudes of two individuals. The degree of sharedness between individuals influences the nature of their relationship. This, in turn, influences their ability to influence each other’s attitudes – although the strength of this influence is mediated by the demonstrability of the problem at hand. Centrality and group influence, on the other hand, are order parameters that emerge at the *group level*. The former reflects the sum or average of each individual’s sharedness with other group members, while the latter summarises the status that an individual acquires within the group by virtue of his or her network of relationships.



**Figure 7.21 Attitudes, sharedness, relationships, centrality, demonstrability and influence over group decisions**

f) *Institutional rules and parameters*

It was pointed out above that, although the most central persons in a group often have the greatest influence on group decisions, this is not necessarily true for highly demonstrable problems. Another variable that may modulate the relationship between centrality and influence is the *distribution of formal authority* within a group. In a corporate setting, for instance, the executive director may have little in common with staff members in terms of attitudes. Hence, he or she may not be the most central person in the group. Nevertheless, it is the director, not the “informal” leaders with greater centrality, who ultimately has the power to take decisions.

In order to incorporate this contingency into the model, it is necessary to add yet another variable at the group level: one that denotes the *institutional rules and parameters* within which the group operates. This variable denotes the type of procedure that is used to make decisions (for example, whether decisions are taken by a single leader after considering the inputs of all group members, whether decisions are taken by majority vote, whether no decision can be taken unless all group members achieve consensus, etc.). In other words, it is a control parameter that determines how the aggregate of individual actions or choices is eventually translated into a collective action or decision. It determines the *right* of individuals to contribute to the collective will, whereas the group-level order parameters (centrality, group identity and the like) determine whether, how and to what extent group members will actually *make use* of this right.

### 7.2.3 Applying the model to public participation

The figure below depicts the most important elements of the model developed in the preceding paragraphs. The figure shows, first of all, that people’s actions are shaped by three types of factors:

- ✓ *External constraints*, which include factors that influence people’s control over their own actions;
- ✓ *Preferences*, which, in turn, are shaped by beliefs and values; and
- ✓ *The actions of others*, which are interpreted in the context of sequences of interaction.

Second, it emphasises the fact that people inevitably form certain impressions regarding their *relationships* with others. These impressions are formed on the basis of perceived patterns of interactional sequences, and may be influenced by inferred similarities with regard to beliefs and values. People also exchange non-verbal meta-messages about their relationships – an activity that often occurs at a subliminal level.

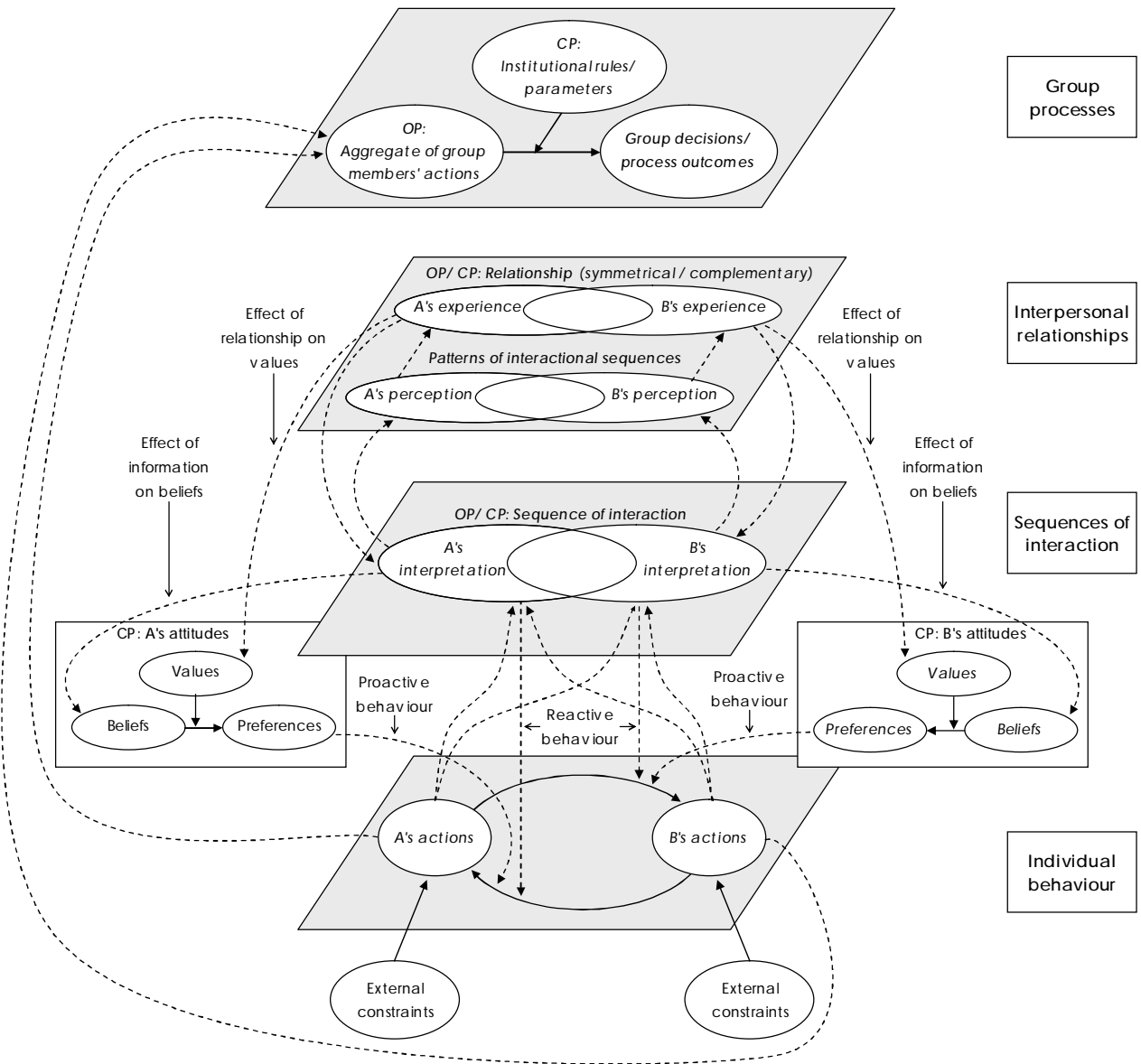
Third, the model points out that interpersonal relationships influence people’s behaviour in a number of ways:

- ✓ Relationships inform the *motives* underlying people’s dealings with one another. (For example, if I perceive the relationship between us as being one of dominance-submission, I will be motivated to treat you in a different way than I would treat someone as regard as my equal.)

- ✓ Relationships influence the manner in which people *interpret* one another's actions. (For example, if I regard you as my friend, I would be likely to put trust in information you convey to me.)
- ✓ Relationships may exert an indirect influence on behaviour by shaping people's *beliefs*, and possibly even their *values*. (For instance, if I become close friends with someone who believes the environment should be conserved for its own sake, I might eventually acquire a similar "green" value orientation.)
- ✓ Relationships may be *self-reinforcing*, and might therefore cause certain patterns of interaction to persist over long periods of time. (For example, if two people have come to define their relationship as complementary, it may be very difficult for them to introduce symmetrical elements into their interaction.)

Finally, the model draws a distinction between the "explicit" and "implicit" rules that shape the behaviour of people in *group settings*. The explicit rules include the formal procedures (such as voting) by which the preferences and actions of individual group members are aggregated during joint decision-making. The implicit rules, on the other hand, include the informal power that group members wield over one another, as well as the subtle pressures exerted by group polarisation, group identity and the like. These rules are usually unspoken and frequently operate without group members being fully aware of them. Nevertheless (or perhaps because of this fact), they exert significant influence over the manner in which group processes unfold.





**Figure 7.22 Summary of Model B**

The model yields a number of insights into the psychosocial dynamics of public participation. First, it confirms the important role of the *physical setting* and of *time* in shaping public participation processes – a point that was raised several times on the preceding pages. Second, it provides some clarity on why a participation model or procedure that yields adequate results in one context might not be effective in another. Third, it provides an alternative interpretation of the contrasting *motivations* that might underlie participants' actions – in particular, the contrast between self-interest and a "common-good" orientation. Fourth, it emphasises the fact that every action within a public involvement process contains an implicit *meta-communicative element*, and that this element might cause an action to elicit responses that differ widely from the actor's intentions. Fifth, the model highlights the importance of attending to the *relationship dimension* of public participation *from the outset of the process*. Sixth, the model yields a possible typology of the various *strategies* that stakeholders might employ to influence the outcomes of a participation process. Finally, the model identifies a few of the *conceptual errors* that scientists (and participants

themselves) might be prone to when attempting to analyse public participation processes. Each of these insights is discussed at greater length in one of the sections below.

a) *The spatial and temporal dimensions of public participation*

Model A identified one reason why the physical setting and the amount of time available for discourse are important in public participation: these variables may influence the degree of *flexibility* of participants' ideas. In Section 7.1.3b) it was noted that, when the physical setting presents distractions or inhibits communication, or when participants are faced with time pressure, they are more likely to ignore relevant information or to resort to "hardwired" courses of action that are not necessarily appropriate under the circumstances.

Model B confirms the role of the spatial and temporal dimensions by identifying two *additional* ways in which these might shape the course of a public participation process. First, they might present *external constraints* on the behaviour of participants. For example, if a meeting is held at a venue that makes it inaccessible to a large proportion of stakeholders, or if it is held at an inappropriate time (such as during working hours), members of the public who have an interest in the proceedings may be prevented from becoming involved (Krannich et al., 1994).

Second, the physical setting and time schedule play a significant role in determining participants' ability to define their *relationships* to one another. Support for this claim is provided by a review of public participation literature (conducted by O Renn et al., 1995) aimed at identifying factors that promote *trust* among participants. One of the conditions for trust that emerged from this literature review was the opportunity for *face-to-face interaction* among participants. Model B suggests a possible reason *why* face-to-face interaction among participants is important for trust: communication about relationships relies heavily on the exchange of *non-verbal meta-messages*. Hence, if the physical setting does not allow for personal contact among participants (for instance, if all communication takes place via email or post), this medium of communication will be blocked. Hence, it will be all the more difficult for individuals to gauge one another's sincerity.

Another factor identified by Renn et al. as being conducive to trust is the opportunity for participants to meet *on a regular basis* so that they can get to know one another. This point is echoed by a number of authors. Adler and Kranowitz (2005, p. 37), for instance, argue that: "People need to know each other as individuals, not just as energy experts, scientists, community members, or representatives of organizations. [They need to] learn each other's histories. Share a meal together. If people do not know each other, they will not trust each other and will revert to fear-based interactions." The public participation handbook developed by the Southern African Institute for Environmental Assessment (SAIEA, 2005, p. 19) also offers the following advice to public participation practitioners dealing with communities: "Remember you are in all likelihood an outsider in the stakeholder community. Respect the community and its culture. You may be seen as an alien and need to take steps to build the confidence and trust of stakeholders. Spend time with people. Take time for informal conversations. If you can, stay in the community." All of these suggestions indicate that the type of relationships necessary for effective public participation can only be established if *adequate time* is available for interaction.

b) *The “informal” rules of a public participation process*

The preceding paragraphs emphasise the importance of the relationship dimension (in particular, interpersonal trust) for effective public participation. Model B also emphasises that the network of interpersonal relationships among participants forms an important component of the *implicit or informal rules* governing any participation process. Such rules are more difficult to ascertain than the *formal rules* of the process (which are specified by the public participation model, techniques, agenda, etc.). Nevertheless, they are at least as influential in terms of shaping its course and outcomes.

Because the history of interaction among participants may extend beyond the beginning of the participation process itself, the informal rules governing this interaction may even predate the formal rules laid down by a public participation facilitator. Thus, they might determine whether these formal rules are regarded as acceptable. As Seiler (1995, p. 148) put it, “A procedure – even if it is theoretically perfect – which is not accepted by the public, will never be able to create trust in the state and persuade people to accept the decision. Whether people trust in an institution depends on many factors (e.g. traditions, experiences, the historical situation).”

The informal rules of a public participation process may also undergo *change* as the process unfolds. As was mentioned earlier, mechanisms such as group polarisation may bring about subtle shifts in the group norms to which participants feel pressured to conform. In order to reduce the probability that such changes will inhibit the effectiveness of group decision-making, some public participation processes include *training* for participants in group processes (Lynn & Kartez, 1995). Such training is intended to have the effect of turning group-level *order parameters* into *control parameters*: they make group members aware of possible group dynamic effects on their behaviour, and provide them with possible strategies for regulating or counteracting such effects. Some authors (such as Kelly & Van Vlaederen, 1995) also suggest that public participation facilitators should promote *deliberate reflection on group dynamics* during the participation process. The aforementioned authors propose the term “meta-dialogue” to describe such reflection.

c) *Motives as enactments of relationship*

As the preceding paragraphs show, viewing public participation through the “lens” of *communication about relationships* provides insight into the importance of the physical setting and of time, as well as into the reasons why a public participation model that is successful in one setting might not be effective in another. A focus on relationships also yields insight into the contrasting sets of *motives* that people might bring into a public participation process. It was argued in Section 6.3.2 that many of the problems in public participation stem from a tendency of some participants to act in terms of *self-interest* rather than the common good. However, this tendency is not universal: while some people might act in a selfish manner, others in the *same set of circumstances* might adopt a much more altruistic or civic-minded approach.

The process model of public participation (Section 6.3) suggests that such differences might be explained in terms of participants’ *values*, which in turn are shaped by their cultural and social background. However, this cannot be regarded as a complete explanation, as the same participants might sometimes adopt a different orientation if placed in a *different setting*. When discussing the advantages of *planning cells*, for example, Dienel and Renn

(1995, p.126) note that, very often, “citizens occupy the role of advocates of the common good almost from the beginning of the sessions.” It is rather unlikely that this trend is entirely due to the fact that the convenors of planning cells have an uncanny ability to select the “right” participants; it must be at least partly the result of the *type of interactive setting* created by such cells.

Whether a participant adopts a self-interested or cooperative approach to public participation therefore depends on his or her *inherent values* as well as on aspects of the *situation*. The relative contribution of these two sets of factors may be clarified by viewing the interaction between an individual and his or her circumstances as a *relationship*. As was mentioned above, the defining features of any relationship does not depend on the attributes of any one party, nor even on the sum or average of both parties’ characteristics; it is an *emergent property* shaped by the manner in which these characteristics “fit together.”

The distinction between a selfish and a cooperative approach to public participation may be mapped onto Bateson’s (2000) distinction between *complementary* and *symmetrical* relationships. If I become involved in a public participation process with the intention of furthering my own agenda at the expense of others, my interaction with other participants will be characterised by (overt or covert) attempts to dominate or exploit them – which, in turn, will force them to either defend themselves, or to submit or retreat. In other words, I will be enacting one-half of a *complementary relationship* with other role-players in the process.

On the other hand, if I see myself as an advocate of the common good, I will be motivated to regard the interests of others in the same light as by own. I will also tend to treat others as I would wish them to treat me. In other words, I will be making a bid for a *symmetrical* relationship. Whether I choose one approach or the other will depend on my personal disposition (for example, whether my previous experience has primed me to view most relationships in terms of dominance-submission) as well as on the situation in which I find myself (for instance, whether I perceive that I or my family have much to lose if other role-players should take advantage of my goodwill).

Playing both scenarios forward, it becomes evident that the shape of the relationship between myself and other participants will also depend on how they *respond* to my actions. If I attempt to dominate others as a means of furthering my own interests, for instance, they might not necessarily submit to my domination. Instead, they might reject my bid for dominance by attempting to dominate me in return. This could set up a pattern of symmetrical rivalry or escalating conflict. An attempt to define a relationship in symmetrical terms could also be unsuccessful: as mentioned above, others might take advantage of my willingness to cooperate, and I might find myself at the receiving end of a dominance-submission relationship.

#### d) *The meta-communicative subtext of behaviour*

If the manner in which I view my relationships to other participants determines how I intend to act toward them, it stands to reason that those other participants will be sensitive to clues regarding the nature of our relationship. Such clues will help them to decide how they should interpret and respond to my actions – whether they are attempts at dominance that should be resisted, gestures of friendship that should be acknowledged and reciprocated, etc. As was pointed out in Section 7.2.2c), people might obtain information about

relationships from various sources. These include non-verbal signals and patterns of interaction.

The importance of creating a setting that allows for *non-verbal meta-communication* has already been mentioned above. If *sequences of interaction* also fulfil a meta-communicative function, it follows that virtually any action within a public participation process can be construed as part of such meta-communication. It also follows that the relationship messages people read into actions might not correspond to the relationship envisaged by the actor. Such differences in interpretation are especially likely to occur if participants belong to different cultures. Bateson's (2000) notion of *culture-specific combinations of motifs* (see Section 5.4.5c) provides one possible example of how such misunderstandings about messages of relationship might arise. For instance, if two cultures differ in how they combine dominance-submission and exhibitionism-spectatorship motifs, extraverted behaviour might be interpreted as dominance when it was intended as respect, and so on.

Very often, the messages about relationship that people (rightly or wrongly) read into one another's actions weigh heavier on their minds than the "objective" implications of those actions. Three examples of this phenomenon are provided below:

- ✓ *Responding to public fears by providing data.* Adler and Kranowitz (2005, p. 22) point out that, when members of the public voice concerns about the possible negative effects of a proposed action on their well-being, it is "both ineffective and often inappropriate to simply follow with data." Instead, they advise public participation facilitators and project proponents to "[s]how respect by developing a system to both acknowledge and respond promptly to concerns raised by community residents without becoming 'technocratic'." The following extract from a public participation guidebook suggests *why* the mere provision of substantive data (even if it is perfectly sound and credible to the audience) often does nothing to reduce public outrage: "any effort to explain substance first will be experienced by people as just another way of not noticing how they feel" (Consultative Forum on Mining and the Environment, 2002, p. 72).
- ✓ *Sensitivity to a perceived loss of control.* It has been pointed out that people tend to be more supportive of and positively disposed toward decisions if they were involved in the decision-making process. In Section 7.1.3b), it was suggested that this tendency might be explained in terms of *cognitive dissonance* – in particular, the fact that outcomes are sometimes evaluated more positively if attaining them involved the expenditure of time and effort. The converse of this phenomenon is that people often oppose decisions if they feel they were not adequately consulted – even of these decisions are, in fact, in the best interest of all concerned (see Section 6.3.6 above). Another possible way of explaining both these tendencies is by invoking the meta-communicative subtext of participants' actions. If I refuse to involve others in decisions that will affect their lives, I am in effect conveying the unspoken message that I regard myself as being in the superior, dominant position in my relationship with them. If they do not find such a relationship acceptable, they may oppose my actions as a way of conveying this message. By contrast, several authors (e.g., Seiler, 1995, p. 148) have noted that an "important factor in creating trust and confidence seems to be the possibility of some kind of control." Thus, if I willingly share control over decisions, this may convey the message that I wish to



define the relationship as a symmetrical one characterised by mutual positive regard. Others may then respond to this bid for symmetry by making a similar positive gesture.

- ✓ *The selection of participants.* In the discussion of the functional model of public participation (Section 6.2), it was mentioned that, if a public participation process is open to anyone who wishes to attend, representation of the public within the process will often end up being biased toward the more affluent strata of society (since wealthier people tend to have more time and resources to participate). One way of preventing such bias is by selecting participants on a *random* basis. In many cases, however, people respond negatively to a public participation model based on random selection. Oberholzer-Gee and Frey (1995) linked this tendency with the results of an experiment conducted by Frey and Pommerehne (1993), in which a large number of households were presented with two hypothetical scenarios involving the allocation of benefits. In the first scenario, respondents had to decide how to distribute 100 bottles of water to 200 thirsty hikers. In the second, they had to decide how to distribute 100 snow shovels among 200 households the morning after a snowstorm. In each scenario, respondents had to choose between alternative strategies for allocating the commodity. These strategies included (a) a rule of “*first come, first served*” (which is analogous to opening a public participation process to anyone who has the means and desire to attend) and (b) *random allocation* (which is analogous to the random selection of participants). Respondents were asked to state whether they regarded a particular strategy as fair or unfair. The results of the experiment indicated that, for both scenarios, *random selection was generally regarded as unfair*. The first come, first served rule, by contrast, generally received a positive evaluation – which is surprising, since “this decision making system does not take into account the ... ‘needs’ of individuals” (Frey & Pommerehne, 1993, p. 300). In other words, it cannot in objective terms be considered a “fair” method of allocating goods or opportunities. One way of explaining these results is by pointing out that random allocation and the first come, first served rule convey *different messages about relationship*. The former puts the recipients of the goods (or of the opportunity to participate) in a subordinate position; they are required to accept whatever “comes their way” from their benefactor or by way of chance. The first come, first served rule, on the other hand, places the onus on them. Hence, it puts them in a more dominant position.

e) *The tenacity of relationship definition*

The foregoing paragraphs emphasise the ubiquitous nature of communication about relationship and its powerful influence on public participation. It was also pointed out that, once a relationship has become defined in a certain way, it is often very difficult to change (see Section 7.2.2d). These considerations suggest that, in order to maximise the probability that a public participation process will be effective (in terms of fostering a constructive exchange of ideas aimed at developing solutions that serve the greatest good without unfairly disadvantaging anyone), participants and public participation facilitators should attend to its relationship dimension *from the very outset of the process*. They should also retain this focus for the duration of the process.



Failing to give communication about relationship its rightful place can lead to a number of negative consequences for a participation process. A few such consequences are described below:

- ✓ *Self-reinforcing relationships.* It was mentioned earlier that relationships often “feed on themselves”; the escalating nature of the conflict between George and Martha in “*Who’s afraid of Virginia Woolf?*” was used as an illustration. The same phenomenon sometimes arises in public participation. Consider the following example, which pertains to the communication of risk-related information to members of the public: “The most common sources of risk information are people who are professionally inclined to ignore feelings. And how do people respond when their feelings are ignored? They escalate — yell louder, cry harder, listen less — which in turn stiffens the experts, which further provokes the audience. The inevitable result is the classic drama of stereotypes in conflict: the cold scientist or bureaucrat versus the hysterical citizen” (Sandman, 1986, p. 20). The further such a cycle has escalated, the harder it becomes to reverse. Thus, it is better to prevent it (by ensuring, amongst other things, that participants do not convey inappropriate messages about relationship) before it begins.
- ✓ *Self-validating perceptions of relationship.* It was also pointed out that a person’s view of a relationship determines how the actions of the other party will be interpreted. Thus, if a relationship has become entrenched as either a (symmetrical) escalating conflict or a (complementary) case of one-sided control, even relatively innocuous actions may be perceived as acts of aggression or bids for dominance. As Adler and Kranowitz (2005, p. 12) put it, some public participation processes reach a point where “offers are seen as bribes and demands are viewed as extortion.”
- ✓ *Disempowerment as “habitual relationship.”* Another point made earlier was that a particular way of interacting with another party may become “hardwired” as habit, and that this habit may be carried over into other relationships. This process seems to be at work in many poor, disadvantaged communities, where its effects are sometimes referred to as “disempowerment.” As was mentioned in Section 3.5.3, members of such communities often display apathy, disillusionment, suspicion and “learned helplessness” when dealing with more powerful individuals or institutions (Boggs, 2000; Lewis, 1965). Interaction of this kind may be interpreted as a *habit of enacting one end of a complementary relationship* – possibly a relationship structured in terms of nurturance-dependence. Empowering such communities entails encouraging them to cultivate a more *symmetrical* relationship with their world – in other words, to give as well as to receive, and to assume joint responsibility for decisions that will impact on their livelihoods. However, changing people’s mindset in this manner is a slow, painstaking process. Too often, would-be benefactors fall into the trap of trying to accelerate the process by *acting on behalf of the powerless* instead of gradually building their confidence to *act on their own behalf*. In so doing, they simply reinforce the complementary pattern they hoped to change (Chambers, 1997; SAIEA, 2003).

f) *A typology of strategies for influence*

Yet another benefit of Model B is that it lays the groundwork for the development of a typology of the various strategies that participants might use to influence the outcomes of a

public participation process. This typology draws together many of the threads running through the preceding pages, including:

- ✓ The notion that the behaviour of participants is influenced by the *formal* rules of the process, by *external constraints* and by their *relationships* to one another; and
- ✓ The notion that interpersonal relationships might influence a person's behaviour in at least two ways: by determining how the actions of others are *interpreted* (for instance, whether information provided by other role-players is regarded as trustworthy) or by increasing the salience or importance the person attaches to certain personal *values* (such as altruism).

The first step towards the development of the typology involves recognition of the fact that each participant has certain *preferences* regarding the outcomes of the process, and that participants might differ in terms of the *content* and *strength* of their preferences. (For example, if the public participation process forms part of an application for authorisation to construct a nuclear facility, some participants might be vehemently apposed to the plan, while others might be only slightly apprehensive, and still others might half-heartedly or wholeheartedly support it.) In each case, a participant's preference will depend on his or her *values* and *beliefs*. (For instance, opposition to the nuclear facility might be motivated by a concern for the environment coupled with a belief that the facility is likely to inflict harm on the environment.) Borrowing the concept of "phase space," which was introduced in Section 4.5, participants might thus be visualised as occupying an array of positions in "preference space" around the pending outcome of the process, with each of them trying to "pull" this outcome in their direction.

If participants had no opportunities to influence one another, and if the formal rules of the process were such that each of them had an equal say in the decision, victory would fall to the participant who feels most strongly about his or her preference (in other words, who "pulls" the hardest) and has the largest number of like-minded fellow-participants (who are "pulling" in the same direction). In real-life public participation, however, neither of these conditions is likely to apply. First, influence over decisions is never truly equally distributed among participants. (For instance, the formal rules of the process may provide a government authority with the right to ignore recommendations or the power to veto decisions taken by members of the public.) In other words, some parties might have more "pull" than others. Second, participants often have opportunities to *influence one another*. They might exert such influence in two ways:

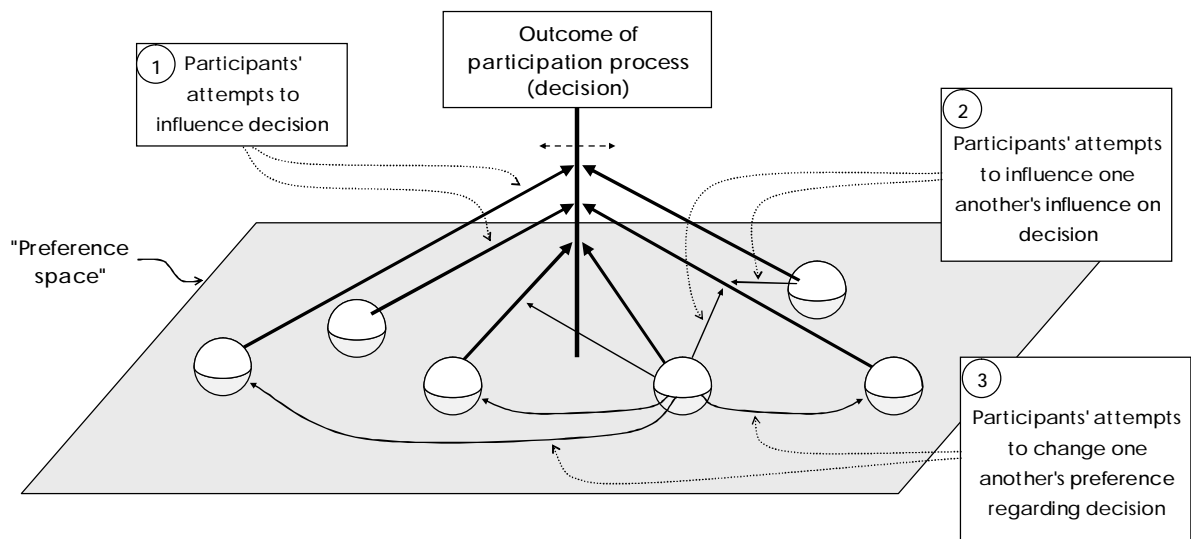
1. They might impose *external constraints* on the behaviour of their opponents so as to reduce their ability to "pull" the decision in their direction. (For instance, they might intimidate other participants until they withdraw from the process – the so-called "SLAPP" tactic referred to in Section 6.3.5b). The converse of this strategy would involve focusing on fellow-participants who *support* their views, and acting so as to *reduce constraints* on their behaviour.
2. They might try to influence other participants' *preferences*. This, in turn, might be accomplished in two ways: by influencing their *beliefs* (for instance, by persuading them or providing them with information aimed at changing their views regarding the probable outcomes of a proposed action) or by changing their *values* (for instance, by appealing to either their moral sense or their instinct for self-preservation). By winning over people whose views formerly opposed one's own,

one in effect increases the number of participants who are pulling the decision in the direction one wants it to go.

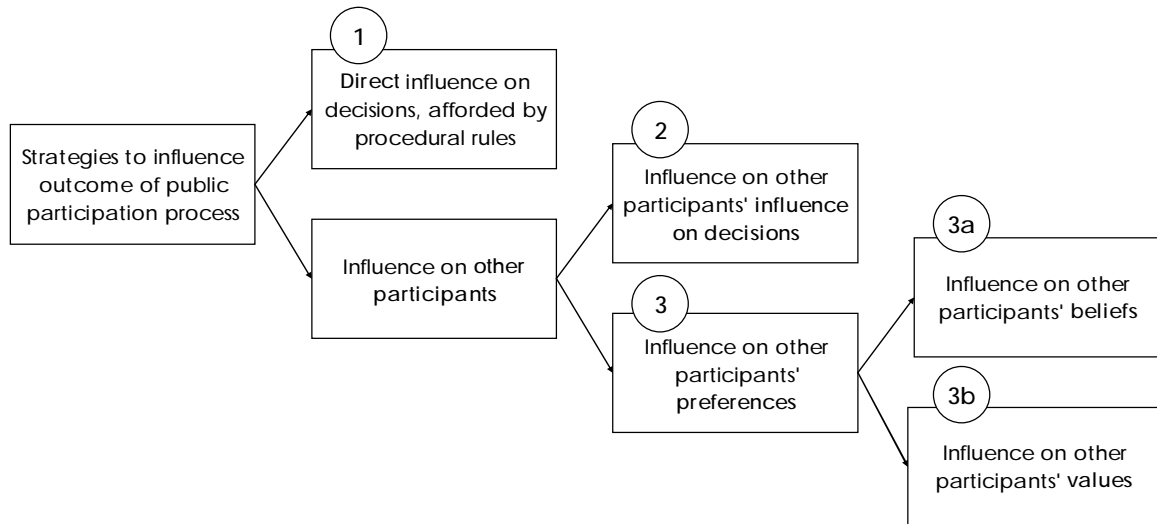
The two figures below summarise these alternative strategies. The first figure captures the image of participants arranged in “preference space” and trying the pull decisions in the direction of their preferences. As the figure shows, they can do so by:

1. Relying on the formal rules that afford them the right to exert *direct influence* over the decision (for instance, by casting a vote);
2. Influencing the ability of *other participants* to exert direct influence over the decision; or
3. Influencing the *preferences* of other participants, thus altering the direction in which they *desire* to pull the decision.

The second figure also depicts these three strategies, but draws a finer distinction by indicating that influence over the preferences of others might involve changing their *beliefs* (3a) or changing their *values* (3b).



**Figure 7.23 Differences among participants as divergent positions in “preference space”**



**Figure 7.24 Alternative strategies for influencing the outcome of a public participation process**

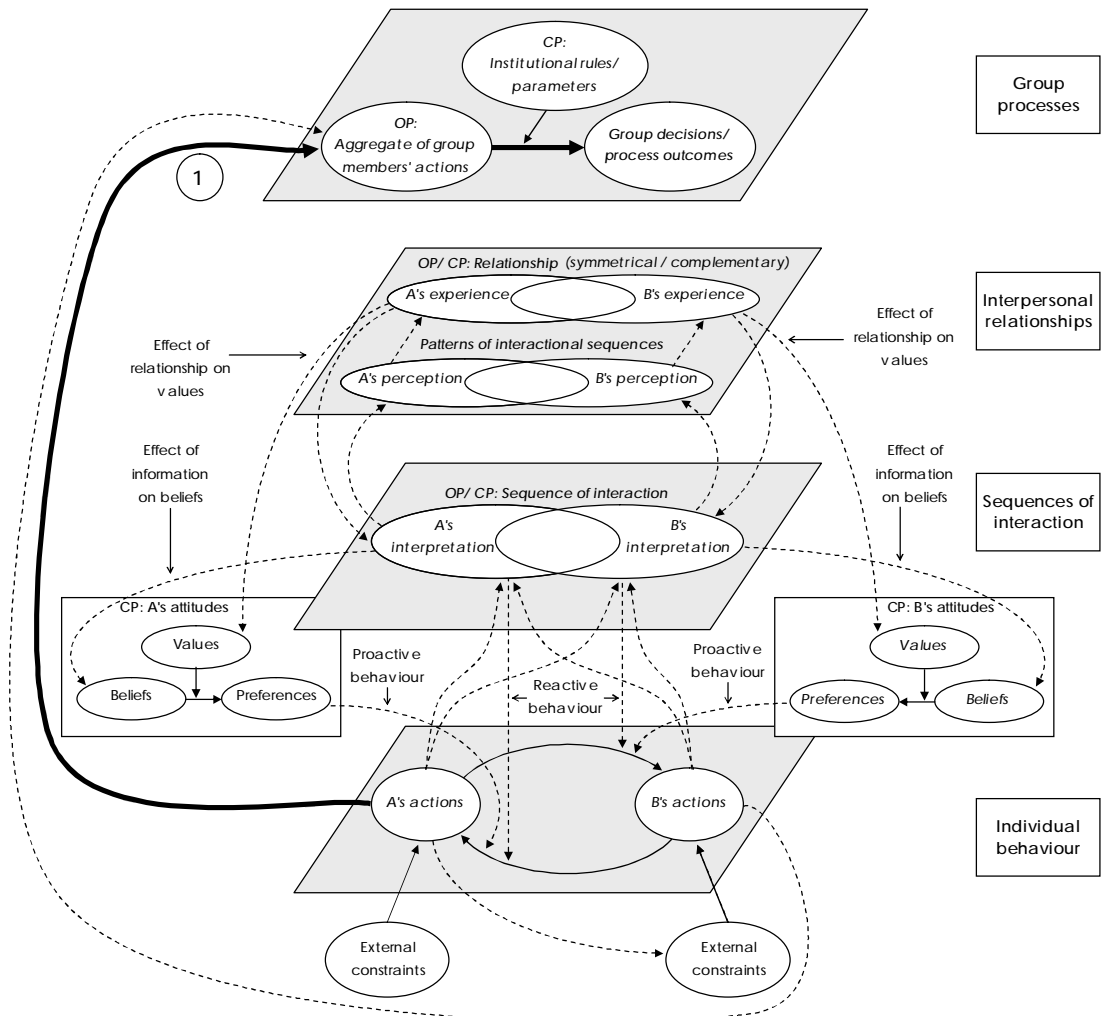
Each of these strategies has its own advantages and disadvantages. The great advantage of Strategy 1 is that it is easy to put into effect. (For example, if the formal rules of the process specify that decisions are to be taken by voting, implementing this strategy involves nothing more than casting one’s ballot.) However, it is limited in terms of the *amount* of influence it allows. (For instance, if the preferences of the majority of participants differ from one’s own, one’s vote may not be sufficient to sway the decision in one’s favour.) Strategy 3b, on the other hand, is very difficult to implement (changing another person’s values requires significant manipulative skill), but it offers the possibility of profound, lasting influence over another (the type of influence afforded by the exercise of *covert power*). The remaining two strategies (2 and 3a) occupy intermediate positions between these two extremes.

Model B is able to explain *why* these strategies differ in terms of their level of difficulty: the *number of variables* mediating their effect on decision outcomes differs in each case. Strategy 1, for instance, offers direct influence on the outcomes of a process via its formal rules. By contrast, Strategy 3b offers a very *indirect* influence over these outcomes; it requires the strategist to engage in sequences of interaction that manipulate the target’s perception of their relationship. This, in turn, provides a lever for manipulating the target’s values, which influence his or her actions, which impact on decisions.

The four figures below illustrate these four alternative strategies and their mediating variables. In each of these figures, a hypothetical participant (“A”) engages in a different strategy to influence the outcomes of a group decision. Except for the first strategy, all involve exerting some kind of influence over Participant B, thereby manipulating B’s influence on the decision. These figures clearly show the differences among the alternative strategies in terms of the number of steps they have to accomplish successfully before they will have the desired effect. These steps are also summarised in the table below.

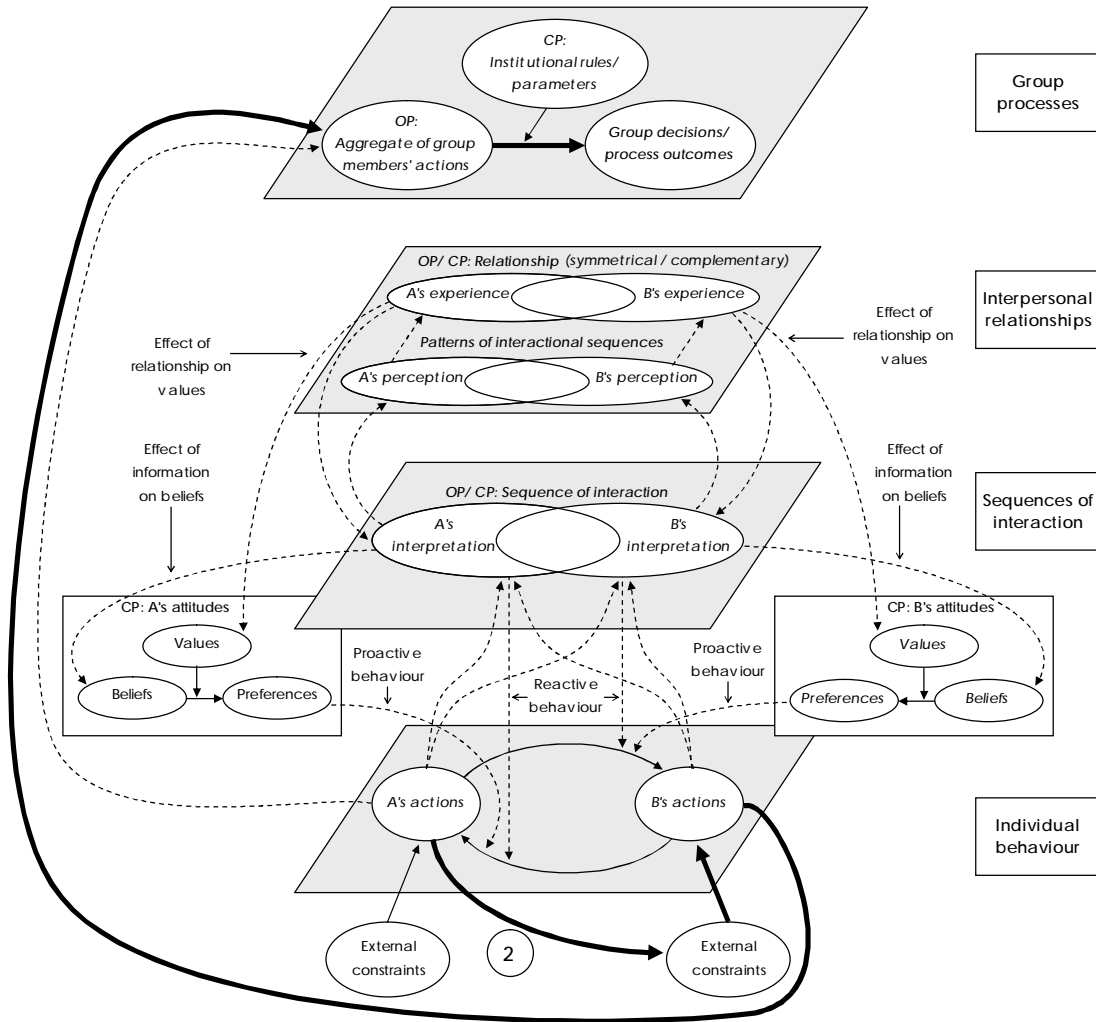
**Table 7.1 Steps comprising alternative strategies for influence**

Strategy	Description	Steps comprising strategy
1	Direct influence on decisions	<ol style="list-style-type: none"> <li>1. A's actions</li> <li>2. Aggregate of group members' actions</li> <li>3. Process outcomes</li> </ol>
2	Influence on other participants' influence on decisions	<ol style="list-style-type: none"> <li>1. A's actions</li> <li>2. External constraints on B's action</li> <li>3. B's actions</li> <li>4. Aggregate of group members' actions</li> <li>5. Process outcomes</li> </ol>
3a	Influence on other participants' beliefs	<ol style="list-style-type: none"> <li>1. A's actions</li> <li>2. B's interpretation of interactional sequence</li> <li>3. B's beliefs</li> <li>4. B's preferences</li> <li>5. B's actions</li> <li>6. Aggregate of group members' actions</li> <li>7. Process outcomes</li> </ol>
3b	Influence on other participants' values	<ol style="list-style-type: none"> <li>1. A's actions</li> <li>2. B's interpretation of interactional sequence</li> <li>3. B's relationship with A</li> <li>4. B's values</li> <li>5. B's preferences</li> <li>6. B's actions</li> <li>7. Aggregate of group members' actions</li> <li>8. Process outcomes</li> </ol>

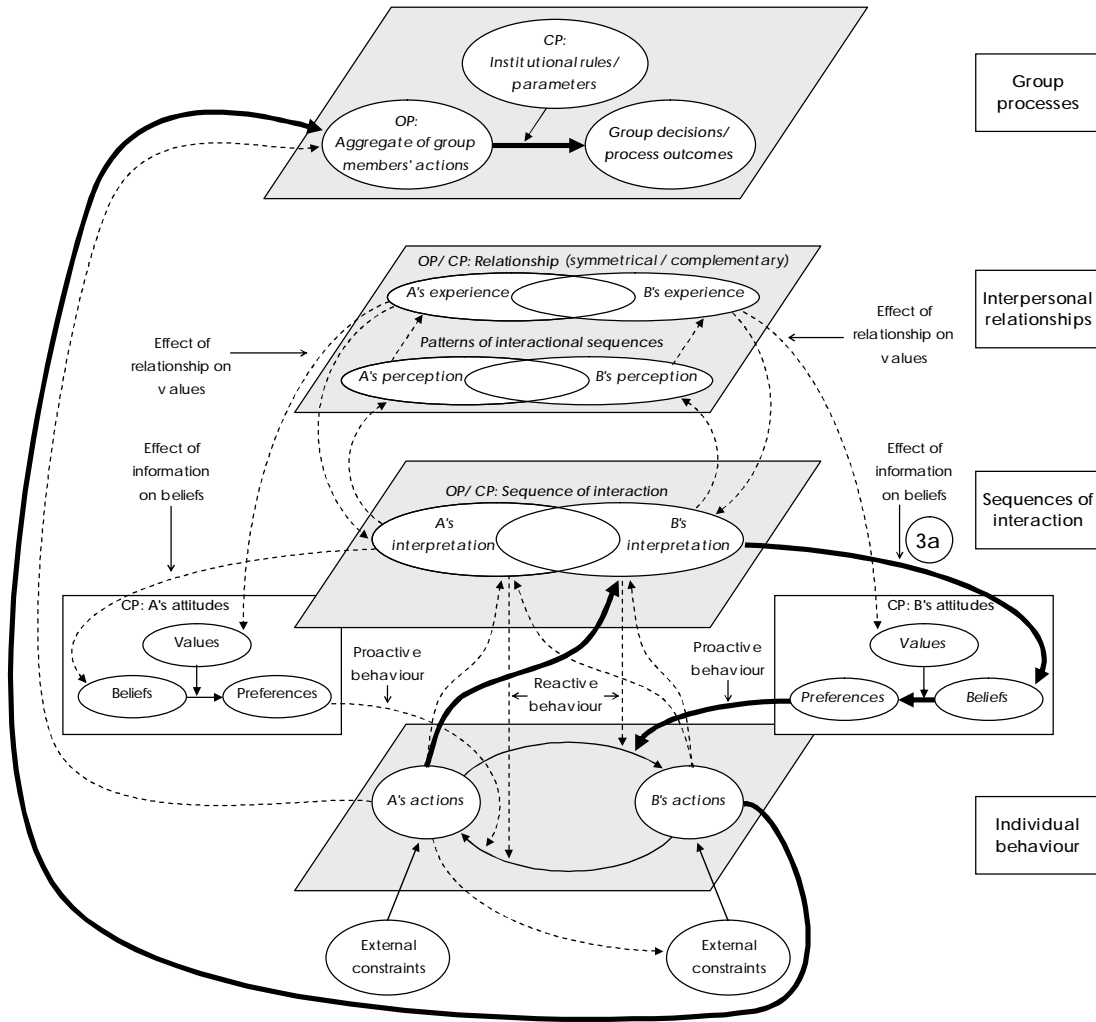


**Figure 7.25 Strategy 1: Direct influence on decisions**

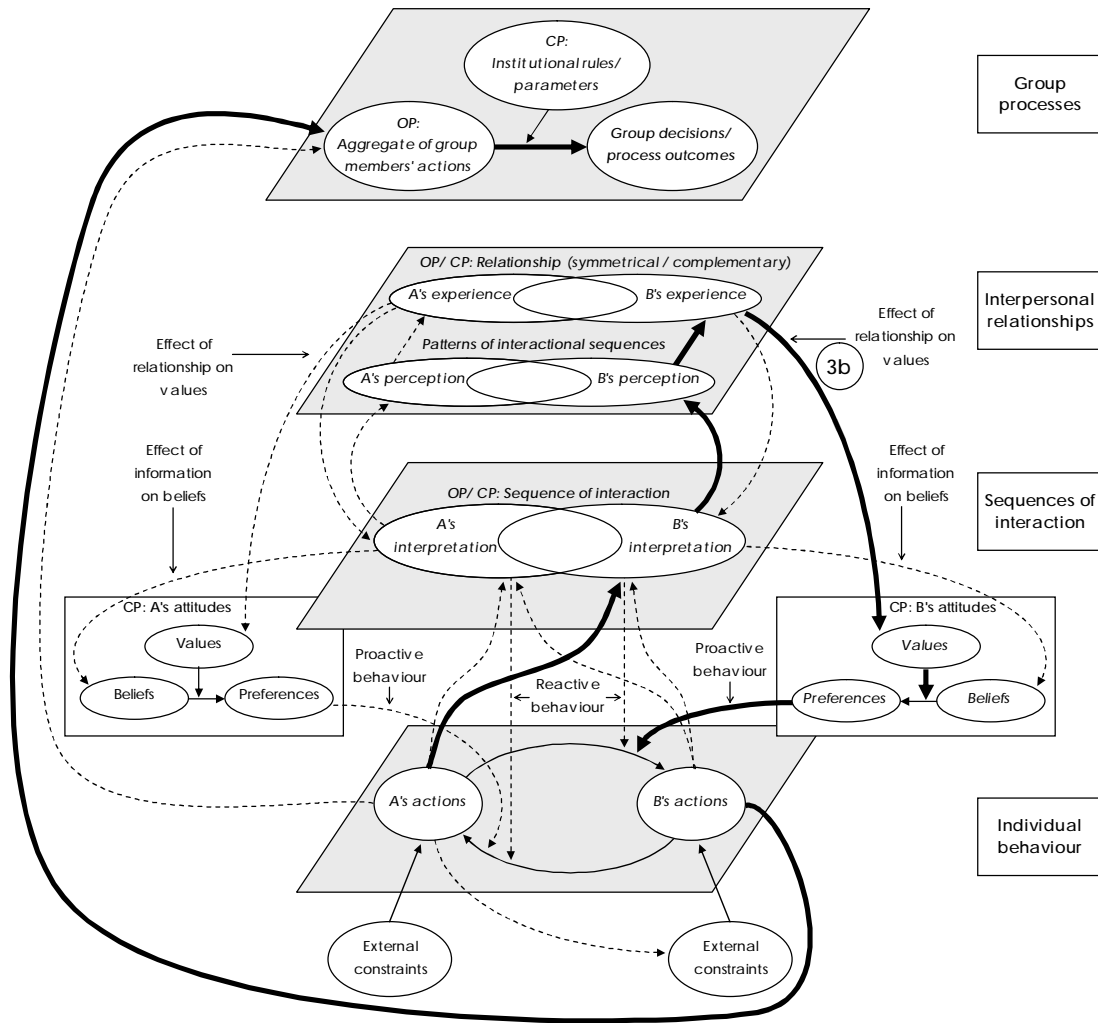




**Figure 7.26 Strategy 2: Influence on other participants' influence on decisions**



**Figure 7.27 Strategy 3a: Influence on other participants' beliefs**



**Figure 7.28 Strategy 3b: Influence on other participants' values**

One feature of strategies of influence that is not captured in the figures above is the fact that, if one participant succeeds in changing the views of another in some way, this change might cause the second participant to influence the behaviour of still other participants. Strategies aimed at modifying the beliefs of values of others might have the deliberate aim of inducing such indirect manipulation. For instance, A might attempt to influence the beliefs of B with the hope that B, in turn, will act so as to influence the beliefs of C, D, E, etc.

Another point not made explicit in the foregoing discussion is that attempts by participants to influence one another are not necessarily detrimental to a public participation process. Some participants might genuinely desire that the process be accessible to all concerned, that it offer opportunities to potentially affected parties to protect their own interests, that its decisions be based on accurate information, etc. – in short, they might desire that the process should correspond to the *criteria for effective public participation* captured in the functional model presented in Section 6.2. Such participants may be visualised as occupying a particular position in “preference space” – namely, a position representing a preference derived from a *value* system that is oriented toward the common good, plus a *belief* that the best way of ensuring that decisions promote the common good is by

involving all concerned, providing opportunities for them to interact on an equal footing, etc. If such well-meaning participants are sufficiently well-resourced and well-informed, if they are centrally placed within the informal network of influence among participants, or if they are supported by an official mandate based on the formal rules of the process, they might be able to exert considerable “pull” on the decision-making process. Thus, they might play a key role in ensuring the success of the process. A review of the functional model of public participation brings to light a number of strategies that participants might engage to influence a process for the better. A number of these are described below.

One of these strategies involves *generating ideas for alternative courses of action*. As was mentioned in Section 6.2.1, the effectiveness of a decision often depends on its *creative dimension* – in other words, on whether an adequate range of alternative decision options were generated and considered before final decisions were taken. Participants might make a valuable contribution toward increasing this range. For instance, communities who may be affected by a proposed action often contain individuals who have in-depth knowledge of local conditions and problems. These individuals could help to identify possible mechanisms by which negative impacts of the proposed action could be mitigated. Contributing towards decision-making in this way does not exercise influence over the behaviour or preferences of other participants; instead, it *extends the boundaries of “preference space”* by broadening the range of options among which those participants might choose. Thus, it involves exercising the mandate provided by the formal rules of the process to influence the *aggregate* of individual actions. Hence, this type of influence is best described as an example of *Strategy 1*.

Participants adopting a strategy such as the one described above may exert a significant positive influence over the course of a public participation process. Because this strategy does not attempt to coerce or manipulate others, but instead increases the probability that they will be able to agree on a mutually acceptable course of action, it may be regarded as a bid for a *constructive symmetrical relationship* with fellow participants. In this respect, it contrasts with another strategy that also involves improving group decisions by way of *Strategy 1*, but does so in a way that contains definite overtones of a *complementary relationship* characterised by dominance-submission. This strategy involves *vetoing ill-informed or inequitable group decisions*. Whether or not a particular stakeholder is able to adopt such a strategy depends on the formal rules imposed by the public participation model. As was pointed out in Section 3.4.4, the right to veto decisions or ignore recommendations formulated during a public participation process is usually reserved for *government authorities*.

In contrast to *Strategy 1*, *Strategy 2* involves influencing other participants by manipulating *external constraints on their behaviour*. Like *Strategy 1*, this strategy can also be used to enhance the quality of a public participation process and increase the degree of constructive symmetry among participants. Applying *Strategy 2* in this manner would involve *neutralising power differences* by removing constraints that prevent the effective involvement of all interested and affected parties. As was mentioned in Section 6.3.7, this constitutes one of the central tasks of a public participation facilitator. One way in which a facilitator might accomplish this task is by organising transport to public meetings for participants who otherwise would not have been able to attend. This would increase the probability that directly affected parties and general public interests are adequately

represented in the process – a condition that was identified in Section 6.2.1b) as one of the prerequisites for effective public participation.

It is also possible to implement this strategy in a *selective manner* – in other words, to remove barriers to participation only for those stakeholders one perceives as supporting one's own cause. For instance, local landowners that are opposed to a proposed development in their neighbourhood might swell their numbers by mobilising other community members that also harbour reservations about the development, but do not have sufficient resources to take an effective stand on their own. On the surface, such selective mobilisation appears to increase the degree of symmetry among participants. However, its overall effect is to increase the dominance of one faction over that of others.

As the foregoing examples indicate, both Strategy 1 and Strategy 2 can be used to enhance the effectiveness of a public participation process. Furthermore, both strategies offer more than one way of achieving this aim, and these alternatives differ in terms of the extent to which they propose constructive symmetrical relationships among participants. The same observations apply to Strategies 3a and 3b. This point may be illustrated by contrasting the following tactics:

- ✓ *Persuasion* – in other words, providing participants with information so as to eliminate misconceptions;
- ✓ *Education* – in other words, broadening participants' knowledge base, thereby enhancing their ability to assimilate new information and judging its reliability for themselves;
- ✓ Eliciting *empathy* from other participants – in other words, increasing their degree of sympathy with one's own cause or concerns; and
- ✓ Promoting a *moral approach* to the participation process – in other words, encouraging other participants to look beyond their own interests and to apply the general good as a criterion for evaluating decisions.

A comparison between the first two tactics reveals that both are aimed at changing the *beliefs* of others. However, whereas education strives to “level the playing field” by reducing the disadvantage suffered by less sophisticated, less informed participants, persuasion contains an element of manipulation (Litva et al., 2002; Yim & Vaganov, 2003). It is therefore not conducive to the cultivation of wholly symmetrical relationships, but may cause the relationship between the persuader and his or her audience to retain a degree of complementarity.

Likewise, eliciting empathy and promoting a moral approach are both aimed at influencing participants' *values*, or reducing the priority attached to values representing narrow self-interest. The difference between these two strategies is similar to the difference between neutralising power differences and selectively mobilising supporters: the former aims to reduce the degree of complementarity among participants, but does so in a strategic manner so as to advance a particular agenda. The latter also proposes a symmetrical relationship, but does so in an impartial manner that does not extend special privilege to any particular set of interests.

The tactics described above may be juxtaposed to others that are *schismogenic* in that they involve *increasing the distance or inequality* among participants, and that generally have a detrimental effect on a public participation process. A number of examples of such

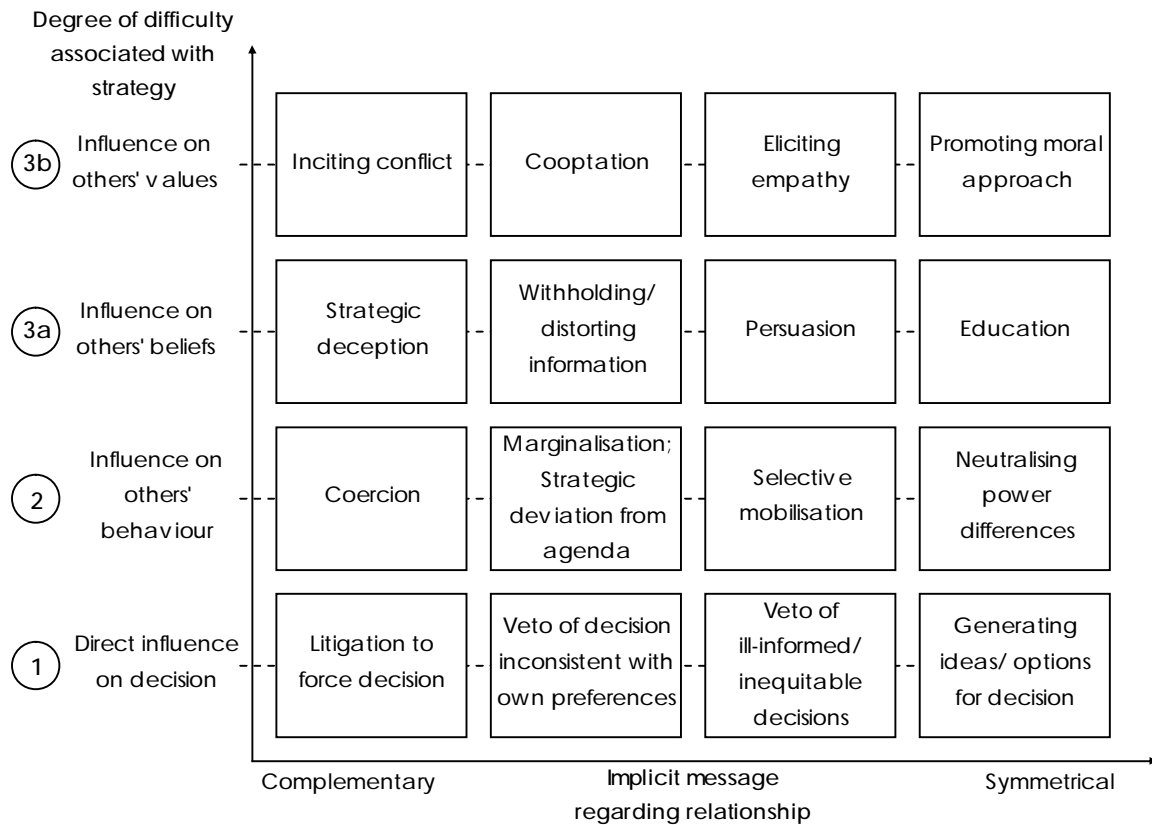
tactics are provided below. Once again, a pair of examples is provided of each of the four strategies depicted in Table 7.1, and the members of each pair differ in the extent to which they propose complementary relationships among participants:

- ✓ *Using litigation to force decisions.* This tactic represents an extreme version of Strategy 1. It relies on the legal right of citizens to exert direct influence on the outcomes of a public participation process, but exercises this right in a manner that precludes all attempts at establishing a symmetrical relationship among participants. It was mentioned in Section 3.2 that, because public participation creates a forum for resolving disputes, it normally reduces the probability that stakeholders will resort to litigation to protect their interests. However, if stakeholders perceive that the process is unlikely to yield results they consider desirable, they may bypass or override the participation process altogether by taking recourse to the courts (Carnes et al., 1998; Sinclair & Diduck, 2001). The South African environmental impact assessment process, for instance, allows participants to lodge an appeal against a record of decision issued by a government authority upon completion of an environmental impact assessment (see Section 3.5.2b). If such an appeal is successful, it may overturn any decisions that were taken on the basis of the process.
- ✓ *Veto of decisions inconsistent with own interests.* A less extreme form of Strategy 1 was described in Section 6.3.5b), where it was mentioned that participants might threaten to withdraw from a process if it appears to be headed in a direction that is incompatible with their agenda. In the hands of key role-players whose cooperation is essential to ensure the legitimacy of the process (important representatives of industry, for example), such threats are a powerful tool for vetoing inconvenient decisions.
- ✓ *Coercion.* It was also pointed out in Section 6.3.5b) that participants may attempt to intimidate their opponents and place various obstacles in their way so as to force them to withdraw from the participation process. Such intimidation may take the form of court interdicts or letters from lawyers threatening court action. Such a tactic differs from litigation to force a decision (which was described above) in that it is aimed against *specific participants* rather than at overturning the overall outcome of a public participation process. Thus, it represents an example of Strategy 2.
- ✓ *Marginalisation and exclusion.* Deliberately excluding opponents from the public participation process represents a less extreme form of coercion. As was mentioned in Section 6.3.5d), such exclusion may take various forms. For example, self-appointed community leaders may actively discourage other community members from having contact with the project proponent or public participation facilitator, while the patriarchal attitudes of men in traditional communities may prevent women in such communities from becoming involved. Another subtle way in which participants may constrain the behaviour of others is by *strategically deviating from the agenda*. As was pointed out in Section 6.3.5c), such a strategy (which is also known as “filibustering”) may prevent stakeholders from raising issues they consider important.
- ✓ *Strategic deception* is an extreme form of Strategy 3a, in that it represents an attempt to influence the beliefs of other participants in such a way as to promote one’s own interests. Examples of such deception were provided in Section 6.3.5a).



- ✓ *Withholding or distorting information.* Section 6.3.5a) also drew a distinction between *crude* deception and *subtle* deception. Whereas crude deception involves providing information that is blatantly false, the latter may involve strategically withholding information or presenting facts in such a way that their full implications are not apparent to the audience.
- ✓ *Inciting conflict among participants.* It was pointed out in Section 6.3.2d) that some parties (such as politicians) might attempt to use a public participation process to pursue unrelated objectives (such as winning votes), and that they might do so by deliberately inciting conflict among participants. Such a tactic capitalises on the effects of *group dynamics*; it involves framing a conflict in such a way that the salience of group identity is increased and tensions between ingroups and outgroups are emphasised. In other words, it involves strategic manipulation of participants' *values*. This attribute characterises it as an example of Strategy 3b. It also places it in direct opposition to the *promotion of a moral approach*, which – as was pointed out above – entails increasing the salience of common values rather than partisan interests.
- ✓ *Co-optation.* As was mentioned in Section 6.3.5b), co-optation represents another strategy that relies on group-dynamic effects. This strategy involves “winning over” opponents by offering (or pretending to offer) them membership of a powerful, elite group of role-players, which may include the project proponent. As they begin to identify with this group, their values might gradually come to resemble those held by the members of this group. Thus, they may become less and less responsive to the needs of those they are supposed to represent. This strategy is therefore similar to an attempt to elicit empathy from other participants: on the surface, it appears to propose a symmetrical relationship. However, its underlying motive is to increase the dominance of one party over another.

In the foregoing paragraphs, sixteen tactics were identified that participants might employ to influence the outcomes of a public participation process. These tactics were classified in four categories, which were termed “Strategy 1,” “Strategy 2,” “Strategy 3a” and “Strategy 3b.” These four categories differ in terms of the relative ease with which they may be achieved, but also in terms of the extent of influence they allow. The tactics in each category, on the other hand, differ in the extent to which they promote effective public participation by cultivating or proposing symmetrical relationships among participants. The figure below summarises these sixteen tactics, the strategies they represent and their implicit messages about relationship.



**Figure 7.29 A typology of strategies for influence in public participation**

In closing, it is appropriate to note one of the factors that may influence whether or not a particular tactic is successful in a given situation. As the forgoing figure shows, every tactic carries an *implicit message about relationship*. However, as was pointed out earlier, participants also use their current *perceptions* regarding the relationships as a “frame” for interpreting the actions of others. For instance, if I regard the relationship between you and me as a symmetrical one, I might be liable to interpret all (or most) of your actions toward me in symmetrical terms. Thus, if your behaviour toward me is motivated by a desire to establish dominance (in other words, if you are enacting one-half of a complementary relationship), I might completely misinterpret the meaning of your actions.

The success (or failure) of a given tactic may therefore depend on whether its *implicit message about relationship is consistent with the perception of the relationship* held by its target. Thus, for example, *strategic deception* will only be effective if its target believes the relationship to be a symmetrical one. If I know that you wish to dominate or exploit me, I will have limited confidence in information with which you provide me. However, if I regard our relationship as one of mutual cooperation, I might misinterpret this tactic as *education*, or at least as an attempt at *persuasion*. The inverse of this situation is also possible: if I regard the relationship between us as a complementary one, I might interpret your efforts to educate me as an attempt to deceive me or to distort information. In the same way, vetoing of ill-informed or inequitable decisions may be misinterpreted as vetoing of decisions that are inconsistent with one’s own preferences, an attempt to neutralise power differences may be interpreted as marginalisation, co-optation may be interpreted as an appeal to empathy or morality (and vice versa), etc.

g) *Errors in logical typing*

Model B also sheds light on some of the errors that are liable to creep into *descriptions* and *scientific analyses* of public participation. It was pointed out in Section 4.6.1 that the possibility of describing a set of phenomena at more than one level brings with it the danger that the *differences between levels* might be overlooked. Consequently, terms of description that are appropriate at one level might be applied to phenomena at another level by mistake. Examples that were provided of such errors included the assumption that the material substrate of living organisms must itself be alive (the fallacy of vitalism), that individual neurons must be capable of thought and that the attributes of a relationship can be ascribed to the individuals involved in that relationship.

As was discussed in Section 2.1.2, Nothdurft (1995) distinguishes between two perspectives from which a public participation process might be described: the *legal-political perspective* (which involves describing the process in terms of the procedures or techniques employed to structure the process) and the *interactional-structural perspective* (which implies describing the behaviour and experience of participants involved in the process). Model B clarifies the difference between these two perspectives: it is a difference in *logical type*. The legal-political perspective describes a public participation process at the level of *group processes* (although this description is limited to *institutional rules and parameters*, and does not take into account the “informal” rules that emerge from patterns of interaction and networks of relationships among participants). The interactional-structural perspective, on the other hand, describes it at the level of *sequences of interaction*.

Nothdurft acknowledges that both levels of description are valid and necessary – but that they address fundamentally different issues regarding public participation. In terms of the structural model presented in Section 6.1, it may be argued that the legal-political perspective describes the relationship between a public participation process and the larger political and legislative system in which it is embedded. In other words, it focuses on its *meso-* and *macrosystem*. The interactional-structural perspective, by contrast, concentrates on the *microsystem*; it looks at the manner in which participants interact with one another, assimilate and exchange information, influence one another’s beliefs and attitudes, take decisions, etc.

The distinction between the two levels is, however, complicated by the fact that they *often employ similar terms*, using them to denote *dissimilar concepts*. Nothdurft uses the example of the term “fairness.” At the level of institutional rules and parameters, fairness refers to “a special procedure ... condensed into a set of structural rules” (Nothdurft, 1995, p. 270). These rules might include the requirement that all potentially affected parties be given equal an opportunity to influence the process, etc. At the interactional level, by contrast, fairness implies “being treated respectfully,” giving due consideration to “concerns about the dignity and carefulness of procedure,” having the opportunity to “present oneself in a way consistent with one’s own self-image” and the like (Nothdurft, 1995, p. 270).

It is not unusual for a term to have different meanings in different types of discourse. The term “chaotic,” for instance, has a very precise definition if it is used in the context of chaos theory (Lorenz, 1993), but this definition is not necessarily implied if the term is used to describe a situation in everyday life. When the varieties of discourse pertain to different levels of description of *the same phenomenon*, however, it is very easy for meanings associated with the term at one level to “spill over” when the term is used at another level.

Such diffusion of meaning can lead to subtle, but far-reaching, errors in reasoning. For instance, confusing the two meanings assigned to “fairness” may lead to the erroneous conclusion that, if the *formal procedures* employed during a public participation process meet the criteria of fairness at the legal-political level, participants will also experience the process as fair. Nothduft (1995, p. 270) explains such an error as follows: “The concept of procedure-as-such or procedure-as-pure-form (which makes sense when you discuss it in legal discourse) has been taken as a concept for describing the interactive elements in real cases of mediation or – even worse – mistaken as the interactional reality of mediation.” In short, an *error in logical typing* has slipped into the analysis of the participation process.

#### 7.2.4 Concluding thoughts on Model B

The model developed above provides a powerful conceptual framework for linking various aspects and levels of psychosocial dynamics in group settings. This framework has the potential of enhancing our understanding, not only of public participation, but of human behaviour in general. The model also clarifies the ontological status of higher-level phenomena such as interpersonal relationships, group dynamics, culture, etc. In particular, it provides a possible answer to the question of whether such phenomena are mere *epiphenomena* that exist only as abstractions in the mind of the observer, or whether they are “real” in the sense that they exist within (or exert an influence on) the systems being observed. It was pointed out that, whenever a system includes entities with mental capabilities comparable to those of the observer, the abstractions formed by these entities through observations of their world may be similar to those formed by the observer. They might even form abstractions about the experience of being observed. Thus, as systems theory insists, it may not be appropriate to separate the *act of observation* from the dynamics of the system *under observation*. Because our behaviour is shaped by our experience, any so-called epiphenomenon becomes “real” as a causal agent within a system the moment it impinges on the experience or awareness of someone within that system.

The model also emphasises that people are not always consciously aware of the abstractions they form on the basis of their experience. One type of abstraction that is particularly deeply rooted in the human mind is the network of experiences, perceptions, judgements and actions that is commonly referred to as *interpersonal relationships*. Very often, the only aspects of our relationships that enter into our sphere of awareness are the feelings and emotions they arouse in us. It may be that these emotions merit the term *epiphenomena*, as the real “work” of observing patterns in the behaviour of others, drawing conclusions about their motives on the basis of these patterns, emitting and receiving subtle non-verbal signals to negotiate our relationships with them – all of these activities usually take place at a subliminal level. Because virtually all human behaviour is shot through with communication about relationship, very few actions (in public participation or beyond) can be fully understood without taking into account their relational context and subtext.

Placing Model A and Model B side by side, it becomes apparent that each complements the strengths of the other. It was noted in Section 7.1.4 that, because Model A focuses on ideas held by *individuals*, it becomes clumsy when it is used to interpret interpersonal relationships. Model B, on the other hand, views such relationships as emergent properties of the interaction *between individuals*.

It was also noted that Model A cannot explain how habits or perceptions that occupy fundamental positions in the hierarchy of ideas can become so widely shared that they may aptly be regarded as the *defining premises of a group or culture*. Furthermore, Model A is vague on the relationship between such cultural premises (which reside in the heads of individuals) and cultural *artefacts* (the things people in a particular culture make or do). Model B is able to shed light on both these questions. It regards the tangible manifestations of culture as *order parameters* – in other words, observable patterns or trends in behaviour that extend across time and across large numbers of individuals. Members of a culture may observe these patterns (perhaps at an unconscious level), and may form abstractions about their social world on the basis of these observations. Once these abstractions are incorporated into their ideas structures, they become effective as *control parameters* – in other words, they may then shape the experience and behaviour of individuals. Behaviour shaped by these abstractions may therefore serve to *reinforce and extend* the patterns of behaviour on which they were originally based. Thus, shared premises give rise to shared patterns of behaviour – which, in turn, propagate those shared premises.

What Model B gains in scope, however, it loses in terms of depth. Although it acknowledges that observed patterns may become lodged as fundamental ideas in the minds of individuals, it is unable to explain why such ideas are often extremely resistant to change. Model A, on the other hand, provides an answer to this question. It points out that, because the mind is equipped with a finite amount of flexibility, it must channel that flexibility wherever it is needed most – in other words, towards mental activities that require the constant re-evaluation and adjustment of assumptions. Hence, it cannot afford to expend flexibility on ideas about those aspects of the world that are relatively constant. Because such ideas are likely to remain valid over long periods of time, they tend to become “hardwired” or delegated to less flexible parts of the mind.

## CHAPTER 8: CONCLUSIONS

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*There is a theory which states that if ever anyone discovers exactly what the Universe is for and why it is here, it will instantly disappear and be replaced by something even more bizarre and inexplicable. There is another theory which states that this has already happened.*

– Douglas Adams, "The Hitchhiker's Guide to the galaxy"

In Chapter 1, three objectives were outlined for this study. The first was to evaluate the need for a theoretical model of public participation that incorporates its psychosocial dimension; the second was to *construct* such a model, if it was found to be necessary; and the third was to *apply* this model to identify possible solutions for some of the problems frequently encountered in participation processes. The first objective of the study was accomplished in Section 2.1, where some of the guiding assumptions of the study of public participation were identified on the basis of a preliminary review of literature on the subject. The second objective was accomplished in Chapter 7 with the development of Models A and B. The third objective will be addressed in Section 8.1 below.

### 8.1 IMPROVING THE PRACTICE OF PUBLIC PARTICIPATION

A number of problems that frequently occur during public participation were discussed in Section 6.3. These include the following:

- ✓ Participants often hail from diverse *social or cultural backgrounds*. This can have a number of negative consequences. First, people from different backgrounds may differ in terms of *values and beliefs*, and such differences may be a source of conflict among participants. Second, people from different backgrounds often have different ways of *behaving and communicating* – and these differences might cause participants to misinterpret one another's actions and intentions. Third, they might differ in terms of *power and resources*. Such differences can create situations in which some parties dominate the process, while others are marginalised or excluded altogether. Furthermore, participants' perceptions of one another might be clouded by social or cultural *stereotypes and prejudices*.
- ✓ In many public participation processes, some participants are not interested in devising mutually acceptable solutions that are in the best interests of all concerned. Instead, they participate with the aim of furthering their own interests. They might do so by *deceiving or coercing* other participants, or by stalling the process through deliberate *deviation from the agenda*.
- ✓ Participants might *disregard or disbelieve* factual information provided to them. Consequently, they might not have an adequate knowledge base from which to participate meaningfully.
- ✓ Participants might also *frame* issues in different ways. For instance, some might view a problem as a purely factual dispute, while others might regard it as a



conflict in values. The way in which decision options are framed may also influence the manner in which they are *evaluated*. For instance, people tend to be risk averse if options are framed in terms of gains, but risk-seeking if the same options are framed in terms of losses.

- ✓ When participants perceive that they are not being given a chance to influence decisions that will affect them, they tend to react negatively – even if those decisions are in their best interests.
- ✓ People tend to react negatively to *change*, despite the fact that some changes might be for the better.
- ✓ The foregoing problems might have various negative effects on the outcomes of a public participation process. If participants disregard some information, for instance, decisions taken during the process may be characterised by *false consensus*. If some participants perceive that their interests are being threatened or that they are being coerced or deceived, the process might also degenerate into *escalating conflict*. Another possibility is that stakeholders might adopt an *apathetic* stance toward the process.
- ✓ Preventing or managing these problems presents its own set of challenges for public participation *facilitators*. Such challenges include the need to neutralise or reduce *power differences* among participants, to cultivate an attitude of *empathy* and consideration for the interests of others, to build *capacity* and *skills* for meaningful participation, to facilitate *trust* among participants, to promote *critical self-reflection* and to manage *conflict* between disputing parties.

The models developed in the previous chapters suggest a number of possible strategies for addressing some of these problems. These include training in group processes, the construction of “idea trees,” maintaining an optimum level of flexibility in participants’ ideas and paying sufficient attention to the relationship dimension of public participation. These suggestions are discussed in greater detail below.

### 8.1.1 Training in group processes and communication

It was pointed out in Section 7.2.3b) that some existing public participation processes provide participants with *training in group processes*. The findings of this study confirm the advantages of such training. The study also offers suggestions regarding the appropriate content of such training. In particular, it suggests that participants need to know about issues such as:

- ✓ Factors that influence group decision-making, such as sharedness and centrality (Section 5.4.1a);
- ✓ Group polarisation and groupthink (Section 5.4.2);
- ✓ Social identity theory, prejudice and stereotyping (Section 5.4.3);
- ✓ Schismogenesis and its role in escalating conflict (Section 5.4.4); and
- ✓ Cultural differences in behaviour and communicative conventions (Section 5.4.5c).

Possible benefits of such training include the following:

- ✓ It may prevent participants from settling for *premature or false consensus*;

- ✓ It may reduce the potential for *escalating conflict* during a public participation process; and
- ✓ It may help to prevent *misunderstandings* among participants regarding their motives and intentions.

### 8.1.2 Constructing idea trees

It was suggested in Section 7.1.3c) that public participation processes may be analysed by constructing “*idea trees*” representing the differences in participants’ attitudes, beliefs and preferences regarding a given set of issues. The information necessary to construct an idea tree may be obtained by having participants state their respective viewpoints and then reflect on the reasoning and experiences on which these viewpoints are based. A series of questions that might be used to elicit such information was presented in Section 7.1.1b).

Idea trees may provide an elegant means of depicting the differences and similarities among participants in terms of their beliefs, preferences, intended actions, etc. However, their usefulness might go beyond their use as a research tool. Having participants construct such a tree may also enhance the *effectiveness* of a public participation process. Benefits that might be derived from adopting the construction of idea trees as a public participation technique include the following:

- ✓ It may promote *critical self-reflection*. Because the construction of an idea tree entails the provision of increasingly more in-depth answers to the question “Why do you say that?” it may encourage participants to explore the premises and assumptions on which their beliefs and preferences are based.
- ✓ It was mentioned in Section 7.1.3e) that people with different premises might interpret the same information in different ways. Because idea trees have the potential to reveal differences in premises, they may help to prevent disparate interpretations of information from giving rise to *misunderstandings* among participants. Idea trees may also reveal differences among participants with regard to the manner in which problems are *framed*.
- ✓ Finally, having participants explore their differences by constructing idea trees may serve as a tool for *managing conflict*. Because it requires that participants focus on the reasons underlying their own convictions rather than on ways of discrediting opposing viewpoints, it may help to cool tempers during heated debates.

### 8.1.3 Maintaining optimum levels of arousal and flexibility

In addition to the specific tools discussed above, the study also provides two general guidelines for the facilitation of public participation processes. The first of these is discussed in this section, and concerns the necessity of considering the *economics of flexibility* to which all people are inevitably subject. The second guideline concerns the importance of the *relationship dimension* of public participation, and is discussed in Section 8.1.4 below.

It was suggested in Section 7.1.4 that effective facilitation of public participation processes may involve the creation of interactional settings that maintain an *optimal level of arousal* in participants. This suggestion was based on the assumption that insufficient arousal may

reduce participants' motivation to engage meaningfully with issues. Excessive arousal, by contrast, equates to high demands on participants' *budget of flexibility* – which, in turn, increases the probability that they will rely on “hardwired” modes of action rather than consider all relevant information when making decisions.

In practice, managing the economics of flexibility may entail limiting deliberations to a relatively small number of people at a time – for instance, by having participants divide into small groups to discuss issues (Krannich et al., 1994). As was mentioned in Section 7.2.3a), public participation processes also need to be planned in such a way that participants have sufficient *time* to engage with issues. Furthermore, because excessive arousal might divert participants' flexibility away from substantive issues, it may be necessary to employ structured techniques (such as the “idea tree” tool discussed above) to maintain focus and prevent emotions from clouding issues.

Managing the flexibility of participants' ideas in this manner may help to address a number of problems in public participation:

- ✓ It was suggested in Section 7.1.4 that the economics of flexibility may be responsible for people's *aversion to change*. Hence, increasing the flexibility of participants' ideas may reduce the probability that they will reject novel suggestions out of hand;
- ✓ Controlling factors that place competing demands on participants' flexibility may reduce their reliance on cognitive heuristics, stereotypes, etc. when evaluating arguments and evidence. In the terminology of the elaboration likelihood model of persuasion (see Section 5.3.5), it may increase the probability that participants will process information by means of the *central* rather than the *peripheral route*; and
- ✓ If participants have sufficient flexibility at their disposal, the probability may be enhanced that they will *assimilate* the necessary information on relevant issues and apply this information to make informed decisions.

#### 8.1.4 Being aware of the relationship dimension of public participation

It was mentioned a number of times in Chapter 7 that people are finely attuned to signals that define or negotiate interpersonal relationships. Such signals are often conveyed non-verbally through gestures, facial expressions or modulations of speech that are only partially under the speaker's voluntary control. Meaningful actions may also convey messages about relationships – and people often judge one another's behaviour more in terms of this relational subtext than in terms of its tangible consequences.

A number of examples were provided of ways in which the relationship dimension of a public participation process might influence its outcomes. For instance, it was mentioned in Section 7.2.3d) that people may react negatively to the experience of being excluded from decisions that affect their lives, not only because such decisions might threaten their interests, but because the act of exclusion implicitly places them in a submissive position vis-à-vis the decision-maker. Even the procedure used to select participants may be judged in terms of the type of relationship it proposes between the public and the sponsor of the process. This might explain why the “first come, first served” method of selection is often regarded as more acceptable than procedures based on random selection:

allowing people to decide for themselves whether or not they want to participate places them in a symmetrical relationship with the sponsor.

By actively encouraging participants (including project proponents and authorities) to consider the types of relationships they are defining with one another through their actions, a number of pitfalls in public participation may be avoided. For example:

- ✓ The probability that participants will become locked in *escalating conflict* may be reduced;
- ✓ Building positive, sincere relationships may contribute significantly toward the establishment of *trust* among participants;
- ✓ The likelihood that some participants will unintentionally *dominate* the process may be reduced; and
- ✓ Efforts to define the relationship between citizens and decision-makers in symmetrical rather than complementary terms may serve as an antidote for the *apathy* and *disillusionment* that many people feel toward public participation.

### 8.1.5 A caveat

It should be noted that the tools and guidelines proposed above will not be able to eliminate *all* problems in public participation. For instance:

- ✓ If a public participation process is not supported by an adequate legislative and institutional framework, or if this framework fails to ensure that participants' inputs are considered during the formulation and implementation of decisions, no amount of effort to improve the effectiveness of the process itself will help to bolster its legitimacy or negate public cynicism.
- ✓ In some cases, the values and ethical principles underlying people's actions might not be the consequences of psychosocial dynamics, but a manifestation of free will and rational deliberation. For example, if people truly believe that they are serving justice or the interests of the environment by sabotaging a public participation process, and if they have considered all relevant information when making this decision, it is unlikely that the insights provided by this study will help to change their minds. At best, they might equip *other* participants with the tools to respond appropriately to such actions.
- ✓ Some public participation processes inevitably involve hard choices regarding the distribution of risk or the allocation of scarce resources. In such situations, there are sometimes no win-win solutions, and conflict between "winners" and "losers" might be inevitable. Thus, it may be naive to suppose that it is always possible to defuse conflict among participants.

## 8.2 IMAGES AND METAPHORS OF PUBLIC PARTICIPATION

It was argued in Section 2.2 that there are a number of alternative viewpoints regarding the nature and role of scientific theory. One of the issues on which these viewpoints differ from one another is in terms of the *criteria that should be used for evaluating a theory*. A set of criteria was then adopted for evaluating the theory of public participation developed in this study. It was pointed out that, because the theory does not rely on

quantification or statistical generalisation, it cannot be evaluated in terms of its ability to *predict* the course or outcomes of any given public participation process. Instead, it should be evaluated in terms of its ability to provide *illustrative metaphors* and powerful, succinct *descriptions* of public participation. The value of the theory should also be assessed in terms of its ability to generate hypotheses for *future research*.

The models presented in Chapter 7 offer a number of images or metaphors of public participation, each of which captures different aspects of its psychosocial dynamics:

- ✓ First, Bateson's (2000) concept of an *economics of flexibility* was developed into a theory of the development and modification of ideas. This theory identifies a few of the parameters governing the probability that a public participation process will bring about change in people's beliefs or attitudes regarding a given set of issues. In particular, it points out that ideas gradually become "hardwired" as habits if they withstand the test of repeated experience. Such habits of thought or action are generally less accessible to conscious introspection, and are more difficult to change when contradicted by new experiences. Furthermore, people's reliance on habitual scripts tends to increase when circumstances or emotional arousal place competing demands on their attention.
- ✓ Second, the notion of an "idea tree" was introduced in Section 7.1.1e) as part of Model A. This image is based on the assumption that ideas are related to one another in a hierarchic manner, with more fundamental ideas occupying positions closer to the base of the tree. As was mentioned above, it provides an elegant means of depicting the differences and similarities among a group of people in terms of their beliefs, preferences, intended actions and the like.
- ✓ Third, a model was developed that distinguishes between four *levels* in the psychosocial dynamics of public participation. The first (and most concrete) of these levels pertains to individual ideas and actions; the second to sequences of interaction between participants; the third to interpersonal relationships; and the fourth to the formal and informal rules that influence the behaviour of groups.
- ✓ Fourth, a typology was developed in Section 7.2.3f) to distinguish between the various *strategies* that stakeholders might employ to influence the progress and outcomes of a public participation process. These strategies differ from one another in terms of the level of dynamics at which they operate (for instance, whether they rely on the formal rules governing the group or on the constraints influencing the behaviour of individuals). They also differ in terms of the types of relationship they cultivate among participants.

The conclusion that this study has made a meaningful contribution to the arsenal of conceptual tools for analysing public participation therefore appears to be justified. However, the real value of these tools will only come to light when future studies apply them in the analysis of actual participation processes. Section 8.3 below suggests a few possible routes that such studies might take.

### 8.3 AVENUES FOR FUTURE RESEARCH

A few possibilities for future studies based on the theory developed in this study are outlined below. The first of these concerns the hypothesis that people have a finite

amount of mental flexibility at their disposal, and that the effective facilitation of public participation entails *channelling flexibility* where it is needed most. The second concerns the possibilities inherent in the use of *idea trees* as a tool in public participation. The third involves the possibility of tracing the course of individual public participation processes by mapping participants' *preferences* and the *strategies* they employ to impose these preferences on the process. The fourth involves the development of *phase portraits* to depict the manner in which public participation processes unfold over time. Finally, studies of a more philosophical nature might endeavour to formulate systemic, rather than utilitarian, *criteria for evaluating decisions* taken during public participation.

### 8.3.1 Channelling flexibility

As was pointed out above, the study suggests that effective facilitation of public participation involves challenging participants to *exercise their flexibility* – for instance, by examining their ideas and questioning their assumptions. However, the demands on their flexibility should not be too great, as this may divert attention away from the relevant issues and erode the quality of decisions. Future research in this regard might focus on *operationalising* this hypothesis. For example, is it possible to quantify the amount of flexibility required for various tasks? The assumption that simultaneous tasks deplete flexibility in an *additive* manner may also need to be verified empirically.

### 8.3.2 The use of idea trees

The proposition that differences among participants may be depicted by means of idea trees also raises a number of questions. Do participants have sufficient insight into their own premises and assumptions to provide the information required to construct such a tree, for instance? And are such trees useful for enhancing the quality of public participation, or does the process of compiling them take so long that the cost in terms of time outweighs their benefits?

If it is found that the construction of idea trees is too time-consuming to be useful as a public participation *technique*, it may still have its uses as an *investigative* tool. For instance, they might be used to conduct comparative studies of public participation processes. One possible benefit of such comparative studies is that they might determine whether there is a correlation between the type of diversity in participants' ideas (in particular, whether the group is characterised by “deep” or “shallow” diversity) and the probability that they will be able to reach consensus.

### 8.3.3 Mapping preferences and strategies of influence

It was pointed out in Section 7.2.3f) that participants often have divergent preferences regarding the outcomes of a public participation process, and that they might employ various strategies to steer the process in the direction of their own preferences. Some of these strategies might involve influencing the ability of other participants to manipulate the process; others might involve influencing other participants' preferences – for instance, by attempting to influence their beliefs and/or values.

The typology developed in Section 7.2.3f) to distinguish between the various forms such strategies might take may prove to be a valuable tool for conducting *case studies* of public participation. Such case studies may involve observing a public participation process, determining the preferences of various participants as reflected in their behaviour



and discourse, identifying the strategies they employ to promote these preferences, recording how other participants respond to these strategies and noting the extent to which the strategies are successful. Comparing a large number of such case studies may yield various insights into the dynamics of public participation. For instance, it may reveal trends in terms of the types of participants that are most likely to employ a particular strategy, identify factors that influence the success or failure of a strategy, and provide a means of predicting whether participants' preferences will be significantly altered by a participation process.

### 8.3.4 Phase portraits of public participation

The two models of public participation developed in Chapter 7 illuminate various aspects of its psychosocial dynamics. However, both suffer from a significant shortcoming: the insights they provide are somewhat fragmentary, and do not shed much light on the overall "shape" of a public participation process. The concept of *phase space* – which forms an important tool in dynamical systems theory – may provide a means of addressing this deficiency. As was discussed in Section 4.5, phase space is a theoretical, multidimensional space in which every dimension denotes one of the variables describing attributes of a system. Thus, every point in the space denotes one of the possible states the system might assume. As a system's state changes over time, the variables describing this state change in value, so that the point describing the system's state inscribes a trajectory through its phase space. This trajectory is called a *phase portrait*, and it may be graphically represented by projecting the phase space onto a graph consisting of two or three dimensions.

A particularly promising area of future research involves the development of a "phase space" model of public participation. Since the number of variables required to delimit the phase space of a public participation process would most likely be extremely large, a first step in the development of such a model would involve the identification of a set of *order parameters*. The criteria for selecting such order parameters would be that they are sufficiently comprehensive to capture important aspects of a public participation process, and yet small enough in number to permit graphical representation of the phase space. A next step would be to identify areas within this phase space that correspond to particular characteristics or outcomes of a participation process. Of particular importance would be the identification of "attractors" within the phase space – in other words, states to which a large proportion of participation processes are likely to evolve, even if they start out with different characteristics. A third step in the development of the model would be to identify attributes of participants, the problem setting and its social or legislative context that are likely to "nudge" the trajectory of the process toward one attractor or another.

The figure below depicts a possible version of such a phase space model. The space defined by this model consists of three dimensions:

- ✓ The *extent* of participation (in other words, the proportion of potentially affected parties who are actively involved in the process);
- ✓ The *competence* of discourse (in other words, the extent to which participants take relevant information and issues into account when deliberating and making decisions); and

- ✓ The degree of *consensus* among participants (in other words, the extent to which participants agree on the relevant factual, normative or procedural issues).

The goal toward which a public participation process strives is assumed to be the point marked in the top right-hand corner of the phase space. At this point, a maximum number of stakeholders are involved in highly competent discourse, and they succeed in achieving a high degree of consensus. However, the probability that a process will be able to reach this ideal state is reduced by the presence of two *attractors*. The first of these attractors is located in the bottom left-hand corner of the phase space, and it represents a state of *escalating conflict*. This state is characterised by a high degree of participation, but low competence and low consensus. Because escalating conflict tends to be self-reinforcing, the “pull” exerted by this attractor becomes stronger the closer a process approaches this region of phase space. Another attractor is located along the top left edge of the phase space. It represents a state of *false consensus*, in which participants achieve a high degree of agreement about issues, but achieve this agreement by either excluding dissenting voices or ignoring contradictory evidence. In both cases, the outcome of the process is characterised by low competence.

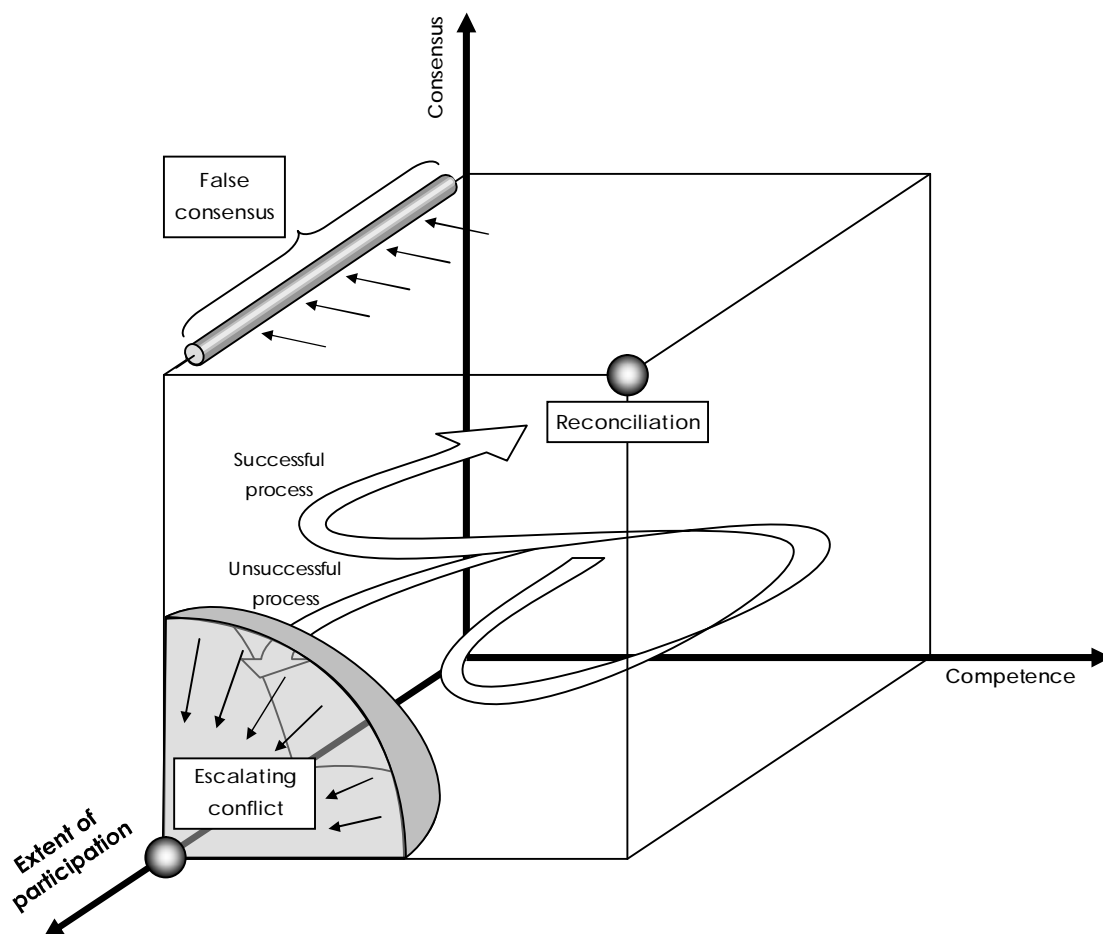


Figure 8.1 Hypothetical phase portraits of two public participation processes

The figure also depicts the *phase portraits* of two hypothetical public participation processes. Both trajectories originate on the furthestmost edge of the phase space, where the variable “extent of participation” has its lowest value. This indicates that the processes began with a small number of participants, but that the extent of participation gradually increased as the process unfolded. Both processes initially achieved a significant level of competence in their discourse, but this competence then declined again – perhaps because a particularly contentious issue arose that evoked the ire of participants. This development is represented by the fact that the trajectory initially approaches the right-hand face of the phase space, but then curves away again. After this, the two processes part ways. In one process, participants are able to reinstate competent discourse and achieve consensus. In the other, participants become locked in escalating conflict.

Although this example is a hypothetical one, it illustrates the opportunities offered by this line of research. By compiling phase portraits of real participation processes, it might be possible to discern patterns and regularities that would not be apparent otherwise. Hence, it might greatly enhance our ability to understand and predict the outcomes of such processes.

### 8.3.5 Redefining “good” decisions

In Section 3.2.3a), it was mentioned that the definition of criteria for evaluating decisions taken during a public participation process presents a significant challenge. It was pointed out that the *utilitarian* definition (according to which a good decision is one that yields the greatest happiness for the greatest number) is insufficient, as it has the potential of subjecting parties directly affected by a decision to the “tyranny of the majority.” It was suggested that this deficiency might be overcome by defining a good decision as one that yields the greatest happiness for the greatest number, but does so without unfairly disadvantaging anyone.

It was acknowledged, however, that this definition still has important shortcomings. For instance, it does not specify when a disadvantage to a minority is great enough to be regarded as “unfair.” Furthermore, it does not specify how “happiness” should be defined, or whether the voice of those who are not able to express their happiness or dissatisfaction with a decision (future generations or non-human elements of the ecosystem, for instance) should be included in the equation. The opportunity therefore presents itself for philosophical enquiries into the *nature of “good” decisions taken during public participation*.

Heinz von Foerster – one of the leading proponents of systems theory – proposed the following general maxim for evaluating one’s decisions: “*always try to act so as to increase the number of choices*” (Von Foerster, 1992, p. 16). The *economics of flexibility* is nothing other than a practical means for living by this maxim. If one expends one’s flexibility where it is likely to be needed most (and, conversely, delegates processes that are unlikely to require flexibility to less pliable information-processing pathways), one is in fact maximising one’s ability to adopt alternative courses of action. This, in turn, increases the probability that one will be able to respond appropriately to unforeseen changes in circumstances.

It may be possible to develop an alternative criterion for evaluating the outcomes of public participation processes – a criterion that does not employ a variation on the utilitarian definition of “good,” but instead assesses decisions in terms of whether they

increase the scope for *future* decisions. According to this definition, for instance, preserving the natural environment for future generations qualifies as good, since it leaves those future generations the option of deciding how they intend to engage with nature. If most species of fauna and flora are destroyed today, however, the option of deciding whether or how to preserve those lost species will not be available to future generations.

A significant amount of work will be required before Von Foerster's maxim can be elaborated into a reliable scheme for evaluating decisions in public participation. For instance, it remains to be seen whether it is always possible to determine whether (and to what extent) a decision increases or reduces the number of choices. Nevertheless, research along this avenue may offer a novel approach to an old problem.

## 8.4 MOVING BEYOND THE MODELS

This chapter closes on a cautionary note: the models developed in this study and the avenues of future research mapped out in the previous section may not be able to capture all essential aspects of public participation or its psychosocial dynamics. One limitation stems from the fact that the models developed in Chapter 7 rely heavily on classification in terms of *logical types*, while real-world phenomena might not always be amenable to such classification. The other limitation is far more general, and is tied to the common scientific practice of defining *variables* to describe alternative states of affairs.

### 8.4.1 Transcending logical types

Model A and Model B both employ the notion of logical typing, although they apply this concept in different ways. Model A builds on the assumption that *ideas* (beliefs, attitudes, habits, premises, etc.) can be arranged in a hierarchy, with some ideas forming the premises of others. It was argued that ideas occupying more fundamental positions in this hierarchy have a higher logical type than ideas at more superficial levels. Model B, on the other hand, distinguishes between various *levels* at which the psychosocial dynamics of public participation may be *described*. It also employs the notion of *orders of communication*, which assumes that messages can be distinguished in terms of their level of logical typing.

It was mentioned in Section 4.5, however, that not all aspects of human communication or interaction can be dissected onto hierarchies of logical types. Art, humour, myth, etc. may derive their numinous qualities from the fact that they *transcend* the rules of logical typing that hold sway over so many aspects of our lives. It is possible that public participation might also contain elements that breach the divisions between logical types.

A number of authors have pointed out the role of *humour* in public participation and in debate. Bourdillon (2004, p. 264), for instance, argues that, in serious debates, humour "can dispel rising tension and create a relaxed atmosphere amenable to constructive thinking. When a disputed point seems to distract discussion from broader issues, humour can help to put it into perspective." Ruby (2003) concurs with this view.

Although it seems implausible at first glance, *myth* may also play a part in public participation. This notion has been taken up by Fritzsche (1995) in the context of *public perception of risk*. He builds on the Jungian idea (Jung, 1990) that the collective unconscious is a repository of *archetypes* that shape our experience and find expression in our myths, both ancient and modern. He points out that people's perception of and

response to risk often follow archetypal themes. For instance, public fears that society has lost control of science and technology echo the archetypal theme of “the hero’s downfall.” Well-known myths patterned on the same theme include the tale of Prometheus (who was punished by Zeus for bestowing the gift of fire on humankind) and that of Icarus (who met his death after flying too close to the sun). Although Fritzsche does not mention the “David-and-Goliath” theme, it is possible that the dark colours in which members of the public often paint industrial giants, and the vehemence with which they sometimes oppose their plans, are a re-enactment of this archetypal struggle between good and evil. Thus, the powerful emotions evoked by some situations in public participation might be explained by the fact that those situations activate (or resonate with) certain archetypes hidden in the collective unconscious.

As the foregoing discussion suggests, the role of humour, myth, art, etc. in the psychosocial dynamics of public participation offers fertile ground for future research. However, the theoretical models developed in this study are ill-equipped to guide such research. In order to describe and analyse phenomena that cannot be categorised in terms of logical type, the models themselves would have to be modified or extended so that they transcend the boundaries imposed by such categories.

#### 8.4.2 The limitations of phase space

It was mentioned in Section 8.2.4 above that the notion of *phase space* offers yet another promising avenue for future research, as it may provide a means for depicting the holistic properties of public participation processes. A point that was not raised previously, however, is that much of the theoretical analysis presented in this study already involved mapping public participation onto some of other variety of phase space. In fact, this claim may be couched in even more general terms: *any* description or analysis that relies on the definition of variables to denote alternative states of affairs implicitly creates a phase space.

This statement may be illustrated with a hypothetical example. Suppose my object of study is a group of ten people and their attitudes regarding a given issue (such as nuclear power). I could describe their attitudes by defining a linear variable ranging from “strongly supportive of” to “strongly opposed to.” In doing so, I would in effect be creating a phase space consisting of ten dimensions – one for each person in the group. The group’s distribution of attitudes would then be reflected by a particular point in this space, and *changes* in their attitudes over time would be denoted by the trajectory (or phase portrait) inscribed by this point. I might not try to form a graphical representation of this phase space, and I might not even use the term “phase space” to describe my analysis. Nevertheless, by the very act of defining a variable, I will have called a phase space into being in the abstract world of mathematics.

Variables and phase space are immensely powerful concepts; they place all the tools of logic and mathematics (syllogism, set theory, algebra, calculus, statistics, etc.) at the disposal of the scientist. However, a number of authors have noted that they also impose subtle limitations on our understanding of the world. One of these authors is complexity theorist Stuart Kauffman (2000). He points out that, when we define a set of variables (and, hence, a phase space) to describe an entity or system, we create an *a priori* set enumerating all the possible states that the entity or system could theoretically assume. Our analysis then involves identifying which states *actually* occur, and under which

conditions. Kauffman goes on to argue that there are some phenomena for which the set of possible states cannot – *even in principle* – be defined in advance.

Kauffman uses biological evolution as an example. He notes that evolution often proceeds by *adapting existing organs to novel functions*. It has been suggested, for instance, that insects' wings evolved from vanes used to regulate body temperature. Suppose an extraterrestrial biologist visited the earth many millions of years ago to study the early evolution of insects prior to their taking flight. Suppose also that the visitor decided to set up a phase space to describe the various forms that insects might adopt, so that their evolution over time could be traced as gradual movements in this space. The product would comprise numerous dimensions: body length, body colour, positioning and dimensions of legs, size and shape of cooling vanes, etc. But, at this early stage in insect evolution, the extraterrestrial would have no way of predicting that some lowly cooling vanes were destined one day to become the organs by which bugs would conquer the sky. Hence, any dimensions relating to "wings" would be absent from the pre-specified phase space, and the need for adding those dimensions would only become apparent millions of years later. As this example shows, it is theoretically impossible to predict all the possible shapes with which evolution might grace the biosphere – let alone to predict which shapes will actually appear, and when.

Konrad Lorenz (1996) offers a similar argument. He notes that, "In describing evolution, we are forever hampered by the fact that our vocabulary was created by a culture not yet aware of phylogeny. All the existing terms (development, evolution, *Entwicklung*, etc.) imply the unfolding of something preexisting ... as a flower in a bud. They ... fail miserably to do justice to what is the essence of evolution, the coming-into-existence of *something entirely new, which simply did not exist before*" (Lorenz, 1996, p. 4). He argues that even the term "emergence" (as in "emergent properties" of a system) suffers from the same shortcoming, as it "suggests that an entirely preexisting thing, like a surfacing walrus, puts in an appearance above the water..."

These arguments suggest that Douglas Adams' quip about the Universe disappearing and being replaced by something even more bizarre and inexplicable is not too far from the truth. The world really does constantly re-invent itself, and it always remains one step ahead of our attempts to comprehend it. The foregoing discussion also suggests that, if science were ever to understand how the world brings forth true novelty, it would require a paradigm shift of the same magnitude as the difference between the reductionist and the systemic worldviews. It would have to adopt analytic tools other than variables and phase space, and it would have to develop a vocabulary that goes beyond the realisation of predefined possibilities.

What would this new way of doing science look like? It is impossible to make confident predictions, but it might be that it will involve a partial return to a much more ancient mode of knowing: that of *narrative*. The contrast between the logic of stories and the logic of science (in its current form) has been pointed out by more than one author. Richardson (1990, p. 2), for instance, mentions that the "logico-scientific mode looks for universal truth conditions, whereas the narrative mode looks for particular connections between events. Explanation in the narrative mode is contextually embedded, whereas logico-scientific explanation is abstracted from spatial and temporal contexts." Polkinghorne (1988) also points out that, whereas the conclusion of a logical argument



can in principle always be predicted (or deduced) once its premises are known, stories can contain *surprises*.

Given the ability of stories to accommodate the surprise element, it is plausible that a scientific paradigm appreciative of novelty and compatible with an endlessly creative universe must necessarily be one that *unites elements of both the logico-scientific and the narrative mode of understanding*. Kauffman (2000) comes to a similar conclusion. If not for stories, he asks,

“... how else should we talk about the emergence in the biosphere ... of new relevant categories, new functionalities, new ways of making a living? ... Stories not only are relevant, they are how we tell ourselves what happened and its significance – its semantic import. In short, we do not deduce our lives; we live them. Stories are our mode of making sense of ... context-dependent actions... Our inability to prestate the configuration space of a biosphere foretells a deepening of science, a search for story and historical contingency, yet a place for natural laws.” (p. 135)

The creative nature of the world is nowhere more apparent than in the corner of the biosphere known as human history. Language, art, religion, science, democracy – all of these are novelties that simply did not exist on this planet until they were brought forth by people. The history presented in Section 3.1 suggests that public participation, too, is the outcome of an evolutionary process extending over thousands of years. It may even be appropriate to regard an individual public participation process as an instance of evolution – an eddy in the current of history during which people might discover new solutions to problems, new ways of understanding the world, new ways of relating to one another. If this is the case, the scientific paradigm employed in this study can hope to do no more than lift the corner of the veil on public participation and its psychosocial dynamics. If we are ever to grasp the extent of its mystery and power, we would have to embrace the “deepening of science” foretold by Kauffman. The tools of the systems theorist would have to be wedded with the art of the storyteller.

## CHAPTER 9: REFERENCES

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