Information Systems Evaluation: a post-dualist interpretation

by

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ABSTRACT

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This thesis explores the problem of information systems evaluation by conceptualising it as a process in which the manager comes to an understanding about a system. In other words, information systems evaluation is a hermeneutic process. The thesis explicates this notion through an argument that is itself hermeneutic in its development, beginning with the mainstream functionalist view of information systems evaluation, and then considering an interpretive view of IS evaluation, each of which points to one of two stereotypes of IS evaluation and the manager engaged in this process: the objective/rational manager utilising objective/rational methods versus the subjective/political manager engaged in political manoeuvring, utilising objective/rational methods only as ritual or symbolism. Neither of these opposing stereotypes is satisfactory. Instead, this thesis proposes a dialectic view of information systems evaluation, in terms of which, rather than being a decision maker, the manager is in-the-world, evaluating systems in order to get the job done, on the basis of her thrownness in-the-world.

This conceptualisation provides an intuitively appropriate account of evaluation on the part of an individual manager, but we must still consider how managers as members of the organisation, reach a common understanding about a system. This they do through a process of organisational learning as encultured knowing, in terms of which a narrative, situated, pragmatic knowledge is most useful in evaluation. Evaluation, in other words, happens in the course of skilful conversation. Such conversation is, however, not always skilful because the organisation is not just a collection of individuals but also a network of power relations. Conversations as generators of meaning are never held outside of power: systems evaluations as conversations cannot take place outside of a regime of truth. A post-dualist view of action as both constituted by and constituting structure, however, suggests that there is always the potential for genuinely hermeneutic and ethical conversation, provided it is both improvisatory and deconstructive. Having understood the requirement for improvisation and deconstruction, it is possible to suggest some heuristics for information systems evaluation based on these ideas.

ANALYTICAL INDEX

The analytical index details the argument developed in the thesis in its entirety, and is included here to assist the reader, by providing a complete overview of the logical flow of the discussion.

1.

Information systems evaluation, the process by which managers assess the value of proposed or extant systems, has been described as a thorny problem. It is difficult for managers to construct an evaluation that can lead to and justify a decision in respect of a system. This problem has increased in severity as systems and the contexts in which they are used have become more demanding and complex.

In the main, information systems researchers, consultants and practitioners have sought to simplify and categorise this complex problem for the purpose of analysis, in order to derive appropriate methods of evaluation. In practice however, it seems that these methods are not used and the problem of information systems evaluation , though an long-standing one, remains.

An alternative way of conceptualising this problem is to view information systems evaluation as a process of coming to an understanding about a system, or a hermeneutic process. This thesis will explicate this notion through an argument that is itself hermeneutic in its development as follows:

2.

Beginning with the mainstream functionalist view of information systems evaluation, we see that many different types of information systems evaluation methods have been developed, ranging from straightforward cost benefit analysis to more complex methods. The latter have been developed because there are multiple types of system, each of which requires a suitable method of evaluation. Although each of these methods has its own conceptual difficulties, far more troublesome is the paradoxical practice which prevails: managers, are in need of methods to help them with evaluation, but fail to use these methods.

3.

By way of contrast, an interpretive view of IS evaluation goes some way towards explaining this paradoxical practice: because information systems are essentially social systems with a technical component, they are subject not to rational/objective evaluation, but to subjective/political evaluation. Even where rational/objective methods are used, managers are inevitably subjective/political in their actions. Such methods are often used, therefore, for purposes of ritual only.

We thus have two stereotypes of IS evaluation, and the manager engaged in this process:

the objective/rational manager utilising objective/rational methods versus the subjective/political manager engaged in political manoeuvring, utilising objective/rational methods only as ritual or symbolism.

4.

Neither of these opposing stereotypes, however, is satisfactory in providing a way out of the thicket of the evaluation problem. Thus we are faced with a dualistic dilemma in need of a dialectic solution. A means of overturning this dualism is indeed to use the dialectic concept of the manager as being in-the-world. This concept suggests that rather than being a decision maker, the manager is in-the-world. She evaluates systems in order to get the job done, on the basis of her thrownness in-the-world. Her understanding of the system emerges from the always already present and significant whole of her existence, until she reaches resolution about the system. Thus the manager appropriates meaning about the system in the process of evaluation. This process can be effective if the manager skilfully understands the situation and is aware of her prejudices, whilst always remaining open to revising them. She must, furthermore, be able to express appropriately her use of both pragmatic judgement and additional information where this has served to articulate distinctions about the situation.

5.

This conceptualisation provides an intuitively appropriate account of information systems evaluation on the part of an individual manager. More frequently however, groups of managers, as members of the organisation, need to reach a common understanding about a system. This then poses the question: How do organisations evaluate systems? Given that evaluation has been characterised as learning, it might

appear useful to explore the idea of organisational evaluation as organisational learning. In the main, however, the organisational learning literature is strongly functionalist, and caught on the horns of its own dualistic dilemma: Is organisational learning a characteristic of the organisation itself or of the individuals within the organisation?

While the mainstream organisational learning literature is thus not helpful in understanding organisational evaluation from a hermeneutic perspective, it guides us, nevertheless, towards a more satisfactory account: that of organisational learning as a process of encultured knowing. This account suggest that, in the organisational context, managers can come to a common understanding about an IS because they collaborate in communities of practice. Thus a narrative, situated, pragmatic knowledge will be most useful in evaluation, which is itself a process of encultured knowing in the organisation. Evaluation, in other words, happens in the course of skilful conversation.

6.

At this point in the argument, however, a disjuncture is apparent between the account of evaluation as individual understanding and the account of evaluation as a skilful conversation. This gap remains un-bridged because we cannot simply extrapolate from the individual to the organisation. The organisation is not just a collection of individuals but also a network of power relations in which the production of knowledge is political throughout. Conversations as generators of meaning are never held outside of power: systems evaluations as conversations cannot take place outside of a regime of truth. The prevailing regime of truth within which these conversations take place is that of *Gestell*, or instrumental reason, and cannot be escaped.

7.

This is a more satisfactory account of evaluation as we see it in-the-world, one which accounts for paradoxical practice within the particular regime of truth of the organisation. At this point, however, it may be argued that I have reached an impasse in transversing the hermeneutic circle, one which leaves managers with no means to proceed, no room for action, because they cannot act outside of *Gestell*. A post-dualist view of action as both constituted by and constituting structure however, suggests that there is always, even in situations of less power (power-less-ness), the

potential for action. In the case of evaluation this refers to the evaluation conversation that must, in order to be both genuinely hermeneutic (open to new interpretation) and ethical (open to the other) be both improvisatory (not defined or closed) and deconstructive (in search of openings).

8.

Having understood the requirement for improvisation and deconstruction in the evaluation, it is then possible to suggest some heuristics for evaluation based on these ideas. This is not a recipe or framework for evaluation, but a more general interpretation of the kind of conversation that might be more skilful in providing a good understanding of an information system.

9.

Thus in conclusion, we have an interpretation of improvisatory, deconstructive evaluation, as a process of hermeneutic understanding. The argument that has been used to develop this interpretation can, furthermore, be shown to be a process of hermeneutic understanding in itself.

DECLARATION

I declare that the thesis, which I hereby submit for the degree, Doctor of Philosophy, Information Technology in the University of the Pretoria is my own work and has not previously been submitted by me for any degree or examination in any other university.

DEDICATION

For Alexandra, who has proved the only rule, with love.

ACKNOWLEDGEMENT

My thanks to Prof. Lucas Introna, who showed me the possibilities of a hermeneutic journey.

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Information systems evaluation, the process by which managers assess the value of proposed or extant systems, has been described as a thorny problem. It is difficult for managers to construct an evaluation that can lead to and justify a decision in respect of a system. This problem has increased in severity as systems and the contexts in which they are used have become more demanding and complex.

In the main, information systems researchers, consultants and practitioners have sought to simplify and categorise this complex problem for the purpose of analysis, in order to derive appropriate methods of evaluation. In practice however, it seems that these methods are not used and the problem of information systems evaluation , though an long-standing one, remains.

An alternative way of conceptualising this problem is to view information systems evaluation as a process of coming to an understanding about a system, or a hermeneutic process. This thesis will explicate this notion through an argument that is itself hermeneutic in its development.

1.1 The Subject Matter of this Thesis

This thesis explores information systems evaluation. By this I refer to the process of assessing the value of information systems, for the purposes of decision making in organisations. How is it that managers can come to skilful decisions about information systems: whether or not to develop and implement them, and - once implemented - whether or not the systems fulfil their objectives? Obviously, information systems evaluation generally is a very broad area, as it can occur at a macro-economic, sectoral, firm or application level, pre- or post-implementation of a system and for summative or formative purposes. In the main however, this thesis addresses the issue of how managers can deal with the "thorny problem" about which they worry: "the amount of money we spend on information technology and the

continuing difficulty of justifying that expense" (Smithson & Hirschheim 1998)[1]. This problem has grown in severity as systems and the context in which they are used have become more demanding and complex.

Now this thorny problem continues not only to bother managers, but also to be generally depicted as problematic in the information systems literature. It seems that managers in organisations have difficulty in justifying and assessing the considerable investments that are made in information systems, in any formal or rational way. This is normally understood to be a difficulty that arises because of the nature of information systems: the outcome - in the sense of benefits to the organisation - is not directly predictable before the fact. Neither is it, in many cases, quantifiable after the fact of system implementation (Robey & Azevedo 1994).

The response of information systems academics and consultants has been to formulate further frameworks and methodologies to facilitate evaluation: if information systems evaluation is problematic, it is presumed that the answer is to refine sufficiently the definition of the object of the problem – that is, the information system itself – and, based on this definition, refine the technique of evaluation accordingly. In other words, there is presumed to be a well-defined isolatable object of study. Given this, it follows that a careful examination of this object will enable information systems managers to determine appropriate evaluative responses[2].

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[1] Although I will, in chapter two mention briefly some of the 'productivity paradox' literature, I will generally in this thesis exclude the macro-economic and sectoral level assessment of information systems value. Also explicitly excluded is that type of evaluation which Hirschheim and Smithson (Hirschheim & Smithson 1988; Smithson & Hirschheim 1998) characterise as falling in an 'efficiency zone': hardware monitoring, software monitoring, simulation, code inspection and software metrics.

[2] I am oversimplifying the issue here somewhat, as there are influential researchers in this field who acknowledge the complexity of the problem and its context (Canevet 1996; Farbey, Land & Targett 1993; Sauer 1994; Serafeimidis 1996; Serafeimidis & Smithson 1996; Serafeimidis, Smithson & Tseng 1996; Symons 1991; Verner, Toraskar & Brown 1996; Walsham 1993). I would contend, however, that they too assume that definition of the content of the evaluation within that context will allow for appropriate methods and techniques.

It is by no means certain, however, that the content of any information systems evaluation can be accurately defined at all. That is, neither the system itself, nor its outcomes, can be determined with any certainty. Firstly, as Ciborra and Hanseth (1998) suggest, once an information system is in development, it becomes subject to self-reinforcing mechanisms, which create path-dependence, unanticipated lock-in and drift of the system itself. This means that the system is constantly ambiguous, and can be constantly justified only if new rationalities are constantly sought. Secondly, the outcomes of the system, because it is a socio-technical system, are not deterministic and can not be determined in advance, or even in retrospect with any certainty (Orman 1995).

Even if the content could be determined, the assumption that certain methods necessarily apply, given that content, is additionally flawed. As I shall describe in §1.3, method is an inadequate substitute for a skilled reading of a situation. The application of method A to situation A is a very simplistic manner of dealing with what is very often a complex situation, however logical the correlation may appear.

Yet it is exactly such notions of logic and technical bounded rationality that currently underpin the body of information systems evaluation literature. There is an assumption that the decision to invest in a system (or to continue investing it, or to cease investing in it), must be rationally justified. In other words, information systems evaluation is, for the most part, firmly placed within a rationalist, functionalist paradigm: if managers would do evaluation properly, they would approach it rationally and with the appropriate methods. Strangely enough, they do not (Blackler & Brown 1988; Farbey *et al.* 1993; Farbey, Targett & Land 1995; Golden & O'Flaherty 1996; Lederer & Mirani 1995; Lederer & Prasad 1996; Lubbe, Egget & Hawkes 1996; Vetschera & Waltersheid 1996; Willcocks 1992; Willcocks & Lester 1996a, b).

In response then, to the practical difficulties of information systems evaluation, and the apparent reluctance of managers to apply the prescribed methods, I will change

the focus of the problem. Instead of considering the nature of the systems to be evaluated, in an attempt to determine the appropriate method (it being assumed that method is appropriate), I will problematise the evaluation itself and investigate how managers in-the-world[3] evaluate information systems.

There are already many empirical studies of what managers actually do when it comes to evaluating information systems. As I have already indicated, these studies (almost without exception) describe how managers do not evaluate systems: how they do not apply the methods, how they find evaluation difficult if not impossible. A further investigation of this nature would contribute little to our understanding of the problem.

Given that this work seems to tell us only that the way managers evaluate systems is not the way they are supposed to, a different approach seems necessary. Thus, in this thesis, I am going to adopt a different means of proceeding with the problem of evaluation, not only by adopting a theoretical approach[4], but also by adopting a different way of looking at the world from that adopted by previous investigations, (which, for the most part, operate within a functionalist paradigm).

Firstly I am going to consider evaluation not as an observable management process *per se*, but as a special mode of understanding. So this will be an epistemological view of evaluation, in a sense. Secondly, my epistemological view will not be functionalist, but rather an interpretive one, in which understanding is understood as an ongoing hermeneutic process of knowing (rather than an "aha" at a particular point in time). In the case of information systems evaluation, this understanding generally takes places within the organisation. The organisation provides context to the process of evaluation. So, if the hermeneutic principle can be shown to be applicable to

[3] The concept of being in-the-world, or in a manager's case on/in-the-job will be explained in chapter four.

[4] The approach that I will adopt is described in detail in the sections that follow, along with the distinction between functionalist and interpretive approaches.

information systems evaluation, then we can see information systems evaluation as hermeneutic understanding in an organisational whole.

This then, is my objective in this research: To provide a coherent and convincing account of information systems evaluation, from a hermeneutic perspective, that bears a closer resemblance to what information systems managers experience and actually do in their everyday being-in-the-world. This is significantly different from the normative prescriptions commonly presented in the body of information systems literature, mostly because it is based on a significantly different underlying philosophy, which I shall now explore.

1.2 The Underlying Philosophy of this Research

1.2.1 Information systems and its functional roots

Kuhn (1970) has suggested that where sufficient anomalies present themselves, researchers will start looking for ways to reconceptualise the problem – new paradigms of thinking. Referring to Kuhn in respect of information systems is not unproblematic in itself, since there is difficulty in defining the discipline as "normal science" or indeed a discipline at all (Banville & Landry 1989). However, it is certainly true to say that the anomalies of practice (as opposed to prescription) in information systems evaluation and in information systems generally have led some researchers to reconsider how we do information systems research (the epistemological question) and what the object of our study should be (the ontological question).

In what now appear to be the early days of information systems research, influential researchers called for coherence in the field (Keen 1980), in the search for a cumulative tradition (Culnan 1987; Culnan & Swanson 1986). Such coherence and tradition were to be built around a scientific model for information systems research. This requirement persists in many journals and institutions, and scientific surveys remain a popular research instrument (Newsted, Huff & Munro 1998).

Gould (1980)paints for us a stereotypical picture of the scientist, reliant upon experiment and method:

> A middle-aged man in a white coat (most stereotypes are sexist), either shyly reticent, but burning with an inner zeal for truth, or else ebullient and eccentric, pours two chemicals together and watches his answer emerge in a flask. Hypothesis, predictions, experiments, and answer: the scientific method

Hypotheses, predictions and experiment (or its relation: survey) are indeed the stuff of which much information systems research was, and is, made. The real world anomalies - the problems of practice - have, however, raised questions that the scientific method has found increasingly difficult to answer. Boland (1985, p277) points out that "our attempt to apply modern scientific method to the study of information systems in organizations is not producing the steady flow of results we had expected." He goes on to diagnose the problem as follows: "There is a growing awareness that these short comings have something to do with the failure of [scientistic] social science in general." Certainly the Manchester conference at which this paper was presented produced a plethora of critique of the scientific method in information systems, and suggestions for alternative approaches (Boland 1985; Cooper 1985; Hirschheim 1984; Klein & Lyytinen 1985; Lyytinen & Klein 1985; Nissen 1985; Pettigrew 1985).

These alternatives are generally considered to be interpretivist, rather than functional. These labels derive from the model suggested by Burrell & Morgan (1979), in which there are four basic paradigms of social science research, determined by the underlying ontological, epistemological, methodological and structural philosophies adopted by the researcher[5]. Of these four paradigms, the functionalist is by far the

[5] The four paradigms are functionalist, interpretive, radical structuralist and radical humanist. While some critical theorists working in information systems might perhaps consider themselves to be radical structuralists or humanists these are not strongly emergent paradigms in the field at this point.

dominant one in information systems research, whilst the interpretive is beginning to be viewed as a legitimate alternative. I will, therefore, discuss only these two here.

1.2.2 Functionalist vs. interpretivist paradigms

Most extant research in information systems evaluation is conducted within the functionalist paradigm. That is, researchers adopt a realist ontology, a positivist epistemology, a deterministic view of human nature, nomothetic research methodologies and assume that the social order is characterised by stability, integration, functional co-ordination and consensus. This leads them to search for rational explanations of social affairs, and to adopt problem-oriented social engineering via models, methods and mechanical analogies (Burrell & Morgan 1979). Typically information systems evaluation researchers work very much like conventional organisation theorists in this way (Walsham 1993).

An alternative paradigm that can be adopted is the interpretive paradigm. In terms of this paradigm, researchers approach the field of study from a nominalist, anti-positivist, voluntarist, and ideographic point of view. They seek to understand the world at the level of individual consciousness, from within the participant's frame of reference. They are interested in emergent social processes and the intersubjectively shared meanings that constitute reality (Burrell & Morgan 1979).

It is not my intention to enter into debate here between the functionalist and interpretivist viewpoints, but rather to consider the interpretivist approach in more detail[6]. Whilst such an approach to organizational research has been gaining increasing attention as a legitimate alternative to the more traditional positivist approach (Lee 1991, Myers, 1997 #448; Trauth & Jessup 2000), this label of "interpretive" has been applied somewhat loosely to many varying kinds of research,

[6] For further discussion refer to (Boland 1985; Czarniawska-Joerges 1995; Harvey 1997; Harvey & Myers 1995; Hirschheim, Klein & Lyytinen 1996; Hirschheim & Klein 1989; Hirschheim 1984; Introna 1996; Introna & Whitley 1997b; Kaplan & Duchon 1988; Klein & Lyytinen 1985; Lee 1991; Lee, Liebenau & DeGross 1997; Mathiassen 1996; Myers 1994; Myers 1995; Ngwenyama 1996; Pettigrew 1985; Sahay & Robey 1996; Walsham 1996).

and is often a synonym for qualitative research. I would contend that we need to use this label more carefully[7]. Specifically, in considering how we might approach interpretivist research, I shall to focus on hermeneutics as a basic construct that by its very nature, underpins all interpretation. In particular, for this thesis, hermeneutics will function both as method and as the existential condition for evaluation in-the-world. A further discussion of hermeneutics is thus necessary.

1.2.3 Hermeneutics

A) The Hermeneutic Circle

Hermeneutics, as a method of the interpretation of texts, suggests that the locus of meaning of a text or situation is not, as a realist objectivist position would suggest, in the text, but rather given in the interpretation of the text. This is seen to occur within the principle of the hermeneutic circle: "The whole receives its definition from the parts, and reciprocally, the parts can only be understood in reference to a whole" (Palmer 1969, p118). Hermeneutic understanding thus operates in a circular fashion, as an interplay between part and whole, in which the understanding of the part is shaped by the whole, while the whole is again shaped by the understanding of the parts. The hermeneutic circle is the means of operation of the process of understanding. This is not just a question of procedural interest however, for, as Palmer further explains: "The circularity of understanding has another consequence of greatest importance to hermeneutics: there is really no true starting point for understanding, since every part presupposes the others. This means that there can be no "presuppositionless" understanding" (Palmer 1969, p120). Understanding can never be a matter of assessing an object in itself, with no fore-conception of what it might be, or what it might mean. Understanding is always framed by what we already understand.

[7] Butler argues that 'there is a question mark over studies that identify themselves as interpretivist and who fail to provide clear indications of the philosophical foundations on which their interpretivist perspectives are based. The same argument could be levelled against much of what passes for qualitative research in the IS field.' (Butler 1998, p298)

Given this position, hermeneutics threatens to become purely subjectivist, unable to distinguish between distortion and situated interpretation (Warnke 1987), unless we understand that interpretation is not a matter of "sticking a value on a naked object", whether that value is "subjective" or "objective". Rather, that which is subject to interpretation is encountered within the context of a particular situation, and appears *as* something. Prior to every thematic, specific act of interpretation, lies a foundation or fore-structure of understanding.

Heidegger (1953) characterises this fore-structure as one in which we are "thrown": we are unable to step back and reflect, without a stable representation of the situation (Winograd & Flores 1987). There is no neutral point of view, and no Cartesian objectivity possible. Every act of interpretation is historically situated, within the life-world of the interpreter. The concept of the life-world is "the antithesis of all objectivism", an "essentially historical concept" of "the whole in which we live as historical creatures" (Gadamer 1989, p247). The historical past is "not like a pile of acts which can be made an object of consciousness, but rather is a stream in which we move and participate, in every act of understanding" (Palmer 1969, p177). Our situatedness does not present an obstacle to "true" understanding, but is rather the horizon from which understanding first becomes possible. True interpretation is thus situated within a history, within the historicity of experience that is the life-world.

B) Phenomenological[8] Understanding

The concept of the life-world suggests that we exist, or have our being, in-a-world, in a situation where things can hang together (part and whole) as meaningful. Our very consciousness is "historically operative": all understanding is "projective" in that "in every case a person who understands, understands himself (sich versteht), projecting himself upon his possibilities" (Gadamer 1989, p260). Thus hermeneutic principles are not only at play in specific acts of interpretation, but in every act of understanding. Whereas hermeneutics understood only as the interpretation of texts "inappropriately narrowed the horizon to which understanding belongs" (Gadamer

[8] The term 'phenomenological' in used in this thesis in the sense of Heideggerian existential phenomenology, rather than in the Husserlian sense.

1989, p261), hermeneutics as phenomenological understanding is concerned with the grasping or understanding of the phenomena of everyday practices and discourse. Hermeneutics as phenomenological understanding is what we all do all the time. It is this understanding which opens up the clearing in which we encounter beings as beings. It is this understanding that makes our existence possible (Dreyfus 1991). Thus hermeneutics is "that fundamental announcing function through which *Dasein*[9] makes known to himself the nature of being. Hermeneutics as methodology of interpretation for the humanities is a derivative form resting on and growing out of the primary ontological function of interpreting" (Palmer 1969, p131).

This then is hermeneutic phenomenology; a way of understanding our own understanding as being co-original with our very existence. Understanding is embedded in a context in which the possibility of words and language make meaningfulness itself possible. Specific understanding, or interpretation, is rendering explicit on the basis of a pre-structure of understanding.

The pre-structure of understanding, always already interpreting and embedded in the world, obviates the model of an interpretive situation in which subject interprets given object: "Understanding is not conceived as a process of man over and against an object, but the way of being of man himself" (Palmer 1969, p163). Gadamer suggests that in moving beyond this subject-object schema, that which is disclosed in interpretation is "something which acts on our understanding in presenting itself" (Palmer 1969, p212).

This may present a problem if in interpretation we grant normative authority to that which is interpreted. What external standards might apply in the granting of this authority? Gadamer proposes a dialogic structure of understanding to resolve this problem, through which understanding can represent a new unity of judgement. This understanding is continuously dialogic, and there can be no final or true

[9] *Dasein* is Heidegger's term for characterising the way of being of human beings. This concept will be described further in chapter four.

interpretation. Any unity of judgement is always a provisional judgement, subject to change, through further dialectic consideration.

C) The Dialogic Structure of Understanding

In terms of such a dialectic, "the horizon of meaning within which a text or historical act stands is questioningly approached from within one's own horizon; and one does not leave his own horizon behind when he interprets it, but broadens it so as to fuse it with that of the act or text… The dialectic of question and answer works out a fusion of horizons" (Palmer 1969, p201). In other words, understanding involves the revision of the initial position of the interpreter, as it was in entering the hermeneutic circle, through a consensus of meaning with that which is to be interpreted. Such fusion is based on, but also alters fundamentally, the very horizon or historicality within which the interpreter has her being. This is the applicative moment of understanding - generating meaning as a product of the integration of horizons. It is applicative because understanding always includes application to the present (the world-in-which-we-be): it is bringing what is essential in that-which-is-to-be-understood into our present self-understanding. Our present understanding applies for that moment and, since interpretation is always ongoing, always has the possibility of revision. True understanding can never be dogmatic.

The consideration of dialogic interpretation extends hermeneutics beyond its original formulation as the proper understanding of texts to a philosophy of understanding in general; understanding that is historical and dialectical. A particular hermeneutic act of interpretation is made specifically possible on the background of this understanding, and as a thematic statement is a specific instance of such understanding.

If understanding in general is hermeneutic, then understanding in particular must also be so. Thus hermeneutics can indeed be seen as the existential possibility for evaluation in-the-world (the life-world) where evaluation is a special case of understanding. This I will explicate in more detail later in this thesis. However, this is not the only reason for this attempt to account for hermeneutics. I suggested above

that hermeneutics will function also as method in this thesis, as the means of proceeding in my attempt to understand information systems evaluation.

The question of method arises because, in discussing information systems evaluation, or attempting to account for it, I am engaging in social science, as information systems are socio-technical systems, and the process of evaluation is a process in which managers (as social beings) engage. Furthermore, from an interpretive perspective, the social sciences have what Giddens characterises as a "double hermeneutic" structure (Warnke 1987, p109). Not only does the research itself consist of acts of interpretive understanding, but also its focus is historical and dialectical understanding.

Therefore in this study, which is a hermeneutic study of information systems evaluation I will endeavour to show not only that information systems evaluation is more usefully interpreted as hermeneutic understanding, and but also that the study itself is a process of hermeneutic understanding. That is, a hermeneutic approach must apply to the study as well as to the subject matter of the study. This hermeneutic role of methodology needs further clarification.

1.3 Hermeneutics as Method

The early idea of hermeneutics, as conceived by Dilthey, was as a methodological basis for the *Geisteswissenschaften* (Palmer 1969). This is, however, superseded by Gadamer's philosophical hermeneutics, which calls the status of method itself into question. In fact, as Palmer (1969, p163) points out :

> The title of Gadamer's book [Truth and Method] contains an irony: method is not the way to truth. On the contrary, truth eludes the methodical man. Understanding is not conceived as a subjective process of man over and against an object, but the way of being of man himself; hermeneutics is not defined as a general help discipline for the humanities but as a philosophical effort to account for understanding as a ontological - the ontological - process in man.

Functionalist social science has a "method-ism" mindset, which proposes an objectivist algorithmic metaphor: Method → Understanding. Such method consists of tools and techniques provided by the method. The hermeneutic perspective, however, tells us that all understanding takes place within a context. It is therefore logical that we can understand the tools and techniques of the method itself only through a proper understanding of the context,. That is, in terms of hermeneutic philosophy, Understanding → Method (Introna & Whitley 1997a). Introna and Whitley further point out that this is itself a hermeneutic process, in that "once we have an understanding that allows us to use method we will understand also the limits of the methods, which will allow us to use the appropriate methods, which will improve understanding of the methods, and so forth" (Introna & Whitley 1997a, p34).

Any research methodology appropriate to a hermeneutic approach must therefore allow for a world in which meaning emerges from context, and in which the research itself will presuppose a world and make sense only against it. Such a methodology, rather than being decontextualised and generalisable, must allow for new possible context, and new possible understandings to emerge.

Since the word "methodology" is value-laden, implying decontextualised, generalisable and top-down methods, I would prefer to suggest that in this research I have adopted an "approach", a dialectial hermeneutic approach, rather than a methodology *per se*. This requires further explanation.

1.3.1 A dialectical hermeneutic approach

Coyne (1995, p54) explains that conventionally, "in dialectic, truth emerges or is disclosed through the interaction between opposites, as in a dialogue between two people". Thus, dialectic thought can be characterised as oppositional thought: Considering a object in terms of its opposite can lead to a deeper understanding of nuance and meaning. This interpretation, however, of dialectic as adopting opposite logical perspectives, "misses the identification of [dialectic] thought as representing a fundamentally different view of the world – the dynamic, indeterminate, pre-technological view" (Coyne 1995, p58). Hegel's dialectical principle, on the other

hand, “is the principle whereby apparently stable thoughts reveal their instability by turning into their opposites and then into new, more complex thoughts” (Houlgate 1991).

The Hegelian dialectic suggests that on a fore-structure of understanding, in which we are thrown, ideas and their opposites counteract against each other, until a new understanding emerges. This can only happen however, if we attend to thinking and “let it speak”. Gadamer expresses this in hermeneutic terms as follows: “There is really a polarity of familiarity and strangeness on which the task of hermeneutics is based, although this is not be understood psychologically…; but rather truly hermeneutically, i.e., with respect to what is said: the language with which what is handed down speaks to us, the saying which it says to us” (Gadamer 1988, p73). In a dialectic approach, the text poses the question to which I respond, on the basis of my belonging to the world in which the text is. Thus a dialectic hermeneutic approach is not simply the refining of opposites, but a dialectic between oneself and the text, and the elements within the text.

So what do I really mean when I say I have adopted this dialectic hermeneutic approach? Let us consider that, in summary, understanding “involves a transformation of the initial positions of both text and interpreter in a fusion of horizons or consensus over meaning that reveals new dimensions of *die Sache”* (Warnke 1987, p107). In this research I have indeed found my initial positions on various aspects of the research transformed, as a have considered them. For example, the functionalist view of information systems evaluation, with which I came to this research, was revealed, on further reflection and exposure to interpretive literature, to be inadequate. Furthermore, many of these aspects of the research are themselves dialectical, as there as opposing ways of considering them (for example objective versus subjective evaluation), and dialectic positions which can be reached (for example, evaluation as hermeneutic resolution). So the approach is dialectic, in consideration of ideas which are themselves dialectic. The double hermeneutic is also a double dialectic.

1.3.2 Method in interpretation

Having earlier rejected the idea of methodology as applicable to this thesis, the concept of the dialectic hermeneutic approach draws me round to consider a requirement for method in at least some sense. A dialectic approach is importantly not a licence for arbitrariness. I am not at liberty to impose on the text any meaning that I may choose. The nature of dialectic requires that I engage with the text, rather than impinge upon it. Nonetheless, as Madison (1990, p27) points out, while that which expresses itself in the text has ontological primacy, or at least co-primacy, with my own understanding (the circle in operation), it is "the subjectivity of the interpreter himself which has methodological primacy". The interpreter must be able to be held responsible for his interpretation. Thus Madison suggests a requirement for method in interpretation. Such method is normative, or an aid to rational judgement, where rationality equates to the possibilities of giving reasons for the judgements one makes. Whilst "one cannot become a good interpreter simply by mastering a certain method" there is nonetheless a requirement for a "set of interpretive principles [to be] called method, if by method we mean a system whose purpose it is to orient action" (Madison 1990, p29).

Understanding method in this sense, Madison then advances some "likely candidates" for methodological principles appropriate to a phenomenological hermeneutics (Madison 1990, p29). Madison's principles apply in particular to the interpretation of "a work". In a broader endeavour such as this thesis which attempts to understand a particular issue of importance in information systems, and the body of literature relating to that issue, it is necessary to extend these principles in some cases. In the list that follows I briefly outline Madison's principles (mostly through direct quotation), and indicate by the use of parentheses where I have extended or paraphrased these.

a) *Coherence*: The interpretation must be coherent in itself, it must present a unified picture and not contradict itself at points. (The thesis must be consistent in terms of its theoretical base and central themes.)
b) *Comprehensiveness*: In interpreting an author's thought, one must take account of this thought as a whole and not ignore works of his which bear on

the issue. (The thesis must be comprehensive in the breadth of its sources and use of primary as well as secondary literature.)

c) *Penetration*: A good interpretation should bring out a guiding and underlying intention in the work. (The thesis should not reach obvious or superficial conclusions.)

d) *Thoroughness*: A good interpretation must attempt to answer or deal with all the questions it poses to the interpreted text. (The thesis must deal with the question as posed in this opening chapter in a thorough way, dealing with both argument and counter-argument in its exploration of the issues.)

e) *Appropriateness*: The questions the interpretation deals with must be ones which the text itself raises. (The question at hand must be a "real" question, of import in practice, since the information systems evaluation is a phenomenon of management practice.)

f) *Contextuality*: An author's work must not be read out of context. (The theoretical basis of the thesis must provide understanding appropriate to the problem at hand; the explication of the issue must be recognisable.)

g) *Agreement* (1): One must not normally say that the "real" meaning of what an author says is something quite other than what he actually does say.

h) *Agreement* (2): A given interpretation should normally be in agreement with the traditional and accredited interpretations of an author. This principle must not be blindly adhered to.

i) *Suggestiveness*: A good understanding will raise questions that stimulate further research and interpretation.

j) *Potential*: A given interpretation should be capable of being extended.

(Madison 1990, pp29-30)

If, in the final instance, I am able to demonstrate the application of these principles in this thesis, then I believe I will be able to validate my claim to having taken a dialectic hermeneutic approach. The claim will be seen to be genuine not because I have applied a set of rules, but because I will be able to show that I have proceeded in a norm-governed way, establishing the application of the norms as I proceed. My own sense making will not have been arbitrary or whimsical. Rather, there will have

been a congruence and integrity between the content and the process of my work, in the form of a double hermeneutic dialectic.

I will undertake the application of these principles to this thesis in the concluding chapter. In the interim however, I am also faced with the dilemma of presenting the body of this research in such a way that this integrity is constantly maintained, rather than claimed *ex-ante* and *ex-post*.

1.4 Presenting the Research

Conventionally a thesis would proceed as follows: An introductory chapter would be followed by one or more literature review chapters. A research methodology chapter would then explain how the research was carried out, and subsequent chapters would discuss the findings of the research, and analyse them in terms of the literature reviewed. A final chapter would summarise, and provide some suggestions for further research.

This mode of presentation is entirely congruent with the scientific method. However, as I pointed out previously, at least since 1984, researchers in information systems have made a sincere attempt to metamorphose an epistemological butterfly from the crystallised and restraining pupa of scientism. They have embraced qualitative research, process theory, contextualistism, hermeneutics, interpretivism, critical theory, postmodernism, not necessarily in this order. They have done this in a fragmented way that makes information systems, from an epistemological point of view, increasingly demanding, particularly for those new to the field. To reformulate a popular view of the field, many butterflies are blooming, and many resemble each other in sometimes distinct and sometimes subtle ways.

This is not to criticise the profusion of epistemological and methodological thought in information systems: the many interesting insights that the pluralistic approach has brought defeat such criticism. Still there is a curious phenomenon of this metamorphosis: that on all of the interpretive butterflies there still appears a trace of the “scientistic” pupa: we continue to present our research in highly structured forms,

proceeding from theory to research methodology to results and interpretation[10]. In this way, students, in particular, are expected to package and label the work that has gone into a thesis, tidying up the many sources of literature into a coherent whole, placing the emphasis of the research methodology on the empirical research, and presenting all of this as given, neatly boxed and preserved in formaldehyde, for posterity. An original contribution.

None of this bears any resemblance to the real work of a PhD thesis, or not this thesis at any rate. Most importantly, the literature is not even available as a coherent whole. As Gadamer expresses (Gadamer 1975, p169) "nothing that needs interpretation can be understood at once". The hermeneutic theory of evaluation is not really the beginning of my work, nor the end either, but a staging post in a continuously recurring journey of interpreting an ever-expanding body of literature by referencing to its individual parts.

This is of course obvious if we recall Giddens's caveat about the social sciences being a double hermeneutic. If understanding (a special case of which is the object of my study) is hermeneutic, then my own process of understanding is itself hermeneutic. To present the understanding as an already coherent whole is to deny the very basis of my own argument. Thus, the only way that I can maintain integrity in this text is to ask you to join me in a reconstruction of this journey of mine: the turns I have taken around the hermeneutic circle, the insights gained with each iteration and the coherence that has emerged, to achieve some reasonably cogent explanation of information systems evaluation. Thus the remainder of the thesis proceeds through successive understandings or interpretations of information systems evaluation as I uncovered these. In the following section I will outline both the structure of the thesis, and the successive interpretations of evaluation that it provides.

[10] As Fitzgerald and Howcrowft (1998) point out: 'The interpretivist tragedy is to fail to recognize that research communication in the traditional form is inevitably positivist.' (p323)

Before I proceed with this, it is necessary to note some important issues relating to this method of presentation. Firstly, the presentation is to some degree confessional (Schultze, Myers & Trauth 2000), or at least this outline of it is, in that I am laying bare the process of my understanding to you the reader, and confessing the provisional and inadequate nature of my account at any one point in the thesis (including the conclusion, as you shall see). At the same time, I am very much aware that no confessional account is ever truly "true", and I must confess the inadequacy of my confession: The process of understanding you will see here is constructed and to some degree false. To render the entire process, warts and all, would be to produce a document not just bordering on but completely unintelligible. So this process is as honest as is possible within the requirement of comprehensibility.

Secondly, the process of understanding in which I have engaged has - when viewed analytically and in retrospect - an overarching logic. It did not possess this logic from the start. It was not an already coherent whole. Yet in the interest of logic and coherence, it makes sense to present to the reader not only the process as an evolution, but also the argument as a logically structured unity. Thus once I have presented the structure of the thesis and progress of my understanding I will tie the argument together with a diagrammatic representation of the whole.

1.4.1 The thesis structure

The structure of this thesis is as follows:

In chapter one I have outlined information systems evaluation as problematic, and briefly positioned current research in information systems evaluation in a functionalist paradigm. I have explained that my research proceeds from hermeneutic perspective, defined what I mean by "hermeneutic," and suggested how this underlying philosophy affects the approach taken in the research. This research is seen to illustrate a "double hermeneutic": it is itself a hermeneutic interpretation of evaluation as hermeneutic interpretation. As a consequence of this double hermeneutic, I have outlined the idea of the thesis as an iterative journey transversing the hermeneutic circle.

In chapter two, I shall explain how I came to this problem from a functionalist perspective and define what I mean by evaluation. Here I shall critically review a major portion of the literature on IS evaluation, thus giving a picture of IS evaluation from the functionalist perspective. I shall then outline difficulties of the functionalist approach to IS evaluation, by way of describing the paradoxical practice that prevails. At this juncture the understanding of IS evaluation is as follows:

Evaluation of information systems can be understood if we consider different types of systems requiring different kinds of evaluation. This gives us a range of methods to apply. However, it seems that managers do not often apply these methods. Therefore, more discipline on the part of managers, in the application of more rigorous methods, is required.

In chapter three, I shall explain how I came to see that an alternative to the functionalist paradigm might exist. I shall then explore the ideas about evaluation that became available as a result. These are to be found in Hirschheim and Smithson's (1988) continuum of rational–subjective/political evaluation and a small body of interpretive research. Thus as an alternative to the previous understanding, this second turn about the hermeneutic circle will point out that:

A political/subjective understanding of IS evaluation goes some way towards explaining paradoxical practice: because information systems are social, subjective and political objects with a technological component, managers do not apply rational methods of evaluation, but rather approach evaluation from a subjective perspective. Evaluation is an essentially political process that allows for objectivity only for the purpose of ritual in the service of political ends.

In chapter four I shall suggest that the both the objective-rational and subjective-political archetypes are inadequate as a means of understanding IS evaluation. A way to get beyond this is to use the dialectic concept of *Dasein*, in terms of which I shall describe the evaluator as being-in-the-world. With reference to the Heideggerian concepts of being-in-the-world, *Dasein* and other beings, thrownness and the

lifeworld (Erlebnis), I shall describe the process of evaluation by painting a picture of what might happen as a manager evaluates a system or prospective system. Thus we shall see that:

Rather than being a decision maker, a manager is in-the-world. She evaluates systems in-order-to get-the-job-done. She does this in-the-world in which she is thrown, rooting her understanding in the already present and significant whole of her *Erlebnis*. Evaluation of an information system by a manager is the appropriation of meaning about the system, and can be effective if the manager skilfully understands the situation and is aware of her prejudices, whilst always remaining open to revising them. She must, furthermore, be able to express appropriately her use of both pragmatic judgement and additional information where this has served to articulate distinctions about the situation.

Having reached a dialectic consideration of evaluation on the part of an individual manager, I now, however, face a requirement to consider a further practical issue: how do groups of managers (rather than a single manager) evaluate a system? Therefore, in chapter five, I shall explore evaluation as understanding in the organisational context, through the concept of organisational learning, as described in the mainstream organisational learning literature. This literature, however, is rooted in a functionalist cognitive paradigm, and therefore provides us with theories of learning-in and learning-by the organisation, which are both irreconcilable and unsuitable for understanding evaluation in-the-world. Further exploration of notions of knowledge as embodied (or action-oriented) and encultured (or achieved through socialisation) leads me to see that meaning is constructed through narration on a background of shared social understanding. This notion is congruent with the conception of the manager who evaluates information systems in-the-world. Therefore at the conclusion of this chapter I will contend that:

Rather than being a decision maker, a manager is in-the-world. She evaluates systems in-order-to get-the-job-done. She does this in-the-world in which she is thrown, rooting her understanding in the already present and significant

whole of her *Erlebnis*. Evaluation of an information system by a manager is the appropriation of meaning about the system.

In the organisational context, managers can come to a common evaluation about an IS, because they collaborate in communities of practice. This implies that narrative, situated, pragmatic knowledge will be most useful in evaluation, which is a process of encultured knowing in-the-organisation. Evaluation happens in the course of skilful conversation.

Thus I have at this point derived a two-part definition of information systems evaluation, one that addresses both the individual and organisational processes of understanding that can lead to an assessment of a system. It is certainly necessary to understand evaluation at both of these levels, and yet the connection between the two seems problematic. Whilst the account of the involved, skilful manager rings true, the idea of evaluation as a skilful conversation may be less congruent; organisational conversations very often appear less than skilful. There is no simple extrapolation from individual to organisational skill. Therefore, in chapter six, I shall explore what it is that distorts meaning in the organisational context. Following Foucault, I shall suggest that it is the network of power relations characterising both the organisation and the meaning construction process in the organisation that impinges on evaluation as a truly skilful process. This will extend my understanding of evaluation as follows:

Rather than being a decision maker, a manager is in-the-world. She evaluates systems in-order-to get-the-job-done. She does this in-the-world in which she is thrown, rooting her understanding in the already present and significant whole of her Erlebnis. Evaluation of an information system by a manager is the appropriation of meaning about the system.

In the organisational context, managers can come to a common evaluation about an IS, because they collaborate in communities of practice. This implies that narrative, situated, pragmatic knowledge will be most useful in evaluation, which is a process of encultured knowing in-the-organisation. Evaluation happens in the course of skilful conversation.

However, in the organisational context it is also the case that conversations as generators of meaning are never held outside of power. Any attempt to separate power and knowledge is futile since the production of knowledge is political all the way down. Power is a network of force relations that cannot be escaped. Systems evaluations as conversations cannot take place outside of a regime of truth. In the organisation this regime of truth can be characterised as rationality, or Gestell.

This is a more satisfactory account of evaluation as we see it in-the-world; one which accounts for paradoxical practice within the particular regime of truth of the organisation. At this point however, it may be argued that I have reached an impasse in transversing the hermeneutic circle, one which leaves managers with no means to proceed, no room for action, because they cannot act outside of *Gestell*. Action appears powerless in the face of power, and while I may have accounted for evaluation in-the-world, I provide no answer to the manager's dilemma, "so how do I act now?".

As a means of proceeding, I shall therefore explore in chapter seven, a post-dualist view of action as both constituted by, and constituting structure (including power), through Giddens's structuration theory. Pushing structuration theory to its post-

dualist limits, I shall point out that there is, even in situations of less power (power-less-ness) the potential for action. Having thus suggested how action can proceed, I shall further explore the question of how action should proceed through a brief discussion of ethics. The requirement to understand both the *can*, and the *ought* of action, within the network of power is explained, as both require a form of deconstruction or dissemination: strategies for local action. Thus, incorporating the post-dualist perspective, we see that:

Rather than being a decision maker, a manager is in-the-world. She evaluates systems in-order-to get-the-job-done. She does this in-the-world in which she is thrown, rooting her understanding in the already present and significant whole of her Erlebnis. Evaluation of an information system by a manager is the appropriation of meaning about the system.

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The only means for action, and in particular for ethical action, within this regime of truth, is for managers to employ strategies for local action, in the form of improvisation and deconstruction of the evaluation process itself, as it is constituted by Gestell.

In chapter eight I shall get off the hermeneutic circle, as it were, and attempt to apply this understanding of evaluation to some suggestions for practice. That is I shall, whilst avoiding any suggestion of normative prescription, review the implications of my journey in order to provide some suggestions for an approach to an ethical, deconstructive evaluation conversation.

Finally in chapter nine, I shall, as promised above, review my own process of understanding in this thesis, and assess against the principles suggested by Madison, the claim that this has been a good process of hermeneutic understanding in itself.

1.4.2 The logical structure

The above outline has described the progress of my hermeneutic journey as it is laid out in the remainder of thesis, and as it will be progressively encountered by the reader. This structure is not conventional, but important I believe to maintaining congruence between the process and content of the work.

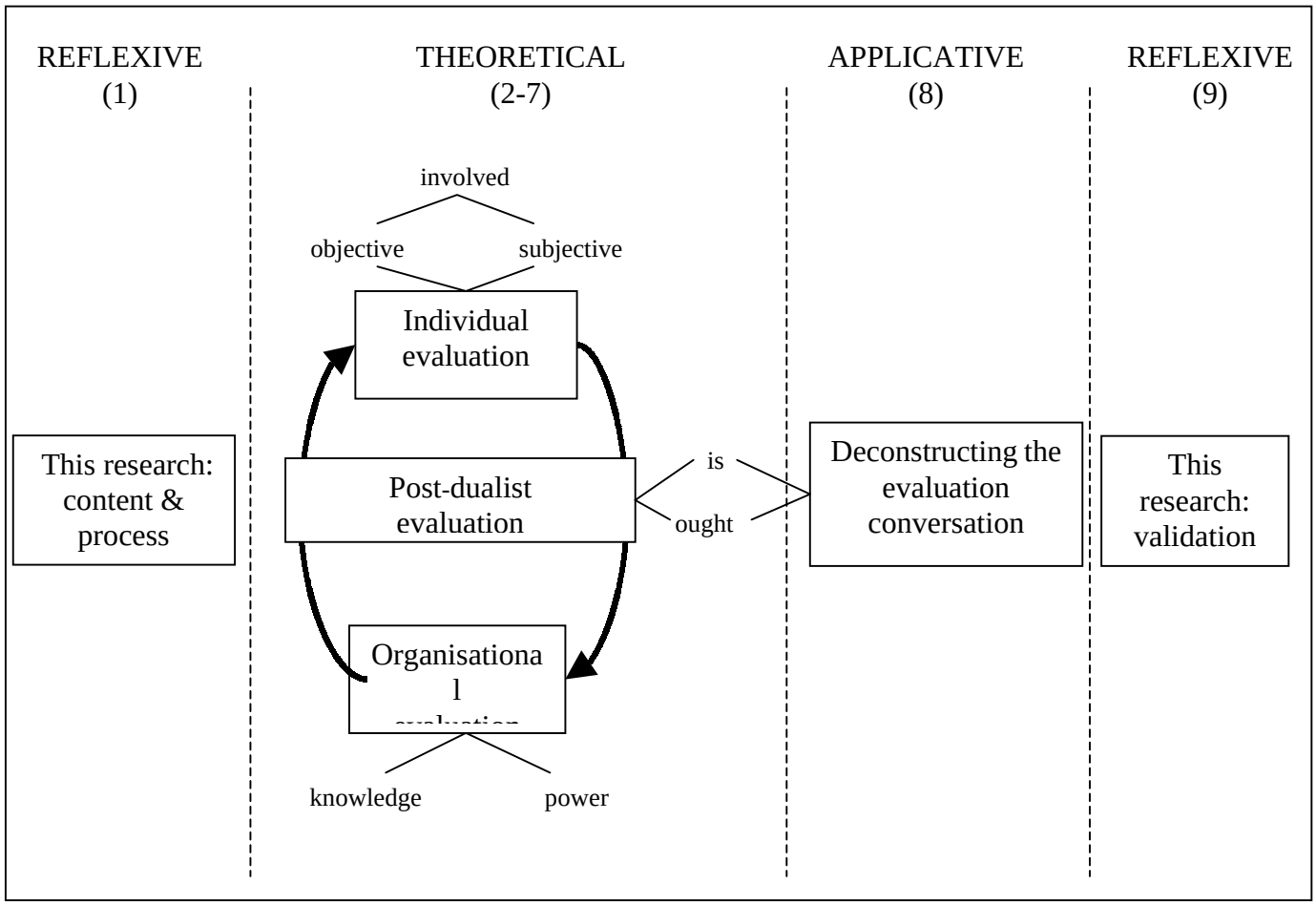
At the same time, as I pointed out in §1.4 there is also a logical structure to the thesis, a view of which improves the comprehensibility of the work as a whole. This logic may be presented diagrammatically as in Figure 1.

The logical structure of the thesis is firstly that there are three distinct elements of the thesis, the reflexive, theoretical and applicative. Chapters one and nine are reflexive in that they reflect on the work and process of the thesis itself. Chapters two to seven are theoretical in that they draw on various theories (hermeneutic horizons) in an attempt to understand evaluation. Chapter eight is applicative in that it attempts to apply the hermeneutic understanding gained from the theory to practice.

Secondly, within the theoretical element of the thesis, there are three major themes. The first of these is evaluation as a process of understanding at the individual level. In chapters two, three and four, I explore this process from the objective/functional, subjective/interpretive and involved/dialectic perspectives respectively. The second theme is evaluation as a process of understanding in the context of the organisation.

This I explore in chapter five through a consideration of understanding as a skilful conversation generating knowledge, and in chapter six through a consideration of the effect of power on that conversation.

Figure 1: The logical structure of the thesis



The third theme emerges as a requirement of having dealt with the first two. I need to reconcile the individual and organisational views of evaluation, and this I do through a consideration of post-dualist theory (how evaluation is), leading to a requirement for deconstructive evaluation (how evaluation ought be), in chapter seven. In chapter eight that theory is applied to suggestions for practice.

1.5 Conclusion

This chapter has introduced both the content and process of the thesis, and in particular the philosophical perspective that underlies both of these. The remainder of the thesis must serve to convince the reader of the veracity of the claims made here.

2 Information Systems Evaluation: The Rational Perspective

Beginning with the mainstream functionalist view of information systems evaluation, we see that many different types of information systems evaluation methods have been developed, ranging from straightforward cost benefit analysis to more complex methods. The latter have been developed because there are multiple types of system, each of which requires a suitable method of evaluation. Although each of these methods has its own conceptual difficulties, far more troublesome is the paradoxical practice which prevails: managers, are in need of methods to help them with evaluation, but fail to use these methods.

2.1 Introduction

This chapter starts the first tun about the hermeneutic circle of understanding information systems evaluation. In this chapter I shall explain how I came to this problem from a functionalist perspective based on the previous research. The body of the chapter is then used to review critically a major portion of the literature on IS evaluation. This review provides a picture of IS evaluation from the functionalist perspective. Even within this perspective, difficulties emerge, both conceptually and practically. The chapter concludes with a description of the paradoxical practice that prevails and an assessment of IS evaluation as conceptualised at this point.

2.2 Approaching the IS Evaluation Problem

In 1994 I conducted a study to establish how firms assess the success of BPR-type activities. I proposed that there are three critical areas in which measures of performance may be observed; customer, process and shareholder. These were termed “benefit types”; customer-focused, process-focused and shareholder-focused (Whittaker 1994). This proposition was then validated by interviewing senior managers at 18 firms which were, or had been, involved in BPR projects. This research was undertaken from an entirely functionalist perspective, on the understanding that evaluation itself is conducted in a formal manner, using defined tools and techniques. As Hirschheim and Smithson (1988) point out, where information systems’ functions and activities are viewed from a positivist perspective

they will be seen as deterministic and overt, and the means of evaluation will be based on tools and techniques which are as "scientific" as possible. This viewpoint may be termed "analytical".

In evaluation, as in research, the positivist viewpoint will embrace quantitative and "objective" measures (Easterby-Smith, Thorpe and Lowe 1991). Thus an evaluator with an analytical perspective focuses on analysing the value of a process through a quantitative mechanism. At the end of the 1994 study, and the beginning of this research, I held just such a functionalist, analytical perspective. In terms of such a perspective, evaluation is the process of weighing up the merit of or contribution made by something (Remenyi & Sherwood-Smith 1995). Evaluation seeks to come to an understanding about value, typically by measuring various attributes of the object to be evaluated. IS evaluation research is predominantly based on this kind of definition.

Smithson and Hirschheim (1998) identify five different levels at which evaluation may be performed, namely macro (national or international), sector, firm, application and stakeholder. From the point of view of the body of information systems evaluation research, work at the first two levels (macro and sector) tends to be evaluative in itself. That is the research itself *is* evaluative, of the general impact of information technology on productivity and market structures. At the firm, application and stakeholder levels, the focus of the research switches. Researchers are interested not necessarily in establishing the value of systems at these levels themselves, but rather in how this is done, within the firm. The research itself is *about* evaluation methods and practice. Broadly speaking we can then distinguish the former (which is generally referred to as the productivity paradox literature) from the latter (which I refer to as research about evaluation in firms). In the sections following I shall discuss each of these, with the emphasis on the latter, since, as I noted in chapter one, this thesis in the main addresses the issue of how managers can deal with the "thorny problem" of evaluation in the firm.

2.3 The Productivity Paradox Literature.

A growing concern about the amount of money invested in information technology in the economy as a whole has led to a thread of research that seeks to compute the value, or return on investment, derived from the use of information technology. Initial evidence found that the enormous investment in information technology had apparently not led to any increase in productivity (Loveman 1988; Roach 1987). The literature that attempts to address, or in many cases refute, this paradox has become known as the "productivity paradox" literature (Brynjolfsson 1993).

This literature is often concerned with trying to find evidence that the productivity paradox is an illusion rather than a reality. Certainly several authors have managed to produce figures that contradict the paradox, providing evidence that information technology does, in fact, contribute to productivity, or profitability, or growth (Barua, Kriebel & Mukhopadhyay 1995; Brynjolfsson & Hitt 1993, 1994; Mukhopadhyay, Kekre & Kalathur 1995; Nault & Dexter 1995; Weill 1992). Overall, what has emerged is a set of contradictory results, which lead to no overall conclusion about the productivity paradox, one way or the other.

The most comprehensive set of explanations as to why this research has produced such conflicting results is that proposed by Brynjolfsson (1993), who suggests that there are four possible reasons why computers have not measurably improved productivity. These are:

- measurement error as a result of unreliable statistics, aggregation of data, and difficulties in defining what is to be measured;
- time lags in the impact of information technology investments;
- redistribution of benefits among firms, with no overall benefit to the economy;
- mismanagement of information technology by managers, exacerbated by the lack of explicit measures.

Further studies suggest that each of these reasons may, in particular circumstances, be applicable. For example, by measuring at the firm level and accounting for time lags, Brynjolfsson and Hitt (1994) find that investment in computers correlates with output

growth. Other authors too find positive results at firm level, and within firms (Barua, Kriebel & Mukhopadhyay 1991; Mukhopadhyay *et al.* 1995; Nault & Dexter 1995). This suggests that the first and second reasons may account for the paradox.

Jurison (1996) suggests that the benefits are redistributed along the value chain, to supplier and customer, in support of the third reason. Willcocks (1994; 1996a) provides examples of mismanagement and poor evaluation (the fourth reason). As a result, any study that provides measures of a return or lack thereof must be carefully assessed in the light of the above issues. The numbers alone might not tell the whole story.

In a later paper, Hitt and Brynjolfsson (1996) argue that although productivity, consumer value and business profitability are related, they are ultimately separate questions. This means that empirical results about information technology value depend heavily on which question is being addressed and which data are being used. These authors also point out that there is no inherent contradiction between increased productivity, increased consumer value, and unchanged business profitability. These authors present empirical evidence that information technology has increased productivity and created substantial value for consumers, but provided no supranormal business profitability. Such profitability would require barriers to entry: structural differences that could give sustainable advantage (Clemons 1991; Clemons & Row 1991; Clemons & Weber 1990).

Thus emerging results suggest that information technology investment frequently does not provide financial benefit to the investing firm. Where firms do obtain benefits from investment it appears to have been in many cases serendipitous and, in fact, the economic theory suggests that it should not on balance be possible. None the less, investments in information technology are made, and must be made. Therefore, managers, who must act in investing in information technology, often ignore this literature, because it provides conflicting results. Although this literature points to a need to reduce the distorting effects of poor evaluation methods (Willcocks 1996b), it provides little guidance to managers as to how they might do this within their firms.

2.4 Research about Evaluation in Firms

Within the firm, managers might seek to evaluate the value of information systems at firm, application or stakeholder levels. Most frequently however, evaluation is concerned with "the introduction of a new information system" (Smithson & Hirschheim 1998, p161). Thus a distinction is often made between pre-implementation evaluation, in which the potential value of the system is assessed in order to decide whether the system should be developed, and post-implementation evaluation, in which the realised value of the system is assessed (Remenyi, Money & Twite 1995) in order to ascertain whether the funds spent represent a sound investment (Remenyi & Whittaker 1996).

In both of these kinds of evaluation however, the intention is to "draw the worth out" (Farbey, Land & Targett 1999), even though the purpose of doing this might differ. This "worth" is established by understanding the full range of costs and benefits, both quantitative ("hard") and qualitative ("soft"). This "will almost certainly not be obvious and it may require considerable effort to discover what they are" (Farbey *et al.* 1999, p206). In fact, such considerable effort is required that evaluation is, as I have already noted, generally considered to be difficult and problematic.

Still, evaluation is considered to be sufficiently important to be worth pursuing in the face of difficulty. As noted above, this is mostly because evaluation is seen to be an important part of the information systems decision-making process (Farbey *et al.* 1999). A good evaluation process, which leads to good decisions about project initiation or continuation, is seen as a means to ward off project failure, which is distressingly common (Hochstrasser & Griffiths 1991). If the costs and risks of the project can be properly understood (Farbey *et al.* 1993, 1999; Willcocks 1994), then it should be possible both to measure the value of the system to the firm, and plan appropriately for its implementation (Hawgood & Land 1988; McFarlan 1981). More broadly, evaluation if conducted both before and after implementation, should provide a feedback function to the firm, thereby contributing to organisational learning (Etzerodt & Madsen 1988; Farbey *et al.* 1993).

Thus research into evaluation in firms is concerned with how managers should and do approach this difficult problem of establishing the worth of a system, or portfolio of systems. Because such worth may depend on both "hard" and "soft" factors, there is a variety of methods available, each having its own distinctive characteristics. Common to all of the methods, however, is the objective of establishing the real, measurable value of the system object, as it is, or will be, in the firm, for the purpose of managing outcomes. These methods are thus basically functionalist in their approach.

As with any body of research, there exists research about the research: a number of reviews and methodologies have been published, some of which categorise these methods (Canevet 1996; Farbey *et al.* 1993; Powell 1992; Serafeimidis 1996). For the purposes of this discussion, however, I shall categorise the methods ranging loosely from "hard" to "soft". Therefore I shall discuss, in this order, cost-benefit analysis, expanded cost-benefit analysis, contingency, and user information satisfaction methods in the sections following.

2.4.1 Cost-benefit analysis

Cost-benefit analysis (CBA) is a set of techniques for computing the return on individual projects or sets of projects within firms. It is based on the financial theory of discounted cash flow, which measures all costs and benefits in terms of amounts of money. Various financial measures can be computed given these inputs. Only expenditures and savings that can be directly measured financially can be included in the calculations.

It is generally presumed that "pure" CBA was entirely suitable and widely used when information technology was used for automation purposes, resulting in cost displacement or cost avoidance (Canevet 1996; Farbey *et al.* 1993; Parker & Benson 1988; Remenyi *et al.* 1995; Serafeimidis *et al.* 1996; Willcocks 1992). At that time, it is believed, CBA served the purpose of evaluation very well. However, as the role of information technology in the organisation has changed from one of automation to one of information and transformation, CBA has been left behind, as it were, in the

search for further benefits. Nonetheless, CBA is seen as still being useful for assessing costs and benefits that are tangible and financial. As will be seen in the next section, many authors believe it can be extended to encompass intangibles as well.

At this point, Land (1976) makes salutary reading. In the mid-seventies - some time before decision support and management information systems, which are commonly understood to have "informated" the organisation (Remenyi *et al.* 1995) - he wrote as follows:

> There are some similarities between information systems projects and research projects. In both cases the outcome in the sense of benefits for the organisation are not directly predictable, and the decisions have to be subject to informed estimates of a number of attributes. Although a substantial effort has gone into the attempt to devise formal methods of evaluation and decision making, the impact of these methods on the actual decision taken has up to this time been trivial. (Land 1976)

It seems as if CBA has had a questionable usefulness all along. At a conceptual level there are several objections that may be raised.

The first of these relates to the kinds of measures that are used by organisations that claim to be using CBA. Very often simplistic measures such as payback (the length of time for the amount invested to be recouped) and non-discounted return on investment (ROI) are used. These are generally considered to be inadequate as they neglect both the time value of money, and the risk inherent in investing (Dué 1989). The net present value (NPV) method, which accounts for both time and risk by including discounting and interest rates, is believed to be superior.

However, there are more serious conceptual problems even with the use of NPV as a measure. All the values input into the calculations are estimations, which may differ

from actual values (where these can actually be measured). This potential for variance is usually termed risk. In the NPV calculation,

> The assessment of risks involved is contained in the selection of the discount rate, *r*, i.e. *r* includes *risk premium*. The difficulty is that there is no precise methodology to estimate the associated risks accurately so as to determine the risk premium. (Liang & Song 1994, p392)

Liang and Song go on to point out that although finance theory makes use of capital cost for the risk premium, this approach has problems for business investment. This is because the cost of capital is a statistical result of the company's business record, rather than the risk premium required by investors (as it is in the capital markets, where risk can be diversified by portfolio). They describe this use of a financial market technique in business investment as "quite crude".

Risk may be further simulated by the use of stochastic analysis, or subjective probability distributions. This method allows for the possibility that variables might fluctuate from their original estimates (i.e., the risk) by allowing ranges rather than single point estimates to be used (Remenyi *et al.* 1995). However, the determination of this subjective distribution is difficult even for experts, and usually somewhat arbitrary. Furthermore, the lack of sufficient samples (i.e., similar previous cases) and an incomplete estimation of randomness hamper this simplistic use of probability. To convert a statement such as "the sales of the company may increase about 30%" to a range of input variables in a meaningful way is very difficult (Liang & Song 1994).

Notwithstanding these conceptual difficulties with the use of CBA, there are many researchers who continue to advocate its use because "it is a procedure already known within the firms" (Costa 1996). Others believe that the techniques can be refined with the use of optimisation models (Powell 1992), graphical presentation (Shoval & Lugasi 1988), software packages (Whiting, Davies & Knul 1996), or further techniques for estimating the value of the information provided (Glazer 1993).

2.4.2 Expanded cost-benefit analysis techniques

Because CBA requires financial estimates of costs and benefits, it is most often applied to tangible costs and benefits – those that are financially measured in the organisation. Intangible costs and benefits – those which cannot easily be financially quantified – are, by definition, less suitable for this technique. This leads to a situation where a reliance on CBA will produce evaluations in which the treatment of costs, risks and benefits is unsatisfactory and important intangible aspects of the investment are neglected (Farbey *et al.* 1999). Furthermore, a single CBA, where focused at the level of a single application, will be too narrow to provide for genuinely effective decision making, as it will neglect the strategic potential of the application, as part of a portfolio of projects (McFarlan 1981, 1984).

Therefore, in an attempt to make CBA more broadly applicable, several different methods of incorporating intangible costs and benefits into CBA have been suggested. For example, the use of stochastic analysis or subjective probability estimations may be used to account for the fact that these benefits are even harder to estimate quantitatively and, therefore, even less likely to be accurate (Whiting *et al.* 1996). More precise quantification is also suggested by Money, Tromp and Wegner (1988) who propose a statistical methodology for identifying significant intangible benefits. Dos Santos (1991) suggests that a major portion of the value of new information systems projects accrues from future projects that use the technology. These future investments can be treated as optional and valued using financial options pricing theory.

Three frequently-referenced techniques for incorporating intangible benefits into CBA are Information Economics (Parker & Benson 1988), Return on Management (Strassman 1990), and SESAME (Lincoln 1988; Lincoln & Shorrock 1990). These techniques are discussed next.

A) Information Economics

Parker and Benson (1988) expand the concept of cost-benefit analysis with the theory of Information Economics. This theory provides three methods of evaluating benefits

and costs. Firstly, “value linking” looks for benefits across a chain of functional areas affected by the system. Secondly, “value acceleration” defines the value of future systems that will be made possible by the introduction of the system being evaluated. Thirdly, “value restructuring” assesses the benefits of restructuring employee or department efforts from lower- to higher-value activities. The output of these methods is an estimation of costs and benefits that is input into ROI calculations to obtain a measure of the “simple ROI benefit” of a system.

In addition to the ROI calculation, Information Economics also provides a methodology for adding risk, uncertainty and competitive edge to the ROI calculation to provide a measure of “value”. Value is defined as “the true economic impact of information technology” (Parker & Benson 1988). Six classes of value are defined. These are:

1. enhanced ROI as defined above;
2. a strategic alignment score, which depends on the degree to which a potential project contribute to the business strategy;
3. a competitive advantage dimension, which assesses the degree to which the proposed project provides an advantage in the marketplace (Porter 1985);
4. a management information dimension which assesses a project’s provision of information on core activities;
5. a competitive response dimension, which assesses the degree of corporate risk associated with not undertaking a project;
6. a strategic IS architecture dimension, which assesses how the project fits into the overall IS architecture plan.

These tools are intended to provide managers with a means “to be better able to develop rational investment priorities for decision making among all of the investment alternatives” (Parker & Benson 1988 p235).

Because this methodology views the information systems investment from multiple dimensions, some authors describe it as rigorous (Farbey *et al.* 1993). There are those however, who believe that it suggests useful techniques, but does not provide a coherent methodology for an information systems investment appraisal strategy (Whiting *et al.* 1996). Parker and Benson (1988) do not, in fact, specify exactly how these dimensions are to be synthesised into a strategy. They believe that "the problem is complicated" and suggest that "at one level, Information Economics is simply a collection of computational tools to rank benefits and costs". At a second level, they provide a discussion of the decision making process itself. Here they conclude that the complicated problem can be simplified by providing tools for the decision making process. They conclude as follows:

> The basis for *discriminating* about alternatives is extremely difficult to determine. Yet managers must regularly make these decisions. Our purpose is to expand the set of economic tools beyond CBA to embrace competitive advantage and infrastructure and at the same time provide guidance to the decision-making process itself.

and

> The process develops a measure of value and an understanding of costs and potential sources of failure or risk. In addition, the process creates consensus among management groups … Information Economics provides a persuasive tool for analyzing and allocating resources to support business strategy and performance (Parker & Benson 1988 p240)

In summary, Information Economics provides a set of tools, which can be used to provide additional data intended to assist managers in the information systems investment decision-making process. The value of the tools themselves is debatable, given the reliance placed on ROI. As noted in §(A) there are conceptual flaws with this technique, which probably cannot be overcome by more detailed estimates of the inputs.

B) Return on Management

Strassman (1990) suggests that the real benefit of information technology is that it can enhance management productivity. Benefit can therefore be measured by the increase in management productivity. This is defined as revenue less costs, purchases, taxes and dividends. As Farbey *et al*. (1993, p102) put it: "The economic value of management is the residue left after everyone else has been paid."

This method is defined here as an "expanded CBA" method because it provides an alternative method of computing the benefit of information technology, which should encompass the intangible benefits. However, the simplistic nature of the measure is such that there is no causal rationale linking the value directly to information technology; management productivity may be increased by factors other than information technology. Willcocks (1992) describes this work as iconoclastic and very interesting, and suggests that the major flaw of the approach lies with its usability and attractiveness to managers. However, I believe that the more fundamental criticism is that the technological determinism of this method cannot be warranted; the measure, however it is used, has little value, and like most single statistic ratios and benchmarks should be treated with great care (Smithson & Hirschheim 1998).

C) SESAME

Systems Effectiveness Study and Management Endorsement (Sesame) (Lincoln 1988; Lincoln & Shorrock 1990) is a method developed by IBM for establishing the actual financial returns obtained from an established system. It is thus slightly different in its focus from the methods discussed above that may, in theory, be used for either *ex-ante* or *ex-post* evaluation of information technology investments. It is an expanded CBA approach because it compares the results of two CBA evaluations.

The method consists of comparing the costs and benefits of the information system to those of a "reasonable manual alternative". Intangible benefits are included in the breach rather the observance, as it were, because each alternative is presumed to achieve identical end results – and thus the same intangible benefits (Whiting *et al.*

1996). This assumption is flawed, because it is highly unlikely that the alternatives would be thus equivalent. For example, any information systems investment would be contributing to the information infrastructure of the organisation, or a manual system might provide better job satisfaction. Cost benefit analysis as a means of evaluating these alternatives against one another would miss such distinctions. Furthermore, the real likelihood of a "reasonable manual alternative" existing is very low indeed.

2.4.3 Key performance indicators - the balanced scorecard

A further means of evaluating an information system in non- financial terms is to assess those benefits that, although not financial, are nonetheless measurable. These are referred to as Key Performance Indicators (KPIs). KPIs cannot determine a value to be placed on a system but can give some indication of how the system might affect the business, and a means of measuring this, post implementation. Usually, non-financial measures are already utilised in many aspects of most businesses. However these measures most often track what goes on within a function. Marketing tracks market share, operations watches inventory and so on. In many cases, an information system will be cross-functional in its application, and a common set of indicators will be required. Several ways of utilising KPIs to produce this common language have been suggested (Whittaker 1994), the most well-known of which is the Balanced Scorecard.

The Balanced Scorecard is a set of measures derived by Kaplan and Norton (1992; 1993; 1996) It is designed to give top managers a quick but comprehensive view of the business. Its development was based on the realisation that traditional accounting measures can give misleading signals for innovation and improvement. At the same time the authors believe that managers should not have to choose between financial and operational measures, but should be provided with a balanced presentation of both types of indicator. Financial measures, on the one hand, give results of actions already taken, while operational measures are the drivers of future financial performance.

Most companies have many financial, operational and physical measures for local activities. But these local measures are bottom-up and derived from ad hoc processes, and there are far too many of them for management to monitor. The balanced scorecard, on the other hand, requires managers to select a limited number of critical indicators within each of four perspectives:

1. Financial - how does the company look to shareholders?
2. Customer - how do customers see the company?
3. Internal - what must the company excel at?
4. Innovation and learning - can the company continue to improve and create value?

This set of measures not only balances the internal and external foci and provides shareholder, customer, and process perspectives but is also derived from the strategic objectives of the organisation. Kaplan and Norton (1996) believe that by integrating the four perspectives, and linking these to the strategy, the Balance Scorecard can serve as the focal point for the organisation's effort, defining and communicating priorities to managers, employees, investors and even customers.

While the Balanced Scorecard was originally developed as a measure of corporate performance and not specifically for information systems, it can be used to measure information systems performance, in the four perspectives described. This is considered by many practitioners to be useful, since information systems themselves should support organisational objectives in all these areas. This approach does however require that the organisational strategy should have been defined and, furthermore, expressed in terms of a Balanced Scorecard. Where an information system is function- or division- specific, a scorecard for that function or division (which should itself of course be based on a corporate scorecard) will be required. In addition, because only a limited number of indicators are permitted, managers often have to negotiate about which indicators will be used, a process that can be complex and demanding. The actual measurement of the indicators can also be costly, particularly if the indicators chosen are not already tracked by the organisation.

2.4.4 Contingency approaches

Many authors believe that different types of systems provide different types of costs and benefits. This theory is usually linked to an historical evaluation of the changing role of information systems (Amos 1990). Whereas information systems originally provided only automation benefits, it now provides further, often intangible benefits to the organisation, because it is used for more sophisticated purposes. Different authors classify these benefits differently, (Dickson, Wells & Wilkes 1988; Lederer & Prasad 1996; Maggiolini 1988) but they are usually related to:

1. information that the system can provide to management, thus improving decision making and contributing to effectiveness;
2. communications and co-ordination technology, which can be used to transform the way in which the business operates, thereby providing it with a strategic edge over its competitors.

Given that different types of system provide different benefits, a contingency approach may be used to provide different measures of value depending on the purpose of the system[11]. Several different contingency approaches are suggested in the literature. For example, Hawgood and Land (1988) suggest an approach based on careful distinction between systems in the business value chain and those with support functions, while Hochstrasser (1990) suggests that evaluation methods should be dependent on the information systems strategy. Ward (1990) proposes a portfolio approach, based on McFarlan (1981) that helps management evaluate the relative importance of information systems investments to the business and hence to define how each investment can be appraised and managed. Silk (1990), and Farbey *et al*. (1993) also provide contingency approaches based on the characteristics of the investment. These are critically discussed in more detail next.

A) Silk's Benefit-Level Matrix

[11] Willcocks (1994) suggests that the approach taken should be based on the goals of the firm and developed by the firm. But most contingency approaches are based on the type, or desired effect of, the system in question.

Silk (1990) provides a benefits level matrix that maps the type of benefit to be derived from the system against the organisational level at which the system will be used, providing a 9-cell matrix as shown in Figure 2. Benefits are defined as:

- efficiency – to be justified by cost savings;
- effectiveness – to be justified by return on assets;
- edge – to be justified by growth of revenue or profit.

Organisational levels are defined according to Anthony"s hierarchy as operational, tactical or strategic. Different systems may be mapped into different cells, clarifying what purpose they will serve in the organisation.

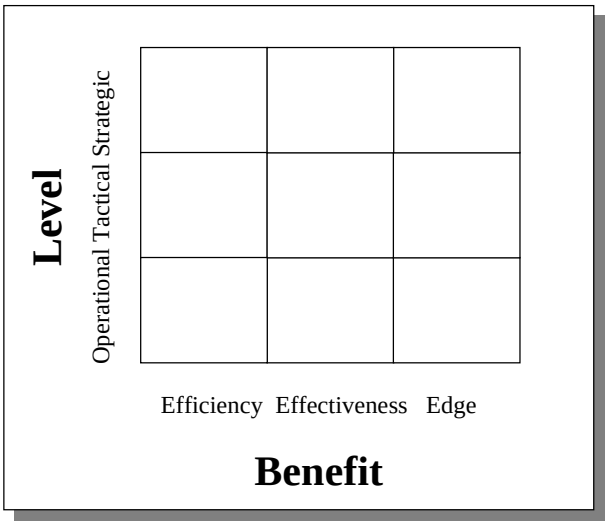


Figure 2: Benefit-level matrix mapping types of benefits against the level of the organisation at which the system will have its main use and impact

Once the system type has been identified a 7-milestone method of evaluating the system may be followed. This method proposes 7 types of justification that might be used for information systems projects:

0. must-do: investments that are unavoidable are not formally justified;
1. faith: the vision of senior management justifies the project;
2. logic: causal logic is used to demonstrate the value of the system, without quantification;

3. direction: a specific benefit is identified, to be measured when the system is in operation;
4. size: the benefit is identified and quantified in advance, to be measured and compared when the system is in operation;
5. value: the benefits are identified, quantified and weighted in advance;
6. money: the benefits are given an estimated financial value.

For some projects managers will be able to proceed to step six. For others they may stop at an earlier step. Silk suggests that "the merit of the seven types of justification is that they encourage managers to sharpen up the business case to a degree to which they still feel confident with the numbers" (1990, p187). The "sharp" business case is one that equates to estimated financial value, based on the ideal of the cost-benefit analysis. However, he does not complete the contingency approach by mapping the 7 types of justification, against the benefits-level matrix. This leaves managers to adopt a heuristic (or what-is-possible, or what-is-expedient) approach in deciding what type of justification to use.

B) The Benefits Evaluation Ladder

Farbey *et al.* (1993, p121) propose a benefits evaluation ladder, and describe it as follows:

> Each rung of the ladder represents a type of change and hence a type of application … The focus of evaluation and the appropriate evaluation techniques are different for each rung of the ladder. Whereas precise quantification of costs and benefits are possible near the bottom of the ladder, the higher rungs rely more on experimental and judgemental processes.

The ladder is shown in Figure 3.

	8	Business Transformations
	7	Strategic systems
	6	Inter-organisational systems
	5	Infrastructure
	6	MIS and DSS system
	3	Direct value added
	2	Automation
Rung	1	Mandatory changes

Figure 3: The benefits evaluation ladder, showing different types of information systems applications

The authors believe that this framework is useful because "it is a framework for action as well as understanding; it specifically relates to evaluation; and it does not imply any predetermined or time-based sequence of progress" (Farbey *et al.* 1995, p41). However, I do not consider it to be clear how the framework alone enables action, because the authors refrain from recommending any specific methods of evaluation. While they do point out that there are increasing levels of benefit, risk and complexity at each level, and therefore increasing and distinct difficulties that may apply, they do not specify exactly how these difficulties may be overcome.

The next chapter of the book provides a more systematic means of matching method to project. This is done by considering not only the characteristics of the investment, but also the characteristics of the evaluation itself (Amos 1990; Ginzberg & Zmud 1988). The project evaluation is represented on a series of 2x2 matrices. The matrices represent: the role of the evaluation; the decision environment in which the evaluation will take place; the system characteristics; the organisational characteristics; and the certainty of the impact of the system. They are then overlaid to find a dominant profile of the project. This profile is then overlaid on a 2x2 matrix containing different evaluation techniques, including ROI, NPV, return on management, information economics and experimental methods, amongst others, to find which techniques match the profile of the project.

Although the benefits ladder appears in the same book (Farbey *et al.* 1993) as this complex contingency approach, it is not clear how they relate to one another. The latter provides a richer picture of the project and the evaluation than the former, and a more detailed assessment of how various techniques relate to one another. However, in so far as any of these techniques themselves have serious flaws, as discussed previously, a matrix that suggests the use of the techniques must itself be flawed. This criticism applies to all the contingency approaches discussed.

2.4.5 User information satisfaction

User information satisfaction (UIS) is a technique that is used to evaluate the success of an existing system, or an entire IS department. It is based on the assumption that user satisfaction with a system is an indicator of the effectiveness of the system (Hamilton & Chervany 1981). Another version of this theory suggests that system usage is such an indicator (Davis & Srinivasan 1988; Raymond 1985), but as Srinivasan (1985) demonstrates, users may be forced to use systems which they do not consider to be effective (and vice versa). Thus the concept of usage is generally disregarded in favour of the concept of user satisfaction as a measure of effectiveness.

UIS can be evaluated in numerous ways. Firstly, it can be measured by asking users if they are satisfied with the system (King & Epstein 1983). Secondly, if a more complex multi-attribute measure is regarded as more reliable, the Bailey and Pearson instrument, or a derivative thereof, may be used (Bailey & Pearson 1983). Here users are asked to rate issues which constitute various key underlying dimensions of user satisfaction (Iivari & Ervasti 1994; Raymond 1985; Srinivasan 1985). Alternatively, user satisfaction with an IS department may be viewed as equivalent to service quality (Pitt, Watson & Kavan 1995) and measured as the gap between desired and actual performance on a number of issues (Miller & Doyle 1987).

All of these methods use quantitative surveys to obtain user ratings, and statistical techniques to analyse and verify the data. Factor analysis is performed to obtain or verify various dimensions of UIS. In some studies (Iivari 1988; Raymond 1985;

Srinivasan 1985) these factors are then correlated with other features of the system or IS department to identify criteria associated with success (UIS). Other studies test the UIS questionnaires to see if they can be used within companies to measure success (Miller & Doyle 1987; Pitt *et al.* 1995). It has also been suggested that an instrument based on UIS questionnaires might be applicable for measuring top management satisfaction with the MIS department (Guimaraes & McKeen 1988).

DeLone and McLean (1992, p69) believe that UIS is the most widely used measure of IS success. They suggest three possible reasons for this:

> First, "satisfaction" has a high degree of face validity. It is hard to deny the success of a system which its users say that they like. Second, the development of the Bailey and Pearson instrument and its derivatives has provided a reliable tool for measuring satisfaction and for making comparisons amongst studies. The third reason for the appeal of satisfaction as a success measure is that most of the other measures are so poor; they are either conceptually weak or empirically difficult to obtain.

However, the use of UIS alone as a measure of success is simplistic, as success is a multidimensional construct. For example, DeLone and McLean (1992) suggest that UIS depends on system quality, information quality and system use; and may, in turn, determine system use, system impact, and organisational impact. All of these constructs are seen as leading to, and therefore predictive of, information systems success.

There is a further conceptual problem with UIS. UIS is believed to lead to success. However, it is also believed to indicate success. This is a circular argument as amongst all the measuring and definition of variables, there is no independent variable "IS success" which can be measured. Thus confusion often arises between the use of the construct as a determinant of success, and as a measure of success. DeLone and McLean (1992) for example, are guilty of this: In their study, which attempts to answer the question "what *causes* MIS success?", they identify various

constructs by examining literature which *measures* MIS success using these constructs. From a prescriptive point of view, however, UIS is recommended as a measure of success which managers might usefully employ.

2.5 Evaluation Practice

Having reviewed the types of methods proposed in the literature for the evaluation of information systems in firms, it is pertinent to ask what managers actually do? In this section I shall explain how the literature suggests that information systems evaluation practice is inherently paradoxical, before illustrating this kind of practice through a short vignette. Finally, I shall discuss why it might be that practice is as problematic as it is.

2.5.1 Paradoxical practice in the use of evaluation tools and techniques

The CBA and expanded CBA techniques have as their purpose the provision of a financial estimation of system benefit. This is seen as the most rational criterion for information systems investment decision making, given that the objective of the firm is to maximise profit. In practice however, this apparently rational technique is often neglected in favour of more heuristic decision making processes (Ballantine, Galliers & Stray 1996; Farbey *et al.* 1993; Farbey *et al.* 1995; Lederer & Prasad 1993) or consideration of more general business objectives (Lubbe *et al.* 1996). As Farbey *et al*. point out, "many substantial investments [are] defended as 'acts of faith' or 'got to do' or simply 'strategic'" (Farbey *et al.* 1999, p208).

While some authors report a reliance on financial techniques in practice, they also find that these techniques are used only for feasibility purposes, and more specifically as a mechanism to secure project approval. Thus for example, even where Farbey *et al*. report "that formal appraisal and evaluation procedures have become more common", they go on to note that "the formal evaluation [is], however, not always decisive in determining the initiation or continuation of a project. Other factors, political or strategic [enter] into the decision" (Farbey *et al.* 1999, p215). Thus instead of viewing evaluation processes as "positive activities leading to better decisions, tighter control, happy users and greater benefits", managers [tend] to view

evaluation "negatively as hoops which ha[ve] to be jumped, an organisational imposition which [takes] up valuable working time" (Farbey *et al.* 1999, p208). In such circumstances, analyses which are "basically fiction" are imposed by senior managers as control mechanisms to information systems related decisions (Grindley 1991).

Furthermore, post-implementation evaluation is rarely done properly, even though many organisations "pay lip service to the concept" (Farbey *et al.* 1999, p216). Where system developers conduct such an evaluation soon after implementation, the "primary reason … seems to be project closure and not project improvement" (Kumar 1990, p203). More often, the accuracy of the pre-implementation evaluation is never reviewed or verified (Ballantine *et al.* 1996; Blackler & Brown 1988; Golden & O'Flaherty 1996; Willcocks 1992; Willcocks & Lester 1996a), in spite of the perceived importance of benefits management as a means of ensuring the expected value of the system is realised (Jurison 1996; Peters 1996; Ward 1990). Managers suggest that post-implementation evaluation is too difficult and therefore costly, or not necessary, or even just "against our culture" (Norris 1996).

The use of financial techniques is also often limited to simple measures that are easy to understand, such as payback. CBA is considered more difficult and measures of effectiveness are neglected or even unknown (Golden & O'Flaherty 1996). Managers believe that the qualitative benefits are important, but are reluctant to quantify them, because they seem vague (Serafeimidis & Smithson 2000). Qualitative costs are even more problematic, as they must include "all the things that can go wrong", which are by definition unknown, or at least uncertain (Farbey *et al.* 1999, p205). Identifying these kinds of costs and benefits can be as difficult as putting numerical values to them, and may even be "omitted because they are difficult to handle or politically embarrassing or hinder the approval procedures" (Farbey *et al.* 1999, p220).

With regard to contingency evaluation, Vetschera and Waltersheid (1996) have found no relationship between system and evaluation characteristics, and the method of evaluation used, which suggests that contingency approaches are not used, except

perhaps as a broad excuse not to invest in a proper cost benefit analysis (Hochstrasser & Griffiths 1991). As Farbey *et al*. point out it is not always easy to match an information systems investment with a suitable methods of evaluating it, as the process would be both lengthy and imprecise (Farbey *et al.* 1999). Where taxonomies such as the benefits ladder have been developed for the express purpose of providing a systematic means of performing the matching process, however, one might expect managers to adopt them with more alacrity. Still even though "all these tools and techniques seem to be well-founded academically…there appears to be little enthusiasm from organisations for their adoption in practice" (Smithson & Hirschheim 1998, p171). This may perhaps be because such approaches require a broad understanding of the role of the system, and many project participants are "not aware of, or unable to fathom, the larger picture" (Farbey *et al.* 1999, p217). Whether or not they even want to is perhaps debatable as many managers report difficulty in getting users to participate in evaluation processes on the one hand, and fluctuating attention and interest from senior management, on the other (Farbey *et al.* 1999, p220). What managers should do in evaluating information systems is, it seems, very different from what they actually do. The practice is paradoxical in terms of the theory.

2.5.2 An evaluation vignette

In order to consider this paradoxical practice more carefully, it may help to conduct a thought experiment (Introna & Whitley 1997b) in which we imagine an evaluation vignette or story. The purpose of this vignette is to provide a description of evaluation, as it is experienced by information systems managers, for the purpose of reminding us what their experiences in practice are like. In this way I hope to ground my discussion of information systems in a "real-life" example, which also can be pursued in later argument, even where it is underpinned by different philosophical viewpoints. (The interpretation may differ, the basic story will remain the same.)

Consider then the case of Susan, the director of information systems strategy and capacity planning at a major retail bank, who is engaged in reviewing the current systems in use at the bank. These are very sophisticated and complex. In fact the

bank prides itself on running an online, real-time, fully integrated mainframe system, which has allowed it to be one of a few banks in the world to provide real time posting on financial transactions, irrespective of where they take place on the country-wide network.

A) The Requirement for a System

Susan is reviewing the performance statistics on the system, which show that the system provides in excess of 99% availability on a month-to-month basis, with an average response time of 2-3 seconds per transaction. These appear to be very satisfactory statistics but when considered in conjunction with the capacity utilisation figures are a cause for concern. The system is operating at close to 85% capacity, even though the overall MIPS available have grown ten-fold over the last ten years. Susan is concerned that if usage grows much more, capacity could be exceeded, and the system could experience a major outage. While there is remote disaster recovery in place this works on a 12-24 hour delayed manual transmission of data via tape, and a major failure would paralyse the bank in the short term.

With these concerns in mind, Susan decides to investigate alternative architectural possibilities for the mainframe system. She discovers that increasing mainframe capacity will be very difficult, as the bank already uses the largest mainframe available. Upon further investigation however, she discovers a capacity management system that will allow two mainframes to work together in tandem, remotely across a considerable distance. This system will both load balance, and provide real time remote backup. The system, front-ending the two mainframes available (host and backup), will thus provide both capacity and resilience – the two pressing issues in terms of the information systems strategy for Susan at that point.

B) The Justification of the System

Susan is now faced with justifying the system. This is going to be a difficult task as the total cost is in the region of R100 million, and that sort of number attracts the attention of senior management. Susan thus approaches George, the divisional accountant, for assistance in drawing up a cost benefit analysis.

George quickly points out that the calculation of the net present value of the system is very difficult, because the benefits are not easily quantifiable. What is the benefit of *not* experiencing an outage. What would an outage actually cost? This would depend on when it happened, and for how long. And what is the likelihood of it happening? There has been substantial growth in utilisation over the past ten years, but customer acquisition in the bank has slowed substantially. Even if the system were to approach capacity, intelligent queuing of transactions, while slowing response time, could salvage capacity. What would the cost of slower response times be? George believes that an objective assessment of the benefit is essential. But since he can isolate no direct quantifiable benefit, he cannot assist. A financial justification would appear to be impossible.

Susan then decides to review the alternative evaluation methods available to her. Amongst the many frameworks and decision models she finds, she considers the key performance indicator approach, based on the balanced scorecard model, to be the most comprehensive. Unfortunately this approach is complex, demanding and costly, and Susan needs to get the budget for the system approved at the next senior information systems portfolio committee meeting, in time for the new financial year. Furthermore the systems life-cycle approach requires that the business strategy should have been defined in terms of the balanced scorecard, and although Susan knows that there is a project in place to develop such a scorecard for the bank, the corporate strategic planning department, when approached, refuse to release the draft scorecard, as it is still considered confidential.

C) The Dilemma

Susan, while herself convinced of the necessity for ensuring capacity and resilience has at this point no formal rational means to justify the system. Can she get it approved by other means? The basic business objectives seem appropriate, but even so she would prefer to be able to present a more disciplined, rigorous assessment.

Susan, as we leave her, is poring over the research journals looking for a more appropriate method.

D) Understanding Susan's Dilemma

Susan is faced with this dilemma: she must evaluate the system, in order to be able to justify a R100-million expense, but the methods available seem either inadequate for the task, or very complex. Susan needs to find some way of proceeding, but the prescribed methodologies are not very attractive to her at this point.

We also note that Susan perceives the process of evaluation to be necessary because it is a means of justifying the expense of the system, and getting budget approval in time. She is not necessarily looking for a methodology that will help her learn about the system, but rather one that will help her jump through the hoop of the senior information systems portfolio committee meeting. So even if Susan can find a good means of evaluation, she may well be guilty of using it simply as a means of obtaining project approval.

In trying to understand this case, we must then ask, why is Susan acting in this way? Why is practice paradoxical? In the following section I shall address this question more generally.

2.5.3 Why practice is paradoxical

Why is evaluation so difficult, and apparently so poorly done in practice? It has been suggested that this is because of the nature of information systems themselves, which continue to be plagued by "sources of wickedness" (Farbey *et al.* 1999, p22). Smithson and Hirschheim (1998) note that information systems have multiple types of effects (economic, organisational, social, managerial) that are difficult to isolate and measure independently. Even once implemented, systems evolve and change in the context of an evolving and changing environment. Thus "there are often unplanned consequences from introducing a new system and the business application area concerned may be subject to impacts from planned changes or unforeseen events which are at most only indirectly linked to the new system" (Smithson & Hirschheim 1998, p161). Furthermore, even "the new system" may be hard to isolate as an entity,

and systems have become more complex, and implicated in other changes, such as new work practices, new marketing initiatives, new supplier relationships etc. Projects may have links to other information systems and non-information systems projects, in a major programme of work. In such cases "the value to the organisation is ultimately the value of the whole, but this may be too complex to comprehend" (Farbey *et al.* 1999, p223).

Nonetheless there are, as shown in this chapter, many different kinds of tools and methods available, and even though "there is no one method which is universally applicable…they have all been developed to enable organisations to cope with common evaluation problems" (Farbey *et al.* 1999, p212). Powell (Powell 1992) thus suggests that the apparent difficulty of the problem is due not to a deficiency in the tools available to the evaluator but rather to a host of other reasons. These include a lack of organisational objectives against which to measure the system; the perception that some systems are obligatory or strategic, or that cost does not matter; a lack of purpose in the decision; a culture of perceived failure in previous evaluation attempts; and the blinding of the purchaser by science, or a perceived need for "toys for boys".

In other words, even though evaluation is admittedly difficult, there are many tools that can be employed in taming the problem, if only managers would use them. Managers however, persist in their paradoxical behaviour, even where they should know better. "Often and surprisingly, the primary causes of failure stem from factors and errors which are well known and often feature in development methodologies. In practice they are sometimes ignored with disastrous results". Even where tools may be deficient, it is suggested that they could in some cases "easily be corrected by minor amendments", although in others, "shifts in current thinking, or even "new techniques and tools", might be required (Farbey *et al.* 1999, pp220-222). In other words, what is needed is more discipline on the part of managers in the application of more rigorous methods for evaluation.

2.6 Conclusion

This first turn about the hermeneutic circle of IS evaluation has thus brought me to an understanding that there is a problem. Logically, IS evaluation can be understood if we consider different types of systems requiring different kinds of evaluation. This gives us a range of methods to apply. However, it seems that managers do not often apply these methods. In practice they encounter considerable difficulty in understanding what kinds of systems they are dealing with, and in using more sophisticated methods to assess them.

In the next chapter I shall address IS evaluation from an alternative, interpretive, perspective in an attempt to find a more satisfactory understanding of both theory and practice.

3 Information Systems Evaluation: The Interpretive Perspective

By way of contrast, an interpretive view of IS evaluation goes some way towards explaining this paradoxical practice: because information systems are essentially social systems with a technical component, they are subject not to rational/objective evaluation, but to subjective/political evaluation. Even where rational/objective methods are used, managers are inevitably subjective/political in their actions. Such methods are often used, therefore, for purposes of ritual only.

We thus have two stereotypes of IS evaluation, and the manager engaged in this process:

the objective/rational manager utilising objective/rational methods versus the subjective/political manager engaged in political manoeuvring, utilising objective/rational methods only as ritual or symbolism.

3.1 Introduction

In the previous chapter I examined various methods of IS evaluation and came to the conclusion that these have some conceptual flaws. Furthermore they are not used by managers in practice. Within a functionalist paradigm the solution to this problem is clear and twofold: firstly, more rigorous methods are required; secondly more discipline must be imposed on managers. If one elects to step outside of this paradigm, however, alternative ideas become available.

In this chapter I shall explain how it was that I saw that an alternative paradigm might exist. I shall then explore the ideas about evaluation that become available as a result. These ideas lead to a revised view of IS evaluation, and thus this chapter describes a second turn about the hermeneutic circle, leading to new insights.

3.2 Realising that Objectivist Evaluation is not Adequate

Towards the end of the BPR research described in chapter two, it became increasingly obvious to me that the functional view of IS evaluation was inadequate, and that there

were serious anomalies in practice. The review of the IS evaluation literature presented in chapter two confirmed this, but suggested no way out of the dilemma. Somehow the problem itself needed to be redefined. Reviewing my BPR research provided a starting point in this redefinition.

An unanticipated outcome of this research that led me to realise that it was the neat boundaries and conventionally accepted labels applied, particularly in contingency approaches to evaluation, that were inadequate. (In retrospect this is evident as an expansion of my hermeneutic horizon and an applicative moment of understanding.)

Simply put the unanticipated outcome was as follows: I found in speaking to senior managers that there was, in addition to the customer-, process- and shareholder-focused benefits to be derived from BPR projects, a fourth area of benefits which was considered vital, and that was "employee-focused" benefits. An appropriate employee culture was seen not only as a prerequisite for change, but as a desired effect of the change. Included in this area of employee culture are issues of morale, ownership and multi-skilling. In other words, transformation must also change the way in which people approach their work, and their understanding of the process that they facilitate

This result led me to consider once again what is meant by "informating" and its relationship with transformation. The theory of the informating capacity of information technology was originally expounded by Zuboff (1988). *The Age of the Smart Machine* is a complex and thought-provoking work, richly interwoven with historical explanation and ethnographic research. It is also over-referenced and its key concept – that of "informating" – too often simplistically defined. For example, Remenyi, Money and Twite (Remenyi *et al.* 1995) suggest a three phase evolution of computers, in which informate is the second phase.

In terms of this model, the use of computer systems is seen to progress from one stage to the next: from the automation of repetitive and routine tasks, to providing

management information, to “changing radically the way in which the business operates”. Thus “informate” is equated with “management information systems”.

Without wishing to be guilty of over-simplification myself, and having carefully reconsidered Zuboff’s work (because of what managers told me) I believe that the theory may be usefully described as follows:

Much of the skill utilised at both blue and white collar levels in organisations was originally action-centred; sentient, action- and context-dependent and very tacit and personal to the individual possessing the skill. Both industrial and information technology have the effect of codifying this skill, expropriating previously tacit and personal knowledge to the technology itself. The action-centred skills are built into the technology. That is automation.

When technology is used purely to automate, the worker is treated as just another mechanical variable, resulting in the withdrawal of the commitment to and accountability for the work. However, information technology has, in addition to its capacity for automating, a capacity for informating. Informating may be described as the power of information technology to textualise events and processes, that is to convert them to a symbolic medium and make them visible in new ways.

This textualisation becomes a source of a more comprehensive and abstract knowledge because workers are forced to abandon their previously sentient knowledge and develop a more explicit understanding of the entire system. This can result in the development of new intellective capacities amongst workers, and opportunities for adding value through insight and innovation.

This is a considerably more complex understanding of the effects of information technology, and one which IS academics have by-and-large neglected to consider carefully. (Although McAfee (1999) has more recently considered the concept under the label of “visiblility”.) In neglecting such real-world complexities, they necessarily rely on simplistic characterisations.

Any understanding or model of reality is formed by the assumptions held by the modeller. All the evaluation research described thus far is underpinned by a set of assumptions which may be characterised, in terms of the framework suggested by Burrell and Morgan (Burrell & Morgan 1979), as objectivist. That is, researchers assume that information systems, as defined objects in a real world, can be classified, measured and understood using nomothetic, quantitative techniques within a largely positivist epistemological paradigm. Technological determinism is taken for granted.

These simplifications are prevalent in information systems evaluation, where tools and techniques such as contingency theories are thus based on considerably simplified models of reality. The studies that describe how these methods are used are either survey (Ballantine *et al.* 1996; Blackler & Brown 1988; Golden & O'Flaherty 1996; Katz 1993; Lederer & Prasad 1993; Lubbe *et al.* 1996), statistical (Lederer & Mirani 1995; Vetschera & Waltersheid 1996), or essentially positivist case study methods (Farbey *et al.* 1993; Farbey, Land & Targett 1994; Farbey *et al.* 1995).

Zuboff (1988), however, points us towards a more complex reality. Her sociological study of the effects of information systems suggests an alternative viewpoint: information systems are not objective/rational objects, but social, subjective and political objects with a technical component (Canevet 1996). Iivari, for example, writes of “information systems as negotiated social choices” (Iivari 1988, p63). This line of thought, sparked by the rich ethnomethodological critique of information systems presented by Zuboff, begins to provide an explanation of why functionalist methods of IS evaluation are inadequate: they oversimplify a complex situation in order to present it as an objective reality.

Understanding evaluation from within a different paradigm might therefore prove more adequate. In the second half of this chapter I shall examine the small body of IS evaluation literature that identifies alternative paradigms or zones of understanding.

3.3 Evaluation within the Interpretive Paradigm or Zone[12]

An alternative to the functionalist paradigm is the interpretive paradigm which assumes that the social world is a structured reality best understood by ideographic methods (Burrell & Morgan 1979). In addressing this paradigm, Hirschheim and Smithson (1988) provide a critique which, although following Burrell and Morgan, presents a continuum with zones. In this discussion they consider explicitly IS evaluation along the highly rational/objective to subjective/political continuum, as shown in Figure 4.

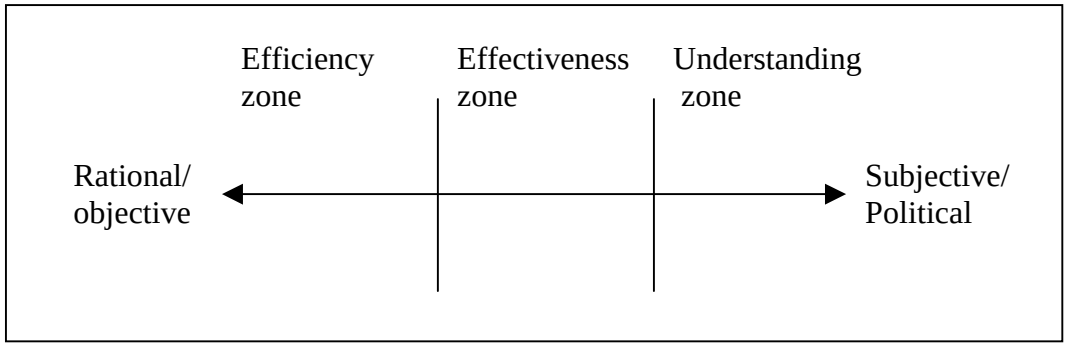


Figure 4: The evaluation continuum (Hirschheim & Smithson 1988)

At the highly rational/objective end of the continuum, they detail IS evaluation literature that is broadly defined in an efficiency zone. This literature deals with the performance and reliability of computer systems, rather than information systems, and has therefore not been included in this review.

Information systems, by contrast, are required to be effective, and it is in this zone that IS evaluation becomes problematic. As noted in chapter two, criteria of effectiveness are difficult to measure or even to define, and frequently those aspects that are measured are those which are measurable. All of the evaluation techniques

[12] This notion of definitive paradigms poses its own problems. As Deetz (1996) points out, "[the] very power [of the four-paradigm grid] has led to a degree of reification that gives it a certainty in some quarters that is not warranted nor, I feel sure, was that status intended by its creators." It is probably the notion of a grid (boxes into which one can slot 'things') that leads to such reification. Hirschheim and Smithson (1988) present zones. Perhaps these are less strongly demarcated than grids.

described in chapter three, (CBA, expanded CBA, contingency techniques and user satisfaction) fit somewhere in this effectiveness zone. Paradoxically although these techniques carry considerable organisational and scientific legitimacy (Walsham 1993), they do not seem to affect the actual outcome of the evaluation process. Franz and Robey (1984) suggest that where they are used, "the rational elements are tools used by participants to gain new ground or protect ground already won".

This suggests that even where highly rational and ostensibly objective techniques are used, managers are inevitably acting in a subjective/political manner, and therefore moving towards the subjective/political end of the continuum. Within the area of organisational change, Legge (1984) has noted that the inescapably political environment of the organisation means that the choice of evaluation design is constrained by the requirements of the most powerful participants. Whilst, overtly, the evaluation process will involve the provision and use of information for decision making, covertly, the evaluation will have functions which may not be admitted publicly. Such functions will include communicative, directing, controlling and symbolic purposes (Langley 1989). The most important symbolic purpose of formal evaluation is as an expression of rationality. Evaluation becomes a ritual in which both the appearance of and belief in rationality are expressed (Symons & Walsham 1988), rather than a substantive process through which benefits can be improved (Kumar 1990) primarily for political and persuasive effects (Farbey *et al.* 1999).

While such rituals therefore carry negative connotations in that they often support powerful interests in their efforts to maintain or change the status quo, they are important in sustaining organisational context through symbolic expression. Rituals, however, can sustain context only if they are not actually perceived as "ritual", and thus fairly circumscribed rational approaches are accorded considerable legitimacy. (Otherwise they would be perceived as "just ritual" and paradoxically carry no value *as ritual*, in a world where objective rationality is both required and valued.)

It is exactly this legitimacy that has led IS academics and consultants to formulate further frameworks and methodologies to facilitate evaluation, thereby shifting

practice back towards the objective side of the continuum. Bjorn Andersen (1988) describes this process as follows: “we tend to spend more and more time and use even more refined technological tools for solving the wrong problem more precisely” .

What then might the right problem be? Hirschheim and Smithson (1988) suggest that a deeper understanding of nature and the process of evaluation itself is required. This they place along the continuum towards the subjective/political extreme in an “understanding” zone. In this zone, measurement is not attempted, rather the understanding of evaluation is the aim.

In the logical progression from rational/objective to subjective/political this zone creates some problem for the reader: the authors have switched from thinking about ways of evaluating to thinking about thinking about evaluating. At first sight this does not seem logical, but it can be understood if we relate it to the concept of responsive or fourth-generation evaluation described by Guba and Lincoln (Guba & Lincoln 1982; Guba & Lincoln 1989). Responsive evaluation can be contrasted with pre-ordinate evaluation. In the latter measures, parameters and boundaries are established a priori, on the basis of positivistic scientific norms. In IS evaluation the evaluation in the effectiveness zone would be pre-ordinate.

By way of contrast, responsive evaluation is constructivist, in that it is based on an interpretive paradigm and seeks, in the process of the evaluation itself, to both understand and construct the evaluation, thereby creating reality (rather than finding truths). Evaluation outcomes are not descriptions of reality, but meaningful constructions that enable the participants to make sense of the situation. In other words the evaluation becomes thinking about evaluation as proposed by Hirschheim and Smithson (1988). Responsive evaluation falls towards the subjective side of the continuum because it relies not on positivist methods purporting to provide rational and objective findings about reality but rather on a more subjective view that accepts that knowledge exists essentially in the form of human constructions. The manager as evaluator would necessarily be viewed “not as a controller, investigator and

discoverer, as in the pre-ordinate approach, but as a collaborator, learner and teacher, reality shaper and change agent" (Walsham 1993, p168).

This sort of collaborative role does seem to be one which is commonly adopted by IS managers in evaluation, or indeed in general. Interestingly, in re-examining their own framework ten years later, Smithson and Hirschheim (1998) themselves seem to some degree to sacrifice the constructivist view that underpins evaluation in the understanding zone, in favour of a more functional, categorical view. Figure 5 shows the revised framework but in diagrammatic form this does not correspond directly to the textual discussion in the paper. In the text they now include "various classification schemas" (Smithson & Hirschheim 1998, p168) including Willcocks (1994), Parker et al. (1988), Ward (1990), McFarlan (1981), Hochstrasser (1990) and Farbey *et al*. (1993) in the understanding zone. As shown in the previous chapter, these are basically contingency approaches, which by definition must objectify and simplify reality for classification. I would, therefore, contend that they fall more towards the objective end of the continuum, and in the effectiveness zone as I have previously argued.

By way of contrast other approaches are included in the understanding zone that can be seen to be more essentially interpretive, at least in their epistemology, or view of how evaluation as understanding might function. The several approaches that employ a context, content, process, for example, form part of a growing body of interpretive work in IS evaluation that has emerged over the last ten years or so.

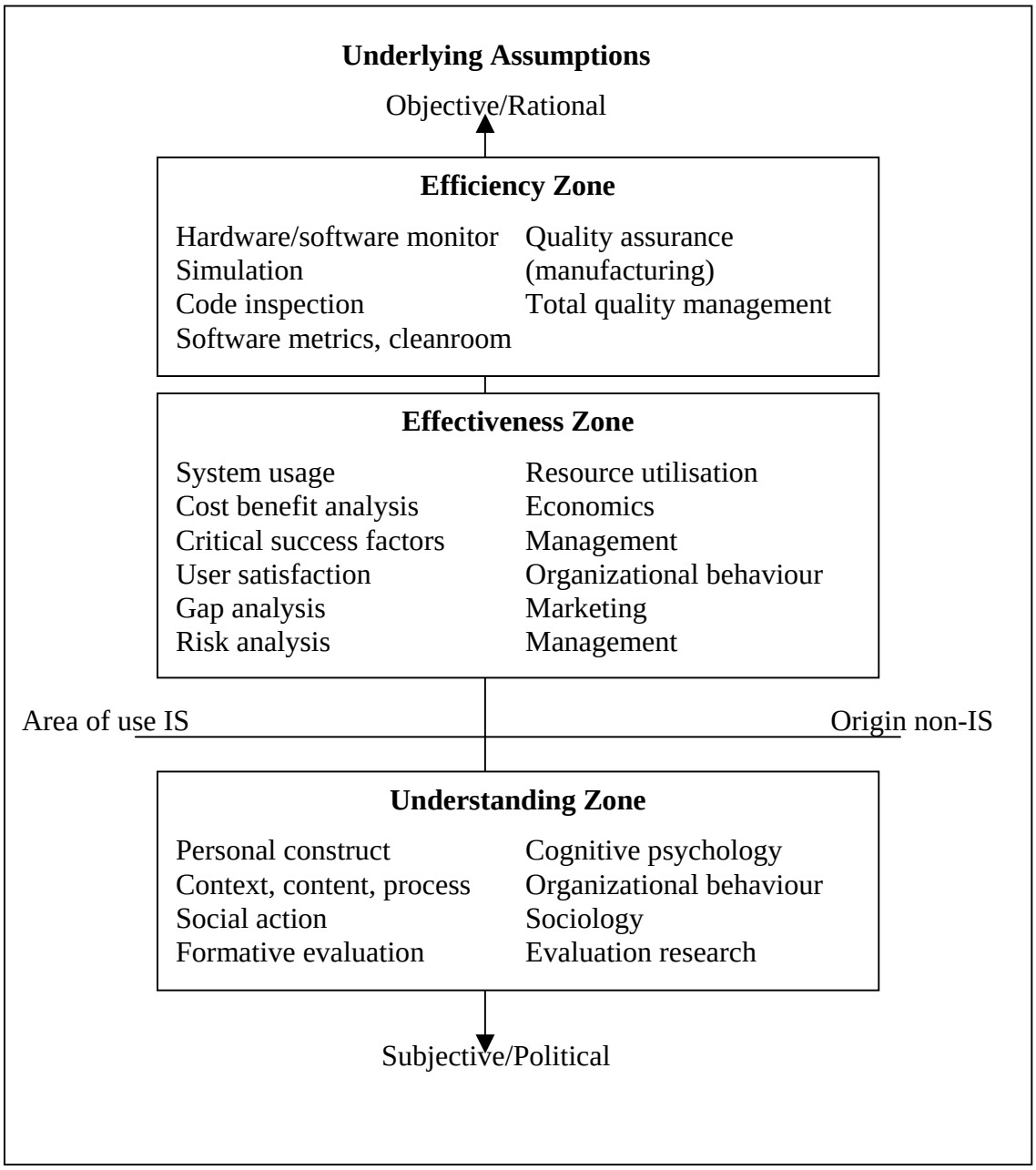


Figure 5: The revised evaluation continuum (Smithson & Hirschheim 1998)

Chronologically, this interpretive thread begins with Symons and Walsham (1988), who suggest using the organising concepts of Soft Systems Methodology (Checkland 1981) to surface the diverse and sometimes conflicting perspectives on evaluation. This is done by constructing a "rich picture" of the information system and its impacts. These impacts are then built into conceptual models of the process of evaluation of the information system. The models variously adopt one of four

perspectives, namely formal rational, structural (rule-oriented), interactionist (negotiated on the basis of shared beliefs) or political (on the basis of conflicting beliefs). The intention of this research method is "to translate the understanding of the process of evaluation of information systems ensuing from our social perspective into both a descriptive framework and normative guidelines" (Symons & Walsham 1988, p131).

Thus the emphasis is on understanding evaluation from a social perspective. In a later work, Symons (1991) (following the contextualist approach of Pettigrew (1985)) suggests that the best way to achieve this understanding is to consider the content, context, and process of evaluation. While content, being concerned with what is to be measured (the information system) deals with the more traditional objectivist measurement of criteria, context deals with the intra-organisational and broader contexts of historical, social and economic circumstances. Process is concerned with how the evaluation takes place as an "analytical, educational and political" (Walsham 1993, p53) process of organisational learning, or reality construction, and being determinant of context and strongly influenced by context, mediates between the two (Serafeimidis & Smithson 2000). Symons believes that evaluators themselves should consider each of these "layers" (Farbey *et al.* 1993) in order to manage evaluation:

> Consideration of the interactions between content, context and process in evaluation draws in the social and qualitative aspects of IT and prevents the narrow focus on technical, administrative and quantifiable economic elements which has in the past proved so dysfunctional. (Symons 1991, p211)

However, although Symons claims that this approach has implications for the practice of IS evaluation, Canevet (1996, p65) believes that it is not implementable, and "remains an analysis framework". Certainly it has been used for the purpose of analysis by Walsham (1993) who adopted this framework for the interpretation of various aspects of IS, including evaluation. Based on three detailed case studies, analysed using the content, context, process approach, Walsham synthesises a perspective on IS evaluation, as shown in Figure 6. In this analysis, interpretive

evaluation designs are those that focus on "evaluation as learning" through "the widespread sharing of ideas between all interest groups" (Walsham 1993, p178). The synthesised perceptive points out that in such situations "consensus cannot always be achieved" (see Figure 6). Thus while the approach is very productive in providing an interpretive perspective on evaluation it places little emphasis on providing an interpretive approach.

A synthesised perspective on IS evaluation

The Nature of IS Evaluation

- The process of IS evaluation involves a discourse, often mediated by formal procedures, but in the context of informal stakeholder assessments
- The outcome of a formal evaluation exercise forms an interpretative scheme, which embodies norms and provides a control and co-ordination facility
- A formal evaluation can have both overt and covert functions, and can be seen in some cases as a ritual
- Interpretive evaluation designs focus on learning and understanding, but consensus cannot always be achieved

The Role of an IS Evaluator

- IS evaluators include those with formal authority, but also other stakeholders
- A ritual element is a part of the evaluator's role in both preordinate and responsive evaluation designs, but the symbolism is different
- An IS evaluator is both an enactor of meaning involved with organisation making, and also a moral agent concerned with norms, values and power relations

Figure 6: A synthesised perspective on information systems evaluation

(Walsham 1993)

By way of contrast, where Serafeimidis (1996, p190) has also adopted the content, context, process view, which he terms an "interpretive contextualist framework", the ultimate purpose in using the framework for research is to develop an approach "based on the broader conceptualisation of the context, the content , the process of evaluation and their interactions…to provide the conceptual foundation for a more

rigorous methodological proposal". His methodology proposes that there are five stages in the investment life cycle:

1. Opportunity identification;
2. Investment strategy formulation;
3. Decision making;
4. Implementation;
5. Review.

For each of these stages a module is defined, which identifies and describes a number of appropriate actions. Although an interpretive perspective is adopted in the research, the aim is to provide a formal/rational method, which can itself be computer-based (Serafeimidis *et al.* 1996), for the process of evaluation. IS evaluation is seen to be an information intensive activity, where information, both soft and hard, if suitably stored, can provide an adequate representation of the underlying reality.

Other authors who acknowledge the social dynamics and variable organisational context of IS evaluation, and whose response is to impose structure on this context through the use of quantitative instruments, include Robey, Farrow and Franz (1988), who focus on the assessment of conflict in the evaluation process; Davis and Hamann (1988), who present a measuring instrument to assess context; Byrd and Marshall (1997), who call for typologies and taxonomies to reduce the error variance in qualitative approaches, and Remenyi and Sherwood-Smith (1997), who propose a formative evaluation methodology. Interpretive approaches thus appear to be of use in IS evaluation for analytical purposes[13], or as a basis for new kinds of methods.

[13] I would further caution that from the epistemological point of view, the label "interpretivist research" must be carefully examined. It has, for example, been used to mean that non-quantitative techniques of analysis are used (Lacity & Hirschheim 1996) or that a contextualist framework has been adopted for what is essentially survey research (Canevet 1996). In proposing a methodology for formative evaluation, Remenyi and Sherwood Smith term it "post-modern" and redefine "post-modern" to "suggest new and experimental directions in management thinking and of course especially management thinking as it applies to information systems development" (Remenyi & Sherwood-Smith

Once again we are struggling back towards the rational/objective end of the Hirschheim and Smithson (1988) continuum. Not-withstanding these criticisms, it is important to note that there is a small but growing body of research that proposes or adopts an interpretive approach to IS evaluation research, in contrast to the predominant objectivist approach.

3.3.1 Returning to the evaluation vignette

What relevance might this research have for managers in practice? Let us return to our thought experiment, and to Susan who we last saw poring over the journals in her local business school library. Susan is at first very excited, because she has encountered some work which may enable her to approach the system evaluation problem in a convincing way. If she can persuade senior management to understand the system in the context in which it is necessary, then perhaps she can get approval for the system. Intuitively she likes the idea of understanding not just the content of the system (in financial and non-financial terms) but also the process necessary for evaluation, and the context in which is must take place.

Unfortunately what Susan cannot find is a straight-forward methodology that will let her put all of this together. The process and context part also seem very hard. They address issues like learning and culture, and Susan, an information systems manager, is very uncomfortable with the idea of trying to work with these. All the ideas seem terribly academic and not related to her immediate problem.

Susan is very troubled by her lack of progress, and obviously quite stressed when she bumps into John. John, as a director of information technology, is a member of the senior information systems portfolio committee to whom Susan must shortly present her as yet non-existent proposal. He is also very technologically savvy, and convinced of the necessity for the bank to remain at the leading edge of information systems implementation. John is therefore not pleased to hear of Susan's lack of

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1997, p4). Many post-modernists hesitate to define the term themselves (Bjorn-Andersen 1988), since a definition would be contradictory to the very spirit of post-modernism. To apply "post-modern" to a methodology is self-contradictory.

progress, but is quick to come up with a solution. The corporate strategy division, he tells Susan, while it is still working on the balanced scorecard, has come up with a list of strategic drivers which will direct the banks activities in the future. If she can tie her project into the strategic drivers, which have been endorsed by the CEO, the portfolio committee will have little choice but to approve the project. In fact the CEO himself will be at the meeting, because such a large project is on the agenda, and he will be very pleased to see the results of his latest strategy session in use so quickly. John promises to send Susan the list. He also warns her, however, that a cost benefit analysis will be considered mandatory in a proposal of this nature, and that she must include one in her proposal.

When Susan gets the list of strategic drivers she is very relieved. There, in black and white, and on the strategy division letterhead, it quite clearly states that the e-delivery of financial services across traditional and new electronic channels and the reduction of the cost to income ratio are critical to the success of the bank

With reference to this document, Susan draws up a proposal in which she points out that the new system, by providing a "fault-tolerant, resilient platform for mission critical financial transactions", will support electronic delivery across multiple channels, as well as the low cost processing of financial transactions. In fact, the more transactions the bank can process, the lower the cost per transaction will be, and the higher the cost to income ratio on electronic processing. The cost-benefit analysis is a little more difficult. However, by making some assumptions about the nature and costs of down time in the banking environment, and increased (and therefore lower cost) transaction processing, Susan is able to draw up a reasonable convincing calculation. Certainly the result, in terms of net present value is positive, and the system appears to provide a rate of return well in excess of the minimum required in the bank. A matrix of system benefits to the business drivers, and weighted risk analysis, as well as an implementation schedule, complete her proposal. As a concluding note Susan points out that: "This investment will provide a world class financial transaction processing system that will enable the bank to be the dominant player in the provision of money transmission services."

Susan is at last comfortable that she can approach the policy committee meeting with a firm and well defined proposal in hand. Unfortunately, what Susan does not know, and what John has neglected to mention to her, is that there are members of the committee who are strongly opposed to any further large scale information technology projects at this point. The bank is facing tremendous pressure from its new owners to improve profitability through direct cost-cutting methods, and the information systems budget, currently somewhere around R1billion per annum, is an obvious target for such pruning.

At the meeting, these committee members are quick to perceive what Susan has done. While Susan, defended by John, puts up a valiant attempt to defend her proposal as rational, they attack it as being unfounded, or at least simply ritualistic. The cost benefit analysis is firstly attacked and then brushed aside, and an attempt by Susan to explain the strategic matrix becomes mired in a misunderstanding of what the strategic drivers actually are. It seems the words Susan used in the matrix are slightly different from those discussed at the strategy session, but an attempt on her part to explain how they basically mean the same thing is swiftly dismissed as “intellectual claptrap”. Accusations of empire-building, and ego-stroking fly across the table. Susan’s proposal appears to be seen as a purely political ploy on the part of senior information systems management (in particular, John) to maintain the budget. Susan, who genuinely believes in the value of her assessment, suddenly finds herself in a corporate battlefield. The meeting is very uncomfortable indeed.

Thus we see Susan, who would very much like to be a rational and good manager, forced into a political game in the evaluation of this system. She is forced, it seems, to conform to one of two opposing archetypes in evaluation, each one operating at different ends of the Hirschheim and Smithson (1988) continuum, the objective/rational manager or the political/subjective manager. In the following section I shall discuss these archetypes with a view to assessing how they address the problem of information systems evaluation.

3.4 Archetypes of Evaluation

There are two archetypes of IS evaluation. On the one hand there is a prescriptive notion of IS evaluation as an objective rational process and on the other, a sense that IS evaluation is essentially a product of personal subjectivity and potentially political ritual. If we explore each of these archetypes more carefully we can see the difficulties that each presents.

3.4.1 Objective/rational evaluation

Faced with major information systems failures, and "indifferent information systems evaluation practice as a major problem area" (Willcocks 1992) IS researchers and consultants propose an ideal model of evaluation as an objective and rational process, to be conducted for the purpose of decision making, by an informed and rational manager. Such a model fits well with the stock character of a manager as described by Introna:

- The manager is a rationally motivated and purposive individual (who will for the purpose of maximising return on investment, rationally evaluate information systems options and investments)
- The manager efficiently and effectively transforms: unskilled labour into skilled labour; raw material into products; investments into profits (and information systems systems into business benefit)
- The manager's only benchmark is measurable economic performance (a positive economic outcome is the only criteria for the information systems evaluation decision)
- The manager is the master of technique and technology (including information technology and IS evaluation techniques)
- The manager is the creator and sustainer of economic wealth and well being (generator of wealth through appropriate technology evaluation and decisions)

(Introna 1997, p23), extensions in parentheses added.

In contrast to this stock character, ambiguity and uncertainty are the rule rather than the exception in the managerial role. This is equally true of IS evaluation, which equally defies the necessarily simplistic and deterministic approaches that comprise

the objective process. The notion of evaluation as an objective rational process conducted by the informed rational manager is not borne out in practice: The complexity of the situation is such that evaluation is inevitably, from the objective, rational point of view, insubstantial (Fitzgerald 1998). So while there has been much interest in providing further evaluation approaches for the rational manager, "there remain serious problems in trying to assess, objectively and quantitatively, the business value of information systems" (Smithson & Hirschheim 1998, p168).

The desire to persist in the requirement for objectivity and rationality stems from the Cartesian requirement for detachment and reductive explanation. However, as Spinosa, Flores and Dreyfus (1997) point out, Cartesian practices hinder adaption to change. Since information systems so often change, or are enablers of change in organisations, it is not surprising that IS managers and researchers too may find themselves "living in a profound state of resignation [as] they feel themselves losing touch with the world … failing to develop analytical explanations of ever new domains" (Spinosa *et al.* 1997, p10). Thus the failure to develop objective means of evaluation leads to descriptions of IS evaluation practice as "indifferent" and "insubstantial".

3.4.2 Political/subjective evaluation

If IS evaluation is not rationally objective, then by way of contrast it may be characterised as personally subjective, and politically significant. This is the second archetype of IS evaluation, and the one that is, in my experience, most often suggested by managers themselves. Given that functional approaches to evaluation (CBA, matrix approaches, UIS) have serious limitations, the only alternative seems to be personal, subjective judgement. Many managers respond to this notion with distaste, as it seems to point to a slippery path to pure subjectivity and even solipsism. The objective-subjective continuum seems to be angled down to the right, with managers engaged in a constant effort to crawl up, back to the safety of methods, frameworks and certainty.

Furthermore, given the highly political nature of most organisations, personal judgement, once made, is often disguised in the form of functional dressing up, for

purposes of ritual and the appearance of rationality. In such situations, the evaluation itself becomes strategic, rather than communicative, with the result that the potential for domination and (self-)deception emerges (Outhwaite 1994). Organisations may use evaluation procedures that are not part of the formal evaluation, or even recognised as evaluation procedures as such (expert panels for example), or set up adversarial methods of proposal presentation (Farbey *et al.* 1999). Financial measures may be used as control or gatekeeping mechanisms by senior managers (Serafeimidis & Smithson 2000). In such cases the course of action that is taken as a result of the evaluation may well be sub-optimal for the organisation, and even irrational (Burrell 1994; Lyytinen & Klein 1985; Outhwaite 1994; Wilson 1997).

Interpretive approaches to IS evaluation seek to move beyond the purely subjective to a point of understanding the evaluation itself. In practice what this means, however, is that most of the interpretive work on IS evaluation is interpretive in itself, but more limited when it comes to describing IS evaluation *as* interpretation. As Smithson and Hirschheim point out, "within this understanding zone, there seems to be a significant gap between theory and practice" (1998, p171). Managers, when confronted with this work, see interpretive academic research, but little that relates to what they actually experience, and thus "few organisations are attracted to this paradigm" (Serafeimidis & Smithson 2000, p94). Descriptions of subjective and political action ring true, but the opportunities for generating real understanding seem limited, and the options reduced again to objectivity or subjectivity.

Thus there are two opposing viewpoints, each of which purports to address the problem of IS evaluation. In the first, rational managers must be more disciplined in defining the object of evaluation, and in applying more rigorous methods. In the second, managers are acknowledged to be subjective in the process of evaluating an information system. Rational methods, where adopted, are often entirely political, for the purpose of providing the appearance of rationality and, therefore, meaningless as evaluation outside of ritual purpose. (Hirschheim & Smithson 1988).

3.5 Conclusion

At this point I have taken a second turn about the hermeneutic circle, to include non-functionalist views of IS evaluation. The notion of a complex negotiated reality, suggested to me by Zuboff's (1988) work, I found to be applied to evaluation by Hirschheim and Smithson (1988), and a small body of interpretive research. As an alternative to the viewpoint presented in chapter two, a political/subjective understanding of IS evaluation goes some way towards explaining paradoxical practice: because information systems are social, subjective and political objects with a technological component, managers do not apply rational methods of evaluation, but rather approach evaluation from a subjective perspective. Information systems are socially constructed technical objects, within a socially constructed reality.

The apparently stable notion of objective IS evaluation has thrown up its opposite, political/subjective evaluation. These opposing thoughts have no way of reconciling with each other: objective evaluation does not admit political action as valid (rational), while political action only allows for objectivity in the service of political ends.

This dualism, while instructive because it is broader and more complex than a simple functionalist view, does not provide a point at which my hermeneutic journey can rest with any comfort. In the following chapter, therefore, I shall outline each of these views as archetypes of evaluation, pointing out their limitations with a view to overturning this duality and providing a more satisfactory dialectic understanding of IS evaluation.

4 Information Systems Evaluation In-the-world

Neither of these opposing stereotypes, however, is satisfactory in providing a way out of the thicket of the evaluation problem. Thus we are faced with a dualistic dilemma in need of a dialectic solution. A means of overturning this dualism is to use the dialectic concept of the manager as being in-the-world. This concept suggests that rather than being a decision maker, the manager is in-the-world. She evaluates systems in order to get the job done, on the basis of her thrownness in-the-world. Her understanding of the system emerges from the always already present and significant whole of her existence, until she reaches resolution about the system. Thus the manager appropriates meaning about the system in the process of evaluation. This process can be effective if the manager skilfully understands the situation and is aware of her prejudices, whilst always remaining open to revising them. She must, furthermore, be able to express appropriately her use of both pragmatic judgement and additional information where this has served to articulate distinctions about the situation.

4.1 Introduction

This chapter describes a third turn about the hermeneutic circle. The objective is to derive a dialectic understanding of evaluation that can overturn the dualism evident in the two contrasting and archetypical views of information systems evaluation as either objective or subjective. The dialectic concept of *Dasein* is thus used to describe the manager as being-in-the-world. Conditions for effective evaluation are then discussed.

4.2 Evaluation In-the-world

In the previous chapter I discussed two archetypes of evaluation. Common to both is a notion that evaluation is something done by a subject (the manager) to or about an object (the system). As Spinosa *et al*. put it, we start "with our Cartesian preconceptions of *what* we and things are" (Spinosa *et al.* 1997, p17). An alternative, which will allow us to overturn the subject/object ontology and therefore both objective and subjective modes of evaluation, is to "begin with *how* we, in fact, deal

with ourselves and things in our everyday coping" (Spinosa *et al.* 1997, p17). That is by extending the current understanding to embrace Heideggerian notions of involvement and coping, we can transform both archetypes to a dialectic description of the everyday managerial practice of IS evaluation.

Let us return to our thought experiment of the manager, Susan, who is involved in an IS evaluation. We recall that given a specific set of circumstances (namely increasing customer demand for online financial transactions), the need arose for a particular type of system (one which will provide increased capacity and resilience). Susan then engaged in evaluating a number of systems architecture alternatives. She immersed herself in the system specifications and prototypes for several weeks, evaluating the systems in a fairly intuitive and non-systematic way. After this it seemed obvious that the tandem processing architecture was most suitable.

Susan was then faced with the task of convincing others that her judgement in these matters was correct. At first she could not find a way of justifying her selection, because the normal cost benefit techniques did not seem to apply. When questioned by George, the accountant, she began to feel that it might not be so terribly obvious that a system was justified at all.

She had to try to reconstruct her thoughts and decision to try and explain her rationality. She therefore produced an "objective" evaluation which addressed the strategic business drivers, as well as risk, cost and implementation schedules. She was very careful to use the most recent strategic information available, and to make sure that the assumptions behind the proposal, both functional and financial, produced the "correct" answers.

Other managers in the organisation perceived the ritualistic nature of these actions, but depending on whether or not they supported the decision, they defended them as rational, or attacked them as political. Susan, who genuinely believed in the value of her decision, suddenly found herself in a corporate battlefield, protected only by the thin armour of her formal rationality.

How might we describe these circumstances, making sense of the manager's strongly-held conviction that she genuinely understands the right course of action? In Heideggerian terms we can see that this manager in a manager in-a-world where customers show up as important and requiring responsiveness, because of her concern for customers in the business world. She is thrown into this world and therefore cannot understand her decisions by isolating them, but will nonetheless, on the basis of her skill, proceed from irresolution to resolution. Decisions will emerge rather than be made. This description is one that requires further discussion. Let us consider each element of the description in turn.

This manager is a manager in-the-world. She is not a Cartesian subject holding objective or subjective views about the system. Rather the manager is a being-in-the-world. This unity of being-in-the-world expresses the notion that being and world are not independent entities somehow related to, or tied to, one another. The world is not "out there" but is something in which the manager always already is, already involved and already compromised.

"In" in this sense is not to be understood categorically as physical inclusion in a thing which is world (like a rabbit in a hat). "In" is rather to be understood existentially as an involvement in a world which is a structural whole of meaningful connections. Thus I might say that I am "in" academe. This means that the world of academia forms a meaningful whole in which I can operate. In the same way the manager is in-the-world: the world forms an intelligible whole in which the manager can function.

Spinosa *et al*. (1997) call this world a disclosive space and point out that while "cultures are obvious candidates for worlds … we can also think of professions as worlds. Thus we speak of the worlds of medicine, business, academics, the theatre, politics, sports and so on." Our manager is in-the-world of business and in-the-subworld of her particular firm, where practices will presuppose the shared practices of the larger world (business) of which it is a part.

The manager is not an autonomous self-sufficient source of intelligibility possessing mental states and acting in terms of intentionality. She derives her being (her intelligibility) from Being There[14] (in-the-world). That is, her being is dependent upon the world of shared social practices. She interprets herself in terms of these practices, and so we say that her existence is self-interpretation within a sub-world. The manager is in-the-world in as much as she has become socialised into the practices of that world – in her case the world of business- and the information systems that operate in the context of that business. Thus in order to distinguish her from a novice manager, I will refer to this manager as an involved manager.

The involved manager understands what she does, and what entities can show up, without explicitly considering these. Susan understands the mainframe system within the context of the bank and the customers it serves without having to consider it an object in itself. It is like other entities, understood in the doing - in the skills and practices which she embodies. In fact, making this understanding completely explicit is impossible for her because for the most part she has no beliefs and principles (in the cognitivist sense) but only skills and practices.

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14 Being There is a translation of the term "*Dasein*". "*Dasein*" in colloquial German can refer to "everyday human existence" (Dreyfus 1991, p13). To grasp it most easily we can conceive of *Dasein* as a "human being" (or any being that has the same way of being). At the same time this term is also a play on two German words "da" - there, and "sein" - to be. So *Dasein* is "being there" (Cooper 1996, p26).

This is important because the reason that Heidegger adopts this term (rather than just saying "human beings") is that he wants to avoid the notion of human beings (us) as meaning-giving, conscious, transcendental subjects in the Cartesian tradition. That is, *Dasein* is not an autonomous self sufficient source of intelligibility possessing mental states and acting in terms of intentionality. It derives its being (its intelligibility) from Being There (in-the-world). Heidegger explains that 'understanding of the world, as understanding of Dasien, is self-understanding. Self and world belong together in one being, *Dasein*' (Zimmerman 1981, p27).

It can be argued that, on occasion, the manager will explicitly consider things as things, as objects in themselves. This is certainly the case, and is referred to as a situation of breakdown. Normally entities are "available" because they function smoothly, as part of the "equipmental whole" into which they fit. Under such circumstances they are transparently available for use. However, when there is a breakdown in the use of equipment, the entity becomes unavailable, and occurs as an entity, to be considered in itself. However, in all cases, entities show up as themselves, because of the equipmental whole – equipment in the context of meaningful everyday activity - that they constitute for the manager. Entities may reveal themselves as unavailable in breakdown, but only because they were first available to the manager, in the concernful way in which she had already interpreted them.

Therefore the involved manager can be described as "interpretation all the way down" since she grounds herself (exists) within the context of a certain world of shared social practices which is at base only an interpretation of possible ways to be human. All understanding is interpretation. But how does the manager know *what* to interpret?

The involved manager does not encounter mere stuff or flesh to which she then assigns meaning. She does not encounter a human being whom she subsequently treats as a customer. Neither does she encounter a long cylinder containing ink that she subsequently treats as a pen. Rather she directly encounters customers, pens, chairs, desks in-the-world, where they are available as such, because they fit into the equipmental whole of practices for using or dealing with them. Thus, for example, customers show up as customers. Furthermore, customers show up as important because of the involved manager's concern for them. Concern, in this case, is not equal to anxiety, but rather a characteristic of the involved manager's being-in-the-world and the reason that customers matter to her as significant.

The involved manager proximally encounters things through concern, always already understanding and able to cope with these things. The manager's everyday mode of

being is a mode of awareness or openness in which she concernfully copes with available equipment in the world. That is, the manager is always concernfully in-the-world, in some specific circumstance or disclosive space. This space (or clearing) is the current area of concern and towards-whichness in which things are dealt with in a specific way (as customers as important).

Thus customers show up in the world as customers because of the manager's concernful coping as a manager in-the-business. The way in which they show up (as important) is characterised by Spinosa *et al.* (1997) as style. Style is what constitutes things, people or activities as what they are, in a particular disclosive space. Style is what determines the *way* anything shows up and makes sense for us. Thus the manager is in a world in which customers show up as customers as important (she is obviously in a competitive business, rather than a monopolistic one, for example).

In this world, things always already matter to the manager. She is always already in a situation. Being "already-in" a situation means that she is constantly attuned to a range of activities and projects that are possible in her shared social context. In other words, certain things show up as possible or mattering, and others not. For example, Susan, while concerned with the resilience and capacity of the system, and the service that is thereby provided, is not concerned with the need to wash the floor of the computer room, or pray for her customers.

The world is first of all intelligible to the manager by way of her familiarity with significance - that is, she can make sense of the world because she understands her for-the-sake-of-whichs - the way in which her activities will make longer term sense. Within a particular culture, a particular manager will have a range of possibilities within which particular actions make sense. These existential possibilities show up without reflection. This implies that the manager is *thrown* in her particular world, and therefore cannot understand her decisions by isolating them, because she cannot avoid acting, nor can she step back and reflect on her actions. She, in fact, has no stable representation of her actions because she does not relate to things through having representations of them. (For example, her ability to write comes from her

familiarity with writing, not from her knowledge of a pen. (Winograd & Flores 1987)) She has only an "always already involvement whole" (Introna 1997) in-which she is.

Therefore the manager cannot understand her decisions by isolating them. She will nonetheless, on the basis of her skill, proceed from irresolution to resolution. Decisions will emerge rather than be made. This may, at first, seem strange, since normally we would consider that the manager will do her job by making decisions. If however, we consider carefully the question, "what do managers do?", we will see that "doing is an interpretation within a background and a set of concerns. People talk and walk and breathe and move their hands… Without a more specific orientation, the question "what do people do?" is meaningless" (Winograd & Flores 1987, p143).

The specific orientation within which the manager can act is provided by a field of disclosedness, or openness in which projects and equipment can show up. This clearing is the current area of concern and towards-whichness in which things are dealt with as possibilities for being a manager in that world. Within this clearing, things always already matter to the manager. She is always already in a situation.

Therefore, whenever the manager needs to resolve a situation through evaluation, she essentially finds herself in a situation of confusion, which is nonetheless always already oriented to a certain direction or orientation of possibilities. Thrown into the situation, her "decision" will flow from the fact that she is always already involved in the world. Some of the possibilities will not show up at all. Other possibilities will be progressively excluded until she is committed to a particular course of action, a course of action that was available and significant within the world and as part of the involvement whole. Rather than making a decision, she will proceed from irresolution to resolution.

She may attempt to structure a decision about the system, but the involved manager's condition of being thrown in the world does not allow for any other kind of resolution. The system is not "out there" to be measured and decided upon, it is part of her world. It may be a distinctive part of her world, but it is not one that can be

separated from the involvement whole or her own significances (for-the-sake-of-whiches) as a manager.

Without a rational, structured decision, why should the manager feel that her resolution is a good one? The answer to this question depends on how we understand the concept of resolution. If we believe that resolution equates to cognitive problem solving (decision), then the rational choice of the best alternative from a set of all possible alternatives would be a good decision. However, the manager will not have access to all possible alternatives. All possible alternatives do not exist for her. She is unable to make a rational, distanced choice, because she is thrown in-her-world. She will, finding herself in a situation of irresolution, always already oriented to certain possibilities (determined by her for-the-sake-of-whiches) deliberate on the matter until resolution is reached.

Winograd and Flores (1987, p150) point out that "much of what is called problem solving does not deal with situations of irresolution, but takes place within the normal state of resolution. For example, when a linear programming model is used to schedule operations in a refinery, the "problem" to be solved does not call for a resolution." Resolution, rather than the application of algorithm to pre-defined problem, is "the exploration of a situation" . Such exploration, rooted in-the-world in which the manager always already is, gives rise to an understanding of the situation of irresolution, enabling the movement toward resolution, which will appear to the removed observer as a decision.

In Heideggerian terms understanding occurs at both originary and thematic levels. At the originary level, the manager has an understanding (*Verstehen*) of what it is to be a manager that enables her transparent and skilful coping as a manager. This understanding provides "the projective sketch of the horizon" (Caputo 1987, p69) within which some actions are revealed as particular possible coping activities, and things show up as themselves (customers as customers).

At the thematic level, interpretation is understanding made explicit. Caputo (1987, p69) points out that "understanding and interpretation differ, not in kind but in degree of completeness. Interpretation makes the possibilities projected by understanding determinate and specific." On the basis of pragmatic and existential understanding, a specific situation is interpreted as such, giving an "articulated grasp" of the cultural world (which was revealed by the originary *Verstehen*).

Thus, we return to the hermeneutic circle, in which there is no presuppositionless understanding but rather "a question of finding the right presuppositions" (Caputo 1987, p71). Interpretation cannot occur without pragmatic understanding, but will itself articulate and refine that understanding. This process may be referred to as appropriation, or the actualisation of understanding (Introna 1997, p69).

In other words, the manager can be said to have reached a good resolution if she has been able to appropriate meaning about the situation: a good evaluation of an information system is the appropriation of meaning about the system, and the revelation of possibilities for action. A good resolution is possible if the conditions for appropriation have been met.

A) Conditions for Appropriation.

Based on the discussion of understanding, and Introna's (1997) explanation of hermeneutic understanding, I have synthesised some conditions for appropriation.

The first of these is what Introna refers to as the overlap principle: "a text can only be understood in terms of a pre-existing whole". This whole can be understood as "*Erlebnis*" which is experience or, rather, the significant whole within which "the unity of experience ... stands in an immediate relationship to the whole" (Gadamer 1975, p62). Thus in order for overlap to occur, the "receiver must engage in the hermeneutic circle, [with an] understanding of *Erlebnis*, the context or large whole from which the text emerges." (Introna 1997, p70). For the manager, this implies a deeply skilful understanding: knowing the situation without "knowing" the particulars

(Polanyi 1969). To expand on the overlap principle, the first condition for appropriation can be expressed as follows:

> The manager must engage in hermeneutic interpretation in terms of a pre-existing skilful understanding of the whole situation (*Erlebnis*).

Erlebnis is, however, only possible if a person is open to possibilities. Gadamer (1975, p319) tells us that " the experienced person proves to be, ..someone who is radically undogmatic; who, because of the many experiences he has had and the knowledge he has drawn from them is particularly well equipped to have new experiences and to learn from them. The dialectic of experience has its own fulfillment not in definitive knowledge but in that openness to experience that is encouraged by experience itself." This openness implies not that the manager will have no prejudices or pre-judgements, but rather that she will have a knowledge of these, while remaining open to the situation and the possibility of revision. Our second condition is:

> The manager must have an awareness of her presuppositions and stay open to the possibility of revising these.

Thirdly, the manager will be required to express her interpretation. This will necessitate a common lexicon. Winograd and Flores (1987, p70) tell us that the process of going from irresolution to resolution is "a kind of conversation (in which one or many actors may participate)" . Thus our third condition is

> The manager must be able to express herself in language appropriate to her *Erlebnis*.

Fourthly, the manager's pre-existing understanding must be pragmatic, rooted in her informed practice as a manager. Hermeneutic understanding cannot be achieved without this phronesis, or practical wisdom, which is for hermeneutics "the only kind of knowing" (Coyne 1995, p48). As a fourth condition:

> Instead of paying lip service to the importance of theory, the manager must appropriate meaning based on her pragmatic understanding

Finally, hermeneutic understanding "is not the same as representational knowing" (Introna 1997, p70). Cognitive decision making is based on the idea that a manager has abstract knowledge of alternatives (facts) from which the most suitable choice can be made. In this idea information provides the basis for decisions. Hermeneutic understanding functions in a very different way, allowing the manager to make sense of the business world in which she always already is. Additional information may further articulate the whole (in-form), or not. Therefore,

> In appropriating meaning, the manager must make sense of the situation, based on an understanding and articulation of the whole.

Thus, returning to our manager, we can say that she can reach a good resolution if she

- skilfully understands the situation,
- is aware of her prejudices,
- is open to revising them,
- can express herself appropriately,
- uses pragmatic judgement,
- uses additional information to articulate distinctions about the situation.

This description does not provide a method for the manager to evaluate the system. It does not, on the other hand, preclude method, providing methods are engaged on the basis of understanding rather than the other way round. What is essential is that our manager is involved, skilful, open-minded and articulate. This is an intuitively appropriate definition of a good manager who is able to reach good resolutions. From the point of view of IS evaluation, it suggests that the manager must understand the system within the greater whole that is the business. She must be involved in-the-business and be able to articulate the specific characteristics of the system. Method and technique will not substitute for involvement and skill.

4.3 Conclusion

This chapter provides an alternative view of evaluation that overturns the opposing archetypes of rational decision making versus political ritual. Yet another turn about the hermeneutic circle leads me to abandon the dualism in favour of a dialectic

hermeneutic understanding of IS evaluation. This understanding can be expressed as follows: rather than being a decision maker, a manager is in-the-world. She evaluates systems in-order-to-get-the-job-done. She does this in-the-world in which she is thrown, rooting her understanding in the already present and significant whole of her *Erlebnis*. Evaluation of an information system by a manager is the appropriation of meaning about the system, and can be effective if the manager skilfully understands the situation and is aware of her prejudices, whilst always remaining open to revising them. She must furthermore be able to express appropriately her use of both pragmatic judgement and additional information where this has served to articulate distinctions about the situation.

However, my journey does not end here. Having reached a dialectic consideration of evaluation on the part of an individual manager, I now face a requirement to consider a further practical issue: how do groups of managers (rather than a single manager) evaluate a system? What does evaluation look like in the organisational context, for this is after all the situation in which most information systems evaluations take place? Therefore, in chapter five, I shall explore evaluation as understanding further, in the organisational context. This I shall do by considering evaluation as learning, and more specifically as organisational learning.

5 Information Systems Evaluation in the Organisation

This conceptualisation provides an intuitively appropriate account of information systems evaluation on the part of an individual manager. More frequently however, groups of managers, as members of the organisation, need to reach a common understanding about a system. This then poses the question: How do organisations evaluate systems? Given that evaluation has been characterised as learning, it might appear useful to explore the idea of organisational evaluation as organisational learning. In the main, however, the organisational learning literature is strongly functionalist, and caught on the horns of its own dualistic dilemma: Is organisational learning a characteristic of the organisation itself or of the individuals within the organisation?

While the mainstream organisational learning literature is thus not helpful in understanding organisational evaluation from a hermeneutic perspective, it guides us, nevertheless, towards a more satisfactory account: that of organisational learning as a process of encultured knowing. This account suggest that, in the organisational context, managers can come to a common understanding about an IS because they collaborate in communities of practice. Thus a narrative, situated, pragmatic knowledge will be most useful in evaluation, which is itself a process of encultured knowing in the organisation. Evaluation, in other words, happens in the course of skilful conversation.

5.1 Introduction

In the previous chapter I described how the problematic dualism of rational versus political IS evaluation can be overturned by a dialectic hermeneutic understanding of evaluation in-the-world. Using Introna's (Introna 1997) conditions for appropriation I was able to describe how a manager could reach a good resolution in evaluating a system. For our manager, however, the problem does not end there. Recalling the description of chapter four, the manager, Susan, having made her evaluation, now has the task of convincing others that her judgement in these matters is correct. When questioned, she cannot say why she selected the specific system or even why it is so

terribly obvious that a system is justified at all. She must try to reconstruct her thoughts and decision to try and explain her rationality.

Assuming that Susan can explain her evaluation in terms of appropriation rather than rational decision making, she might be able to avoid the problem as described. The situation, however, is probably even more complex. She is likely not only to have to explain her evaluation to others, but even to have to make that decision as part of a group. Thus, in the organisational context, it is not adequate for the manager to appropriate meaning personally. A group of individuals needs to appropriate meaning and reach consensus on that meaning.

Another journey around the hermeneutic circle is required: one that will enable me to expand the notion of evaluation in-the-world from a single manager to groups of managers, or whole organisations. Unfortunately, other than the functionalist descriptions of CBA and other methods, there is no immediate path for my next turn about the hermeneutic circle; "organisational evaluation" is seldom discussed.

An alternative, and perhaps closely related path is organisational learning. Like Guba and Lincoln (1982), Walsham (1993, p177) characterises evaluation as a form of learning:

> An evaluation exercise supported by organizational authority for action, whether formal or tacit in nature…provides an opportunity for personal appraisal, the sharing of ideas between individuals and interest groups, with the aim of generating consensus agreement and thus commitment to the resulting proposals for action. This can be summarized in the phrase *evaluation as learning. (*emphasis in original)

In this chapter I shall therefore conceptualise IS evaluation as a form of organisational learning, and explore ideas of organisational learning in an attempt to understand how evaluation in the organisational context can be effective. Once again, the bulk of this literature falls within the mainstream functionalist paradigm, and we shall see that in

fact current organisational learning theory does not provide us with an adequate account of the inter-subjective character of organisational evaluation. This is nonetheless an important stage in the journey. The main body of literature cannot be ignored, and it will point to a more useful conception of organisational learning as encultured knowing, which is best understood on the basis of the critique of organisational learning which now follows.

5.2 The Organisational Learning Literature

As Fiol and Lyles (1985, p803) pointed out: "No theory or model of organisational learning is widely accepted." Despite this assessment now having been made fifteen years ago, the multiplicity of models, frameworks and constructs to be found in the organisational learning literature indicates that it still holds true.

Much of the work to be found in organisational learning (as befits a field which has in some form existed in various disciplines for at least thirty years), takes the form of reviewing the existing literature, and synthesising some sort of theory from that. Each review takes a different view of the field (re-view), looking at it from a broader or narrower perspective perhaps, or articulating different aspects of importance.

Hedberg (1981) assesses how organisations learn, with emphasis on refuting the assumptions of perfect learning prevalent in the literature. Fiol and Lyles (1985) clarify a distinction between organisational learning (insight leading to change) and organisational adaptation (unreflective change). Levitt and March (1988), taking a narrower view, emphasise organisational routines, and ecologies of learning; while Huber (1991), basing his review on a "broad and evaluative" examination of the literature, articulates four constructs related to organisational learning. These constructs are the knowledge acquisition, information distribution, information interpretation and organisational memory, each of which is seen to been important to improving organisational learning. These constructs are, as Pentland (1995) acknowledges, similar to the collection of knowledge processes that comprise the latter's framework: constructing organising, storing, distributing and applying.

However, underlying all the mainstream literature on organisational learning there is an assumption, sometimes surfaced and sometimes not, as to whether this learning is taking place *in* the organisation (by individuals), or *by* the cognitive organisation itself. As Jones points out "there are widely differing views on how [the implicit cognitive model of organisations] is to be interpreted. Does it really mean that organisations are entities capable of cognition, or is it just a metaphor?" (Jones 1995, p61). Jones is convinced that the former is "unlikely to be satisfactory" (1995, p71), but it is certainly the case that many authors adopt this position. Hedberg (1981, p6), for example, argues that "it would be a mistake to conclude that organisational learning is nothing but the cumulative result of their members' learning. Organisations do not have brains but they have cognitive systems and memories."

In all of the work in organisational learning, this assumption must be made. Is the organisation itself learning, or is it just that individuals in the organisation are learning? This is the ontological assumption underpinning all the theories, which are themselves epistemological, trying to understand how individuals or organisations change what they know. Thus in the review that follows I shall first of all discuss learning *in* the organisation, and then learning *by* the organisation[15].

5.3 Learning in the Organisation

The basic premise of learning in the organisation is that organisations learn only when their individual members learn (Simon 1991). In this view, organisational learning is a metaphor for (Agarwal, Krudys & Tannniru 1997; Dodgson 1993; Pedler, Boydell & Burgoyne 1989) or a way of seeing (Morgan 1986), individual learning within organisations, rather than a literal interpretation (Jones 1995).

[15] Magalhães (1998) has already drawn a distinction between individual and social views of organisational knowledge and learning. This distinction is, however, quite different from that which I am suggesting. Magalhães discusses both learning in and learning-by-organisations in each of these views. His distinction is between the underlying epistemologies of the theories in each case: individual views draw on models of individual learning, while social views draw on the social constructivist model of learning. Magalhães also distinguishes some 'critical and alternative views'. These include both learning in and learning by assumptions.

According to Argyris and Schon, (1978) “organisations do not literally remember, think or learn”, yet organisational learning as a metaphor is necessary to deal with the paradox that “organisational learning is not merely individual learning, yet organisations learn only through the experience and actions of individuals”. Primarily, however, their theories deal with “individual learning within single organisations” (Levitt & March 1988, p320).

Argyris and Schon’s Theory of Action articulates a view of how individuals learn, or do not learn, in organisations and how managers or leaders can facilitate such learning. Much of the popular work in learning organisations is based on this theory (De Geus 1996; Garvin 1993; Senge 1990a; Senge 1990b; Starkey 1996; Stata 1989), which is reviewed in the section that follows.

5.3.1 The theory of action

Learning, in terms of the Theory of Action, takes place when actors detect and correct mismatches or errors between intentions and actuality (Argyris 1996b). According to this theory, actors have underlying programmes that determine their intentions. These might also be termed mental models (De Geus 1996). When the action is changed to conform to the underlying programme (as when a thermostat adjusts heating to maintain a constant room temperature (Argyris 1977)), then this is called single-loop learning. This behaviour might be described as adaptive learning, “which is about coping”, or ensuring “fitness to standard” (Senge 1990b, p7).

In contrast, Argyris (1996b) describes a kind of learning behaviour which aims at adjusting overall rules and norms (the underlying programme) rather than just specific activities or behaviours. This is double-loop learning. Whilst Huber (1991, p93) suggests that “more systematic empirical studies [would] not find the two types of learning to be distinct in practice”, the distinction is made by multiple authors in different terms. For example Senge (1990a) refers to “generative” learning and Fiol and Lyles (1985) to “higher level” learning. The distinction is seen to be important because double-loop learning facilitates more effective organisational action, and is

more likely to produce the useful outcomes that are “the goals of learning” (Dodgson 1993, p378).

At a third level, Argyris and Schon (1978, p4) suggest that deutero-learning is appropriate in organisations, allowing “members to learning about previous contexts for learning”. This is learning about learning, or meta-level learning (Jones 1995).

Equally important to the Theory of Action is the idea that “human beings manifest two kinds of theories of action. One that they espouse and the second that they actually use (theory-in-use)” (Argyris 1996b, p79). Senge (1990b, p14) illustrates this: “Often our actions reveal deeper views. For example, I may proclaim that people are trustworthy, but never lend friends money and jealously guard my possessions.” Model 1 Theory-in-use refers to a set of four governing values, which Argyris (1991, p103) believes are held around the world. These are:

1. achieve your intended purpose,
2. maximize winning and minimize losing,
3. suppress negative feelings,
4. behave according to what you consider rational.

Why would individuals hold these values? Because “the purpose of all these values is to avoid embarrassment or threat, feeling vulnerable or incompetent” (Argyris 1991, p103) or to fulfil the universal requirement to “save face”. In order to save face, individuals develop “defensive routines” (Argyris 1990), through a self-reinforcing process in which the Model 1 Theories-in-use produce strategies of bypass and cover-up, which are then themselves covered up with further defensive routines. This programming “occurs early in life” (Senge 1991), but can be reversed if people are “taught how to recognise the reasoning they use when the design and implement their actions”. Double-loop learning in respect of their own personal programmes can allow people to “reason productively”, rather than defensively (Argyris 1991, p106).

5.3.2 Critiquing the theory of action

The Theory of Action is strongly dependent upon a cognitivist or information processing point of view. This epistemology "can be traced back to the mid 1950s when Herbert Simon, Noam Chomsky, Marvin Minsky, John McCarthy and others developed a particular way of knowing," and presumes that learning is the formulation of "increasingly accurate 'representations' of … pre-defined worlds." (Venzin, von Krogh & Roos 1998, p37) These representations, or mental models, are never entirely complete however, and thus individuals are subject to bounded rationality (Dodgson 1993). The Theory of Action tells us that, in the face of incomplete knowledge, individuals invoke programmes of defensive action in order to save face, thus fulfilling a deeper programme or theory-in-use. If they can be "re-programmed" to recognise this faulty reasoning, they can focus on "collecting valid data, analysing it carefully and constantly testing the inferences drawn from the data". They can be "analytical and data driven" (Argyris 1991, p106).

The Theory of Action is thus based on a strongly cognitivist epistemology in which knowledge is equated with information and data, which is in turn representative of an objectively true reality. Learning to change is "above all else, an information process" (Macdonald 1995, p559). The human brain is "a "machine" of logic and deduction (Krogh & Roos 1995, p14) much like a computer, and can accordingly be taught to abandon "old programming" (Argyris 1992-1993, p16).

As Magalhães (1998, p97) points out: "The cognitivist view of organisations has been challenged by many authors and from many points of view." In fact, cognitivism has been strongly challenged at the individual level as well, most notably by Dreyfus (1991), who tells us that artificial intelligence is "a degenerating research program" precisely because it relies on a cognitivist or computer-based model of the very intelligence it is trying to emulate.

The cognitivist view is unsatisfactory because it holds that thinking is "merely some form of rapid data processing" (Roszak 1994, p xxii), structured by scripts or frames (Dreyfus 1998), which must themselves be structured by a meta-frame. This meta-frame is ultimately what we understand as a common-sense context.

According to the cognitivist view, common sense is a system of beliefs or rules. These may be implicit or tacit (Nonaka 1994), but can be explicated or made tacit. All incoming information is processed according to these rules, which can themselves be adjusted if necessary. Artificial intelligence (AI) therefore seeks to emulate the rules according to which information is processed, as well as the meta-frame that determines which rules should be used. The problem is that this becomes an "ever expanding web of common-sense scenarios" (Roszak 1994, p xxiv), an infinite task.

The difficulty faced by AI originates from, and points to, the inherently faulty premise of cognitivist epistemology that background knowledge is implicit knowledge, in the form of information (facts about things). Dreyfus (1998, p285) explains that

> the common sense knowledge problem is not only incredibly difficult, it is misformulated from the ground up. As Husserl saw, making background knowledge explicit only makes sense if it is already implicit knowledge. But the everyday context which forms the background of communications is not a belief systems or a set of rules and principles at all, not even a highly complex, implicit one, but is rather a set of social skills, a kind of know-how, any aspect of which makes sense only on the rest of the shared social background. Heidegger also calls this background "familiarity" of our shared "understanding of being". Making this background explicit in terms of a set of beliefs – of knowing that – which backs no appeal to this background is not an infinite task but a task one cannot even begin.

Nonetheless, the computer-based information-processing view remains predominant in much organisational theory. This is as true of the authors who describe learning *by* organisations, as it is of the authors who talk about learning-in-organisations, as we shall see in the next section.

5.4 Learning by Organisations

The tradition of behavioural studies of organisations (Levitt & March 1988) leads to a reification of the concept of organisation (Jones 1995), which in turn leads to the idea that it is the organisation itself which is learning. This, however, introduces a requirement to locate an organisational collective mind, which creates the problem of anthropomorphism (Jones 1995).

One way of resolving the dilemma of "imparting intelligence and learning capabilities to a non-human entity without anthropomorphizing it" (Kim 1993, p40) is to describe the organisation as a system. This is congruent with the behavioural view, which extends the view of man as a "behaving system" to the organisation. Learning is viewed from a behavioural or action-oriented perspective, in terms of "adaptive rationality". This presumes "the simple logical of experiential learning: an action is taken; there is some response from the environment; and then a new action is taken" (March & Olsen 1975, p157). Thus the organisation is "an adaptively rational system that basically learns from experience" (Kim 1993, p41).

An extension of this idea is Daft and Weick's view of the organisation as an interpretation system (Daft & Weick 1984). This view is based on four assumptions. The first of these is that organisations are "open social systems that process information from the environment", more complex than simple natural or control systems. Consequently, in knowing about the environment, the organisation must "obtain, filter and process" or interpret complex information. Interpretation is seen as a critical element of human organisations, and thus the second assumption is that "the organisational interpretation process is something more than what occurs by individuals". This is possible because individuals in organisations share information and reach convergence in interpreting it, thus enabling the organisation to interpret as a system. The third assumption is "that strategic-level management formulate the organisation's interpretation", and the fourth that "organisations differ systematically in the mode or process by which they interpret the environment" (Daft & Weick 1984, p285).

Based on these assumptions, Daft and Weick (1984) propose a model of organisation learning, based on interpretation, as shown in Figure 7. In terms of this model, "organisational learning is defined as the process by which knowledge about action outcome relationships between the organisation and the environment is developed." (Daft & Weick 1984, p286) Learning is the result of the processing of information about actions and the environment, and leads to knowledge about those actions.

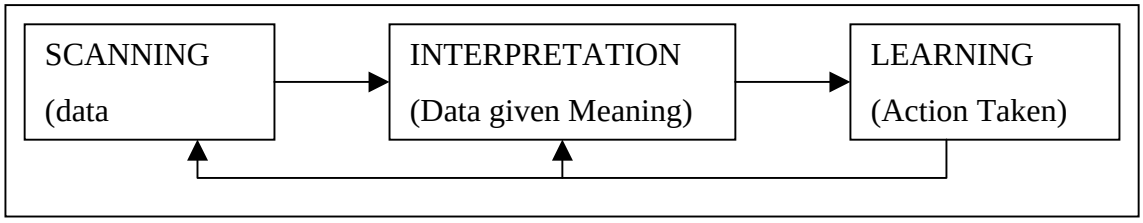

Figure 7: Relationships among organisational scanning, interpretation, and learning

This definition corresponds closely with Huber (1991, p89): "An entity learns as, through its processing of information, the range of its potential behaviours is changed." Kim too, suggests that organisational learning is "increasing an organisation's capacity to take effective action" (Kim 1993, p43).

All of these definitions rely on the concept of learning as an information process. The generic system for processing information suggests that information inputs are processed, giving rise to outputs, which may act as feedback inputs. The process may also store information in some kind of memory. This system is shown in Figure 8.

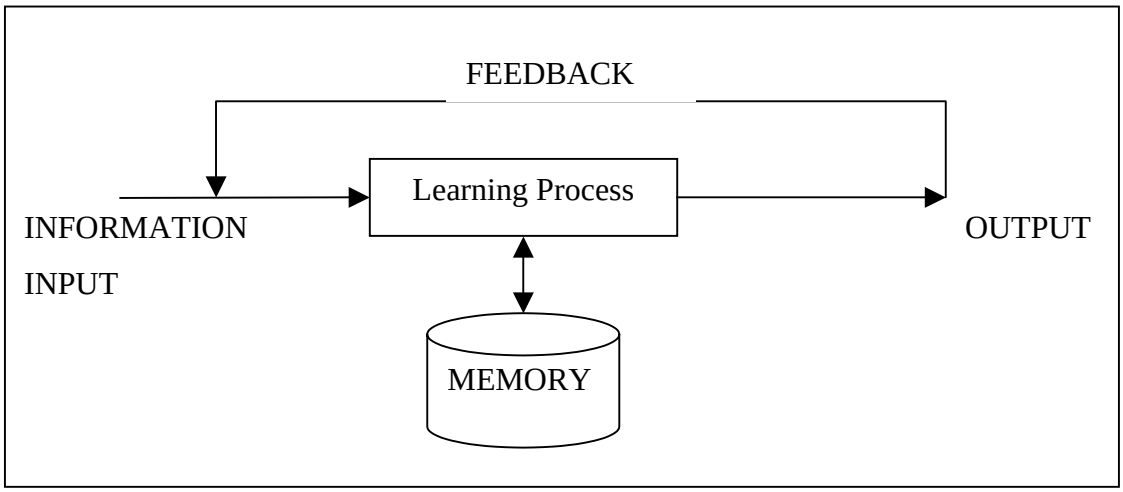

Figure 8: A generic information processing system

Organisational learning in the information processing view can therefore be examined in terms of each of the parts of this system, as follows:

5.4.1 Information input

The information processing view of learning starts with information. According to Daft and Weick (1984) information or data about the environment must first be interpreted or given meaning, before it can act as input to learning. Similarly, Walsh and Ungson (1991, p60) suggest that organisations "functionally resemble information-processing systems that process *information from the environment"* (emphasis added).

This information input is generally loosely defined if at all. For example, Daft and Weick (1984) seem to use "data" and "information" interchangeably, while Huber (1991) explicitly states "the words information and knowledge will be used interchangeably in this paper". Some distinction is made between "data" and "know-how" and elsewhere (Huber 1990) between "hard" and "soft" data, but no rigorous definition is attempted. Desirable qualities of information are suggested, such as media richness and appropriate amounts (Huber 1991).

Thus, depending on the definition, information is obtained from the environment, or from memory (as knowledge). In either case, it acts as an input to "some processing capacity" (Walsh & Ungson 1991, p60).

5.4.2 Learning process

The processing capacity of the organisation acts in the case of organisational learning to change the actions or potential actions of the organisation. There are two broad views of how this capacity functions, the first qualifying the degree or type of learning, and the second describing the steps (sub-processes) involved.

The first view is based on the concept of the adaptive process of stimulus and response (Hedberg 1981). If the process is simply an adjustment response to a stimulus, then the organisation is seen to be engaging in lower-level (Fiol & Lyles 1985) or first-order (Lant & Mezias 1992) learning. This is an extension of the concept of single-loop learning (Argyris & Schon 1978) to organisations. If the process of response is itself examined and changed, then the organisation is engaging in higher level (Fiol & Lyles 1985), or second-order (Lant & Mezias 1992) learning, analogous to double-loop learning (Argyris & Schon 1978).

The second view describes the subprocesses necessary for an information-based learning process. Huber (1991) describes three "constructs", which are learning processes (a fourth construct is memory, discussed in §5.4.3). These are knowledge (or information) acquisition, information distribution, and information interpretation. Knowledge acquisition discusses possible sources of information, namely:

> (1) Drawing on knowledge available at the organization's birth (2) learning from experience (3) learning by observing other organizations (4) grafting on to itself components that possess knowledge needed but not possessed by the organization, and (5) noticing or searching for information about the organization's environment and performance. (Huber 1991, p88)

Information distribution includes the means by which units that possess information and units that need this information can find each other quickly and with a high likelihood. This implies that this information is stored, and that part of the learning process is accessing storage or memory, as shown in Figure 8.

Information interpretation as an organisational process, according to Huber, "requires empirical work for further advancement" (Huber 1991, p88). He suggests that the extent of shared interpretation is affected by the cognitive maps held by individuals (in memory), media richness and information overload (qualities of the information itself) and unlearning (discarding of knowledge held in memory).

Thus we can see that the processes of learning are very closely related to organisational memory. Lower-level learning uses routines or responses stored in memory, while higher-level learning adjusts the content of memory. Information acquisition, distribution and interpretation all potentially make use of information stored in memory, which is discussed next.

5.4.3 Organisational memory

Jones (1995, p71) suggests that "organisational knowledge or memory is seen as a property of the organisation inhering in established phenomena such as organisational culture or formal records", and that this avoids the problem of anthropomorphism attached to concepts such as organisational mind. On the contrary, authors such as Stein and Zwass (1995, p88) assert that "organisational memory is an instance of collective memory", and that it "relies on knowledge that is spatially distributed throughout the process, individuals, and artefacts of the organisation". The difficulty of not being able to experience organisational memory directly is, they suggest, overcome by Walsh and Ungson's view of organisation memory as "a construct that helps observers explain and interpret organisational processes and structures" (Stein & Zwass 1995, p88). (This behavioural view is itself based on Daft and Weick's (1984) view of organisations as interpretation systems, as discussed in §5.4.2.)

If Jones (1995) is correct then organisational knowledge will be present only in culture (which he neglects to define) and records. If Stein and Zwass (1995) are correct then knowledge will be stored in processes and individuals as well. An examination of what it is that is thought to be stored in memory is thus necessary.

A) What is in Organisational Memory?

According to Walsh and Ungson (1991), organizational memory consists of "mental and structural artifacts" (p58) equivalent to "stored information" (p61) that have consequential effects on decisions and therefore performance. These artefacts were originally conceived by March and Simon (1958), to be the standard operating procedures of the organisation. Robey, Wishart and Rodriguez-Diaz (1995) further specify identity, causal maps and organisational routines as constituting memory, while Kim (1993) writes that memory is equivalent to mental maps, which, themselves, consist of routines and frameworks.

Of these concepts, identity comes closest to Jone's (1995) idea of organisational culture: Robey *et al*. (1995, p27) define it as "shared understandings about boundaries, mission and character". In the next two sections I will briefly discuss routines and frameworks in an attempt to clarify the competing terminology.

B) What is a Routine?

According to Levitt and March (1988, p320),

> the generic term "routines" includes the forms, rules, procedures, conventions, strategies and technologies around which organisations are constructed and through which they operate. It also includes the structure of beliefs, frameworks, paradigms, codes, cultures and knowledge that buttress, elaborate, and contradict the formal routines.

Thus, according to this definition, routines are everything that an organisation does, and why. This is "recorded in collective memory that is often coherent but is sometimes jumbled, that often endures but is sometimes lost" (Levitt & March 1988, p320). As Dodgson (1993, p382) points out, "such a broad definition has limited

value". In fact, over time, different perspectives have evolved of routines as they "have become a cornerstone in theories of organizational learning and adaptation" (Pentland & Reuter 1994, p484).

Routines were first seen as fixed response to a given stimulus: According to March and Simon (1958, p142) "most behaviour, and particularly most behaviour in organisations, is governed by performance programs". Pentland (1994, p486) points out that "th[is] idea provides the foundation on which much subsequent theorizing about routines has been based."

The computer metaphor of routines as "programmes" allows the concept to be abstracted to organisations, and even populations (Miner & Haunschild 1995). Routines are then "argued to be independent of the individuals who operate within them and use them, and are capable of surviving considerable turnover in individual actors" (Dodgson 1993, p384). In fact, "standard operating procedures constitute behaviour repertoires which are available to many members and which are frequently inherited between office holders." They exist at the organisational level and "are for organisations what cognitive structures are for individuals", allowing a "single stimulus to evoke a sophisticated response". (Hedberg 1981, p6-7).

To the extent that organisations respond to stimuli in this fashion, they can be said to be engaging in low-level or single-loop learning (Hedberg 1981). As they become more efficient in the response, they learn from direct experience, and become more likely to use the routine in the future (Levitt & March 1988). This can, however, lead to a "competency trap" as increasing efficiency leads the organisation to retain the use of sub-optimal routines (Hedberg & Jonsson 1978).

Higher-level or double-loop learning will occur when the organisation questions the validity of the routines and assembles new responses. However, "theories of meta-level learning are few – which suggests that few instances of it have been observed" (Hedberg 1981, p8). This has been variously attributed to the confusion of experience due to cognitive limits, much like those that constrain rationality (Levinthal & March

1993), delays and distortions in the routing of information (Huber 1991), and information overload (Huber 1990).

C) What are Frameworks?

According to Levitt and March (1988), routines include frameworks. Kim (1993) and Robey *et al*. (1995), however, see frameworks (or causal maps) as distinct from routines. They are the belief systems that guide the choice of routines, based on shared assumptions about the outcomes of those routines. Thus higher-level learning relies on frameworks, which are the meta-level constructs guiding the new responses. In other words, the organisation has to refer to something when deciding on the validity of a routine, and the framework is what it refers to.

D) How is Memory Structured?

Stein and Zwass (1995) tell us that memory is "spatially distributed". This leads to the question "where?" In other words, how is memory structured? According to Walsh and Ungson (1991, p58), "memory's retention facility can be structured in terms of five retention 'bins'". These are individuals, culture, transformations, structures and ecology.

Individuals store organisational memory in their own remembering, in their cognitive orientations, and in their own records and files. *Culture* embodies past experience in frameworks, symbols, stories, and rumour. *Transformations* embody the logic that guides the processing of input into output, or standard operating procedure. *Structures* embody the roles that people play, which themselves represent rules of behaviour. *Ecology* is the physical setting of the workplace, which "encodes and thus reveals a good deal of information about the organization" (Walsh & Ungson 1991, p68).

Stein and Zwass (1995) point out that apart from the mention of records and files, Walsh and Ungson (1991) do not allow for information systems as a repository of organisational memory. Like Huber (1991), Stein and Zwass believe that information systems are an increasingly important component of organisational memory, both in

helping humans to cope with “their roles as information processors” (Stein & Zwass 1995, p90), and as an explicit store of memory.

Huber (1991) suggests that both hard and soft information will be computer-resident. Hard information such as transactions artefacts is best stored in computers which are “superior to the human components of organizational memories” (Huber 1991, p106). In fact it seems that all information can “with sufficient foresight ... be readily indexed and retrieved through computer technology” (Huber 1990, p60). Even soft and local information with be computerised with the increased “availability of robust and user-friendly procedures for constructing expert systems” (Huber 1990, p61).

5.4.4 Outputs and feedback

Some authors believe that the output of learning must necessarily be changed action. Jones (1995) refers to this as the “outward-looking and action-oriented view of organisational learning” and suggests that it is predominant in the mainstream literature represented by authors such as Fiol and Lyles (1985).

Other authors however, suggest that “learning need not result in observable changes in behaviour” (Huber 1991, p89), but rather changes in potential behaviours. Kim (1993, p38), for example, refers to the organisation’s “capacity to take effective action”. However, without changed action, there is unlikely to be any feedback. It may be useful therefore to see outputs as changed action, and changed capacity or potential behaviour as a change to a routine or framework stored in memory.

The difficulty with this body of literature is that while the underlying construct of learning as an information process (Macdonald 1995) is common, the use of concepts is not consistent. Thus for Levitt and March (1988) a framework is part of a routine, while for Walsh and Ungson (1991) it is a store of learned cultural information, which is distinct from a transformation, which is a store of a standard operating procedure, or routine. Hopefully the imposition of the concepts onto to the information-processing model has clarified these without sacrificing the accuracy of the review.

5.4.5 Critiquing the information processing view

Like individual learning, the information-processing view of learning by an organisation has cognitivist roots. At the organisational level, Boland criticises the metaphorical complex through which cognitivism has transformed the organisation "into a calculating machine" (Boland 1987, p369). This can be seen in Hedberg, as quoted by Huber (1991, p6): "There are many similarities between human brains and organizations in their roles of information processing systems."

This view can be criticised for at least two reasons. Firstly, if the information processing view is inadequate at an individual level, then there is little reason to believe it should work at an organisational level. Secondly, as Boland points out "any fantasies which present disembodied ahistoric images of information divert us from a search for the lived experience of organizational members and must be rejected." (Boland 1987, p377).

Furthermore, while most writers on learning-by-organisations acknowledge individual learning as a component of organisational learning, writers on learning-in-organisations tend to dismiss the possibility of learning-by-organisations, and assert that "organisational learning" is, therefore, just a metaphor.

The difficulty in resolving this dichotomy is clear in Jones (1995), where we see that there are

> … a number of problems with the concept that organisations are capable of learning independently of their human members. Many of these may be traced to the way in which the terms organisational and learning are interpreted. Thus organisational is taken as referring to the object undertaking the learning, and learning is treated as the summation of a number of relatively simple, technical properties. This problem is exacerbated by loose application of terms such as knowledge, information and data' (p64)

while at the same time

> defining organisational learning as always dependent of human interpretation does not mean that … it is necessarily a simple aggregation individual learning' (p65)

We thus have a situation where learning only by individuals appears to be inadequate. At the organisational level however, Hedburg admits that "no theory or organizational learning is based on empirical observations of organizational behaviour" (Hedberg 1981, p6), prompting Leymann (1989) to attack the "myth of organizational learning".

Neither of these views, it would seem, is helpful, or can overcome the other, even within a cognitivist paradigm. Once again, my attempt to understand IS evaluation is caught on the horns of a dualistic dilemma. I therefore require a means of describing organisational learning that can give a more satisfactory account of the inter-subjective dimension of evaluation. In the following sections I will show that the mainstream organisational learning literature is uncomfortably split between individual and organisational learning because it presumes that learning creates an objective store of knowledge. An alternative view of learning as socially constructed knowing can overturn this dichotomous view.

5.5 Organisational Learning as Encultured Knowing

As shown in the previous sections, the tension between learning-in-organisations and learning-by-organisations cannot be resolved within a cognitivist paradigm. Furthermore, in considering evaluation in-the-world I have already stepped outside this paradigm. Thus the mainstream organisational learning literature has not assisted me in understanding IS evaluation. I require a conception of learning, therefore, that overcomes the learning-in versus learning-by dichotomy, and that can provide a useful interpretation of evaluation as organisational learning.

The mainstream organisational learning literature has "with few exceptions" adopted a "positivist theory of knowledge" (Spender & Grant 1996, p46). This literature adopts primarily embrained, embedded and encoded views of knowledge (Blackler

1995). That is, knowledge is described as conceptual and cognitive, residing in systemic routines, or conveyed by signs and symbols respectively.

If we consider theories of learning-in-organisations we can see that these are based on individual cognition or embrained knowledge. The distinction between single and double loop learning, for example, encourages explicit before-the-mind thinking about adaption processes. Theories of learning-by-organisations stress knowledge embedded in organisational routines, and encoded in manuals and information systems.

What is neglected in the positivist literature, however, are notions of knowledge as embodied (or action oriented) and encultured (or achieved through socialisation) (Blackler 1995). These notions, relying on neither individual cognition, nor objectivist system views, may well provide insight into evaluation in the organisational context[16].

5.6 Embodied Knowledge

Embodied knowledge is closely allied to the concept of tacit knowledge, or knowledge that is not easily expressible. According to Venzin *et al*. (1998, p49), "embodied knowledge refers more to the process of knowledge development and where knowledge actually resides. Tacit knowledge, on the other hand, describes the more inherent attributes, the condition of the knowledge category, so to speak."

Blackler's definition however, quite clearly describes embodied knowledge as a category of knowledge that is "action-oriented and likely to be only partly explicit" (Blackler 1995, p1024). As expressed by Nonaka, tacit knowledge consists at least

[16] Learning, in this discussion, is taken to mean that which produces knowledge, as does 'knowing'. These definitions are somewhat loosely swopped about in the literature: Blackler, for example, uses 'knowledge' in (Blackler, Crump & McDonald 1998), where he used 'knowing' in (Blackler 1995). It seems too that the concept of organisational learning has been overtaken in the popular literature by 'knowledge management', which is obviously more marketable by 'management' consultants.

partly of technical skills, expertise developed by a master craftsman “at his fingertips” (Nonaka 1996, p21). It also has a cognitive dimension of mental models and beliefs.

In contrast to tacit knowledge is explicit (embrained) knowledge. Together they suggest four knowledge creating patterns, in which knowledge may move from tacit to tacit (as in apprenticeship), from tacit to explicit (through articulation), from explicit to explicit (in a transfer of information) and from explicit to tacit (thereby internalising new knowledge) (Nonaka 1994, p18). Organisational knowledge is created as it spirals through each of these, from personal tacit, to personal explicit, to organisational explicit, and thence to organisational tacit knowledge (Nonaka, Umemoto & Sasaki 1998). This is the process that enables knowledge-creating companies.

This approach is, however, as Blackler (1995) puts it “rather traditional”, relying as it does on knowledge as a specific entity, constrained by mental models and beliefs. Thus knowledge in this approach can be combined rather than divided (Hedlund 1994), and appears in different forms.

This is a symptom of the “formistic” type of thinking that is “inherent in any typology” (Tsoukas 1996, p14) because typologies rely on discernible differences and similarities to provide categories for classification. Thus the creation of knowledge types, explicit and tacit, creates an artificial boundary between them. Polanyi (1969, p144), on the other hand, tells us that “all knowledge it either tacit or rooted in tacit knowledge”, and criticises the assumption that all tacit knowledge can be made explicit:

> the assumption that mental processes consist in explicitly identifiable performances… fails, because mental processes are recognised to a major extent tacitly, by dwelling in many particulars of behaviour that we cannot tell. (Polanyi 1969, p152)

Perhaps less objectivist is Zuboff’s description of embodied knowledge as “action embedded skill” (Zuboff 1988, p53). This sort of knowledge depends on sentience,

and is concrete and specific, rather than conceptual and technical: “The knowledge that underlies action-centered skill does not enjoy an independent life outside of those practical activities in which it can be learned.” (Zuboff 1988, p175) Zuboff also suggests that these skills can be codified but is aware that this “can destroy the sense of meaning inherent in action-centered skills” (p180). Her suggestion that textualization can also be the occasion for the construction of new meaning, through a process of informating has been both adopted as a catchphrase and criticised for naivety.

5.7 Encultured Knowledge

Encultured knowledge is perhaps less subject to such reification, because the very definition refers to a process rather than an object: “the process of achieving shared understandings” (Blackler 1995, p1024). This means that all knowledge is encultured knowledge, which can then be embodied, embedded, encoded or embrained. Encultured knowledge refers to the process of knowing, which must lead to all types of knowledge. The phrase “encultured knowing” captures this distinction more clearly.

In considering knowing as a process, there has been “a shift away from thinking about knowledge as a commodity that individuals and organizations have or may acquire, towards the study of knowing as something that they do” (Blackler *et al.* 1998, p74). This shift is described by Star (1992, p396) as “this intellectual movement, which as yet has no name”. Attending to this perspective has not just highlighted the link between knowing and social processes, but actually suggests that knowing is socially constructed, and therefore situated and pragmatic, within communities of knowing. A description of this process follows:

5.7.1 Knowing is socially constructed

Knowing is developed in social or collaborative processes. Tyre and von Hippel (1997, p72) suggest that “collaborative processes are important because no one person embodies the breadth and depth of knowledge necessary to comprehend complex organizational problems”. Spender and Grant (1996) go further, to question the

concept of the individual. At the very least, they say, individual learning must take into account the context of the organisation on whose behalf the individual acts. Furthermore, since every person is both an independent and a purely social being, they argue for the idea of a sense of collective identity, leading to the notion that "both individual and collectives have knowledge-based identities" (Spender & Grant 1996, p53). This creates something of a dilemma: "It is not easy to determine which is logically or temporally prior." (Spender & Grant 1996, p53) On the basis of the argument that individuals are only proficient once socialised into an organisation, he concludes that collective knowledge must be the basis of individual meaning. Only on the background of socially constructed meaning, is individual interpretation possible.

But how can collective knowledge exist without individual knowledge? The answer may lie in the argument made by Star (1992), that individual's knowing, or "tasks that appear to be the product of individual minds", "are in fact distributed and collective" (Star 1992, p396). In this view robust, collective, knowledge is constructed out of local truths: Although these are inevitably partial and flawed, jointly they create a "robust, emergent social order" (Star 1992, p403). Thus the meaning of knowledge is determined not by its constituent facts, but "in its consequences" (Star 1992, p402).

Even in the laboratory sciences, knowledge is best viewed as a social construction, for as Feyerabend (1993, p158) tells us: "There is not a single rule that remains valid under all circumstances and not a single agency to which appeal can always be made." In fact any rule is bound to be "incomprehensible when abstracted from the collective practices that give it sustained social meaning" (Spender & Grant 1996, p55). Thus knowing is not only socially constructed, but it is constructed in practice, and is therefore situated and pragmatic.

5.7.2 Knowing is situated and pragmatic

The concept of situated learning suggests that codified and abstract knowledge is seldom adequate, except in a context of use (Tyre & Hippel 1997). Furthermore, codified and abstract knowledge, as expressed in canonical practice, is frequently at

odds with the situated demands of organisational exigencies. In fact each particular situation is important, as it presents a particular mix of resources (Tyre & Hippel 1997), which will be used in a particular way, depending on their significance in the particular concrete circumstance (Lave & Wenger 1991). Theories of learning that rely only on canonical practice are inevitably blind to actual circumstantial practice in organisations.

A well-known description of such practice is Orr's (1990) detailed ethnography of Xerox photocopier service technicians ("reps"), which observed substantial differences between espoused and actual practice. The abstract road maps provided by training and documentation differ widely from the concrete terrain in which the reps find themselves on a daily basis. Rather than acting according to formal job descriptions, training and documentation, reps engage with the situated demands of major and minor breakdowns. These consist of technological, social, cultural and physical issues. For example, in the situation of attending to a broken photocopier machine (and its irate users), replacement of a broken machine becomes, instead of a logical solution, an admission of failure that might undermine the trust of the client. Reps therefore engage in collaborative and narrative constructions of knowledge (specifically by going to breakfast before work), which enable them to diagnose faults in a manner that replaces the inadequate map provided by their manuals with a highly situated view of photocopier machines, as encountered in situations of breakdown. Where "any single machine may have profound idiosyncrasies", reps need to know the machines they work with "as shepherds know their sheep" (Brown & Duguid 2000, p5). Only in such situations of practice can abstract knowledge be adequately integrated with practice to provide insight into a given phenomenon (Leonard-Barton 1992).

Conventional wisdom holds that practice is merely doing. Informed practice, or *praxis*, is more than this. It is "reason in action" or "playing the game" (Introna 1997, p69), inseparable from action, always within and part of the situation. Gadamer (1975) tells us that *praxis* gives rise to *phronesis*, or practical wisdom. This is the quality of knowing that is not merely trained ability, but a more complex ability to

perceive the particularities of a given situation, and combine these with the generality of principles (Introna 1997). While working, people constantly form new interpretations and understandings; they continually learn. This pragmatic view tells us that the theoretical follows from the practical.

5.7.3 Knowing is narrated within communities of practice

Following from the above - that knowing is collaborative, and that it is situated and pragmatic - we can infer that knowing is situated within communities of practice. A community of practice is a group of individuals who engage in common practice, and in so doing, develop "unique interpretive repertoires" (Boland & Tenkasi 1995, p351).[17] Such a community may not coincide with organisational boundaries (Brown 1998), or even physical settings (Tyre & Hippel 1997). A single individual may very well be a member of multiple communities of practice, within and external to the organisation.

Such communities of practice are usually quite singular. Even where practices and knowledge across communities appear to be homogenous, each community will have its own configuration of meanings and routines. Included in this configuration is language, which is made and remade through action within the community. Each community is engaged in its own language game, since "the *speaking* of language" is itself "part of an activity or a form of life" (Wittgenstein 1974, p11). Such speaking is intricately part of the way of knowing in the community, for the language game changes as practices change. As Boland and Tenkasi express it, the unique knowledge of a community "develops by refining its vocabulary, its theories and values and its accepted logics through language and action within the community of knowing" (Boland & Tenkasi 1995, p355).

In particular, the use of language as narrative may be used to tell a story which surfaces the implicit assumptions or background of meaning on which actions are taken (Boland & Tenkasi 1995), as well as the events themselves (Goldstein 1992).

[17] Star (1992, p406) describes this as 'investment in forms': the pragmatic use of particular structures of action, creates a 'structural web', 'rooted in practice and local contingency'.

This process overlaps with notions of collaboration and social construction, since "shared narratives are obviously communal and thereby collaborative" (Brown 1998, p225). These narratives serve not only informational functions, but also help participants develop situated skills and establish identity within the community. Ultimately, "collective wisdom depends upon communal narratives" (Blackler 1995, p1037).

Boland and Tenkasi (Boland & Tenkasi 1995), following Bruner, point out that narrative is not an idle luxury of tea-time chatting, but a fundamental cognitive process through which communities of practice are constructed and maintained. Narratives are distinct from logical arguments, validated by criteria of interest and plausibility, rather than logic and consistency. Rather than relying on demonstrable proof, they show how events and things might fit, given a particular cultural situation. This creates room for negotiation (Czarniawska-Joerges 1995), not only of the situation but also of the very meanings attendant in the situation. Czarniawska-Joerges (1995, p13) gives an example:

> 'Corporation X began to suffer losses, and only when the general manager introduced "lean production" did it start making profits again'; 'You are mistaken; what they did in fact was to restructure their investment portfolio, and that did the trick' .

The outcome of this negotiation will determine not only what caused the organisation to make profits, but also the understanding of concepts such as "lean production" (company-saving or job-destroying) and "restructuring" (company-saving or selling-off-the-family-silver). Not only the "why's", but the "what's" and the "who's" are established in a stories and sagas.

The imagined manager, Susan, for example might have told just such a story in the information systems portfolio committee meeting. "Our systems are operating at close to capacity. If we continue to load them they will fall over, and our customers will be standing at the ATMs faced with blank screens. We need to invest in the load balancing system", only to find herself countered: "You are quite mistaken, the trick

is to stick with the single mainframe, but queue the transactions. Our responsiveness will not suffer".

The outcome of this negotiation, will, as in the previous example, determine not only whether or not the project should proceed, but also the understanding of concepts such as "capacity" (is it dependent on queuing?) and "responsiveness" (is 4 seconds still responsive, does it have to be 2?). What does "falling over" mean? Does it necessarily imply a major outage, or just slight degradation in the 99% availability? Would such a degradation of service matter?

Susan's uncomfortable meeting will not only determine outcomes, but also construct knowledge. Out of that particular situation, the managers concerned will wrestle with the ongoing narrative to build for themselves a pragmatic understanding of the requirements of the situation. If the conversation is skilful, they will come to a good resolution.

The human disposition to tell such stories, to narrativise continually, "exploits the richness of the existing repertoire of stories and plots, but it also enriches, challenges and develops this same repertoire" (Czarniawska-Joerges 1995, p13). For example, at Xerox,

> a quick breakfast can be worth hours of training. While eating, playing cribbage, and gossiping, the reps talked work, and talked it continually. They posed questions, raised problems, offered solutions, constructed answers, laughed at mistakes, and discussed changes in their work, the machines, and customer relations. (Brown & Duguid 2000, p5)

Studies such as Orr's (1990) support the claim that the main source of knowledge in organisations is narrative. Thus the suggestion that knowing is narrated in communities of practice refers not to a process of knowledge transfer but to the very process of knowing.

5.8 Conclusion

Encultured knowing overcomes the difficulties of mainstream conceptions of organisational learning. It does not rely on cognitivist or information-processing views. Furthermore, it overcomes the dichotomy of learning-in- and learning-by-organisations, by proposing that learning is collaborative, situated knowing, in communities of practice.

Thus, in this latest turn about the hermeneuetic circle, I have discovered that meaning is constructed through narration on a background of shared social understanding. This notion is congruent with the conception of the information systems manager who evaluates in-the-world. Returning to the description of chapter four, rather than being a decision maker, a manager is in-the-world. She evaluates systems in-order-to get-the-job-done. She does this in-the-world in which she is thrown, rooting her understanding in the already present and significant whole of her *Erlebnis*. Evaluation of an information system by a manager is the appropriation of meaning about the information system.

Considering organisational learning as collaborative knowing has enabled me to expand this understanding as follows: In the organisational context, managers can come to a common evaluation about an information system, because they collaborate in communities of practice. This implies that narrative, situated, pragmatic knowledge will be most useful in evaluation, which is a process of encultured knowing in-the-organisation. Evaluation happens in the course of skilful conversation.

Unfortunately it is also the case that evaluation conversations are often not skilful. Witness our imaginary senior information systems portfolio committee meeting, which I do not think is atypical. My hermeneutic understanding, while expanded, is not entirely satisfactory. In the next chapter I shall, therefore, examine why it might be that these conversations are so rarely skilful, with a view to understanding what we might do about it.

6 The Information Systems Evaluation Conversation within a Regime of Truth

At this point in the argument, however, a disjuncture is apparent between the account of evaluation as individual understanding and the account of evaluation as a skilful conversation. This gap remains un-bridged because we cannot simply extrapolate from the individual to the organisation. The organisation is not just a collection of individuals but also a network of power relations in which the production of knowledge is political throughout. Conversations as generators of meaning are never held outside of power: systems evaluations as conversations cannot take place outside of a regime of truth. The prevailing regime of truth within which these conversations take place is that of Gestell, or instrumental reason, and cannot be escaped.

6.1 Introduction

At this point in my argument I have overturned the subjective/objective evaluation dualism to suggest a dialectic account of evaluation as hermeneutic understanding on the part of the involved manager. I have also overturned the learning in/learning by organisational learning dualism to suggest that knowing is a conversational process. Thus information systems evaluation takes place, at the organisational level, in the course of skilful conversation.

My journeys around the hermeneutic circle have led to a somewhat more satisfactory understanding of evaluation in organisations. Yet the disjuncture evident between the account of evaluation as individual understanding and evaluation as a skilful conversation suggests a gap between, rather than a fusion of these horizons. A further turn about the circle seems necessary, in order to account not just for individual and organisational evaluation, but for that which connects or distinguishes the two, as the case may be.

As Caputo (1987, p81) points out, “any exercise in hermeneutic interpretation comes down to its ability to provoke in us the ultimate hermeneutic response: ‘ That is what we are looking for. That puts into words what we have all along understood about

ourselves.'" The account of the manager engaged in evaluation seems to fulfil such a requirement. Common sense would have it that managers should indeed be skilful, articulate and open-minded, in evaluation as in anything else.

My account of evaluation as a skilful conversation may be less congruent. This is not to say that know-how is not constructed in practice. The very "everdayness" of this account rings true. And few managers will contest the vital (life-giving) role of conversation. It is the skilfulness of the conversation that may be problematic. All too often strategic conversations turn into discussions about "fixing the doorbell.., choosing a new secretary and buying a new coffee machine" (von Krogh & Roos 1996, p224). All too often evaluative conversations, especially with regard to information systems, seem to produce unfortunate results and even spectacular failures (Jurison 1996; Mitev 1996; Myers 1994; Poulymenakou & Serafeimidis 1995). If individual managers are skilful, how is it that they have such unskilful conversations? The leap from individual to organisation is apparently problematic in practice too.

This leap is problematic precisely because it is a leap and not simple extrapolation. The organisation is not a collection of individuals in the same way that an individual is a collection of cells. It has, in addition to its collectiveness, the character of an institution, a disciplinary network in which certain actions and conversations can and may take place. "Reason" and "understanding" (reasonable understanding?) labour inevitably under political and institutional conditions (Caputo 1987). The distinction between individual and organisation is power.

6.2 Power in Information Systems

The use of power in the evaluation, construction and implementation of information systems is frequently described as domination. The capacity of information technology to make visible what might previously have been hidden (Zuboff 1988) makes it "more likely to reinforce hierarchical power than undermine it" (Doolin 1998, p306). Such a description would suggest that those who exert authoritative and

allocative power can determine the outcome of an evaluation process to their advantage.

This view of power is congruent with the Habermasian view that communication may be used for strategic purposes. In such a view, while communication may achieve consensus on meaning, such consensus might be systematically and intentionally distorted and is, in fact, likely to be so (Outhwaite 1994, p25).[18] This idea that a conversation can be either communicative (rational) or strategic (dominatory) is based on a uni-directional conception of power as:

- possessed (by somebody or somebodies);
- flowing from top to bottom;
- repressive in its exercise;
- able to be overcome through rationality, and communicative competence. (Introna 1996)

Introna (1996, p93) suggests that Habermasian theory overall is in fact undermined by this "limited analysis and underdeveloped notion of power". The construct of an "ideal speech situation" for example relies on the juridicial notion of power as possessed, and therefore removable, or capable of elimination.

Power is, however, not this uni-directional: "All forms of dependence offer some resources whereby those who are subordinate can influence the activities of their superiors" (Giddens 1984, p16) Thus power is necessarily implicated in all action, whether actors are conventionally "powerful" or not. Conversations, whilst drawing on and producing meaning, are never held outside of power: "Power is endemic to all forms of communication, and is indeed part of the very medium of communication, since it is inextricably involved with language." (Walsham 1996, p135)

[18] This view has been used in information systems studies (Hirschheim *et al.* 1996; Lyytinen & Klein 1985; Mumford 1994; Myers & Young 1997), and has been suggested by Hirschheim, Klein and Lyytinen as the basis for a social action theoretic analysis of the entire field (Hirschheim *et al.* 1996).

The one-sided view of power separates power from rationality or meaning, whereas, as Walsham (1996, p135) points out "what is considered to be rational is contentious, and the result of rational debate cannot be separated from the existence of power to act, whether on a Pacific island or in the context of ISD". The repressive notion of power, based on this metaphysical separation, turns out to be "limited and of little use in understanding much of what constitutes the everyday 'how' of power in modern society … that emerges through the meticulous rituals of power in everyday institutional life" (Introna 1996, p94).

Thus it seems that a Foucaultian concept of power as a pervasive network of relations between forces is essential in understanding the process of evaluation in the organisational context.

6.3 Power as a Network of Force Relations

Foucault's account of power "is not intended as a theory" but rather as an analytic of power with which to understand the "open, more or less coordinated (in the event, no doubt, ill-coordinated) cluster of relations" that is power (Dreyfus & Rabinow 1983, p184). Power does not have an independent objective being but emerges in the network of relations (Introna 1996). Thus Foucault (1994b, p36) tells us that:

> Power must be analyzed as something which circulates, or rather as something which only functions in the form of a chain. It is never localized here or there, never in anybody's hands, never appropriated as a commodity or piece of wealth. Power is employed and exercised through a netlike organisation. And not only do individuals circulate between its threads; they are always in the position of simultaneously undergoing and exercising this power…In other words individuals are the vehicles of power, not its points of application.

This analytic suggests certain "rules of thumb" about power. Power is not possessed. It is not "a commodity, a position, a prize or a plot; it is the operation of the political technologies through the social body".

Power comes from below. "It is multidirectional, operating from the top down and also from the bottom up." Every individual and every institution is both medium and outcome of the network of relations.

Power is not repressive. "Power is productive. It is not in a position of exteriority to other relationships." Power is the "general matrix of force relations at a given time, in a given society". This does not mean that there is no domination, but that all groups are involved in power relations, and no one group controls them in a simple sense.

Power relations are intentional and non-subjective. They are the outcomes of local-cum-contingent action, giving rise to the network of relations in which overall, "the logic is perfectly clear, the aims decipherable, and yet it is often the case that no one is there to have invested them, and few who can be said to have formulated them" (Dreyfus & Rabinow 1983, p185).

How can we consider the construction of meaning in relation to, and interwoven with, power as a network of relations? Foucault (1994b, p31) suggests that instead of asking the traditional question "how is the discourse of truth ... able to fix limits to the rights of power?", we need to ask a question that is "much more down-to-earth and concrete", namely, "how are rules of right implemented by the relations of power in the production of discourses of truth?". Discourse – a particular way of talking about the world – is co-constitutive with power, because "there can be no possible exercise of power without a certain economy of discourse of truth which operates through and on the basis of this association. We are subjected to the production of truth through power and we cannot exercise power except through the production of truth." (Foucault 1994b, p31)

If truth is produced through power, then what implication does this hold for the possibility of skilful evaluative conversations? It would seem that "objective" conversations are never possible. In contrast to the modern functionalist view, which holds that truth about the world as it is (facts) must be separate from individual

subjective opinion (values), it seems that conversations must inevitably transform value choices into facts: “knowledge production is always already, and only value choices; it is always already to a greater or lesser degree prejudged” (Introna 2000b, p5). Furthermore, the values that we hold are co-related to the power relations in which we find ourselves.

Habermas (1993b) suggests that we can escape the exercise of power (strategic action) by sustaining understanding (communicative action) through the ideal speech situation in which all participants can competently and equally raise issues by asking questions; give and refuse orders; call into question what is said; and express their attitudes feelings, concerns and doubts (Introna 1996). In this way emancipation can be achieved: strategic communication can be avoided and communicative action sustained. Habermas is suggesting that the autonomous rational subject can step outside of power.

As we have already seen, however, power is always already involved in action, including the production of knowledge through communicative action. “All action is already strategic action since the subject to be emancipated from the distorting effects of power, through communicative action, is already the outcome of power” (Introna 1996. p95). The notion of an ideal speech situation denies this fundamental link between knowledge, communication, understanding and power.

6.4 Power and Discourse

Knowledge cannot be “produced in a zone where power is suspended” (Introna 1996, p5). The production of knowledge is political all the way down. As Kuhn has shown us, even in the physical sciences it is necessary that “practitioners all agree that a particular piece of work identifies the important problems in a field” (Dreyfus & Rabinow 1983, p197). Foucault (1984, p74) therefore argues that “there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations”. Power and knowledge are linked through discourse in the following way: “ “truth” is

linked in a circular relation with systems of power which produce and sustain it, and to effects of power which it induces and which extends it. A “regime” of truth.”

Thus

> each institution or society has its regime of truth, its ‘general politics’ of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the states of those who are charged with saying what counts as true. (Foucault 1984, p73)

Introna (2000b, p6) explains how such a regime might function:

> For example, the valuing of profit becomes sedimented as ‘facts’[truth] in the income statement and balance sheet of the company, which are themselves necessary to sustain that value. Through the rituals of accounting practices, stock exchanges, and so forth, the income statement and balance sheet become constituted as truth at the expense of equally valid alternative values.

This example is contrasted with other regimes of truth in Table 1, which compares the *defence of a PhD dissertation* (in Science) with *the publishing of the annual report in a company* (in the Capitalist enterprise), and *the delivery of a sermon in a church service* (in the Christian Church).

Regime of Truth	***Science***	***Capitalist Enterprise***	***Christian Church***
Types of discourse which it accepts and makes function as true	*Defending a PhD*; presenting a conference paper; publishing a paper in a peer reviewed journal, etc.	*Publishing the annual company report,* AGM, annual employment review, etc.	*Delivering the sermon*, administering the sacraments, counselling a member of the church, etc.
Mechanisms and instances for distinguishing true and false statements	Review by appointed supervisor, scientific argument and proof, (dis)agreements in viva, using canonical texts/ authority, etc.	Review by the auditors, economic argument (efficiency, profitability), appealing to canonical texts (Hammer, Porter, etc.) or consultants, etc.	Review of sermon by the church elders, use of canonical text for authority, appealing to a higher church authority (for exp the bishop), etc.
The **means by which each is sanctioned**	Examination by institutionally approved examiners, public record, conferment of degree, etc.	Report presented to the board of directors, delivered at the AGM at the official financial position of the company, reaction of stock exchange, etc.	Sermon delivered as part of liturgy, starts with (or follows) the reading from bible, sermon starts or ends with "so says the Lord"
Techniques and procedures accorded value in the acquisition of truth	Scientific method/ Research method	General accepted accounting practices (GAAP), audit process, strategic planning, etc.	Biblical exegesis, interpretations of church edicts,etc.
The **States of those who are charged** with saying what counts as true	Supervisor must have a PhD, examiners must be recognised experts in their field, etc.	Auditor must be a charted auditor, Managing director act ex officio on behalf of the shareholders, etc.	Must be a licensed minister or religion, and an appointed leader in a congregation

Table 1: Regimes of truth in different institutions (Introna 2000b, p7)

This table shows how a particular regime of truth operates in each discourse. Truth is produced through power and constitutive of power. It is through a selected set of mechanisms, techniques and sanctions that the truth is produced and confirmed as such. In other words, this set of mechanisms, techniques and sanctions becomes the norms or rules for understanding what is or may be. This is not to say that norms are rules in the sense of being inescapable truths but that they are the practices accorded value in the production of truth. They are both the normal and normative way of doing science, business or religion.

The extent to which such norms are powerful in the production of truth is evident in the very concept of irrationality, which at its most extreme we define as madness. The managing director who breaks into song in the course of the board meeting, the vicar who dances in the aisle, will be stepping so far out of the regime of truth as to be adjudged insane. Instead, rational and sane people behave as they ought and, in following the appropriate rituals, are able to produce statements that can be afforded the status of truth.

This truth in turn confirms the legitimacy of the regime of truth within which it is. Nonetheless, any regime of truth is always under threat of new power relations and, therefore, new regimes of truth. Norms are not fixed rules, but contingent resources for action, dependent on the power relations on which they draw. If, for example, religious power relations in a society start to crumble, those who continue to draw on the established norms will find their sermons carrying less weight, their truth less and less acceptable as such. As Kuhn (1970) indicated, such shifts in power might be evolutionary or revolutionary—but they are never fixed. The stability of a particular regime (paradigm), and the success of science in general, is determined not by the truthfulness of the truth, but by the authority exercised over the young scientist who is "guided not so much by rational evidence, as we like to think, as by the authority of his teachers and the textbooks" (Caputo 1987, p220).

Nonetheless, regimes of truth are not established by a conspiracy of some sorts. As Introna (2000b, p8) points out: "their origins and sustenance are often due to contingent events that are seized upon as resources for the play of power". The "logic is clear, the aims decipherable, and yet it is often the case that no one is there to have invented them" (Dreyfus & Rabinow 1983, p187). Power is not an intentional domination of subject over subject. No one person or group of persons sets up the norms. Thus, even in the case of scientific paradigms, a shift from one paradigm to another, from one regime of truth to another, will stem not from deliberate dominatory action or fiat, but from local and contingent moves, from "a shift of strategy in coping with the puzzles faced by the scientist" (Caputo 1987, p221).

In summary then, the importance of this analysis is that it shows up for us the network of power relations always already operating in disciplinary society, in the organisation seeking to evaluate an information system. The evaluative conversation can never occur outside of power and is, in fact, at once both constitutive and derivative of the power relations at play. A more detailed examination of this power/conversation is necessary.

6.5 Evaluation as Power/Conversation

In table 2, the analysis of regimes of truth shown in Table 1 is extended to an IS evaluation. This analysis closely resembles the publishing of an annual report within a capitalist enterprise, which is not surprising, as most evaluation processes take place within capitalist or quasi-capitalist (even government is quasi-capitalist these days) organisations. If anything, a perceived problem within such organisations is the degree to which IS evaluation does not conform to the regime of truth (the goals and objectives) of the organisation, and strategic alignment processes are suggested to overcome such slippages (Kaplan & Norton 1996).

Regime of Truth	***Organisation evaluating a system***
Types of discourse which it accepts and makes function as true	*Presenting a business case*
Mechanisms and instances for distinguishing true and false statements	Economic argument (efficiency, profitability), appealing to canonical texts (Hammer, Porter, etc.) or consultants, etc.
The **means by which each is sanctioned**	Report presented to the steering committee that will approve the system
Techniques and procedures accorded value in the acquisition of truth	CBA, feasibility study, information systems strategic plan
The **States of those who are charged** with saying what counts as true	Committee members must have technical understanding and organisational authority

Figure 9: The regime of truth applicable to IS evaluation

Our imaginary evaluation, for example, in which Susan is trying to get the load-balancing system approved, functions exactly within such a regime of truth. Susan's proposal is carefully presented as a business case, using the economic argument of

profitability and appealing to the organisationally legitimate text of the strategic business drivers. The proposal is presented to the senior information systems portfolio committee who can approve the system, and makes use of the business strategy comparison and other "true" techniques; weighted risk analysis and cost and implementation schedules. The committee members should have understanding and authority (this is, after all, the senior information systems portfolio committee) and John has ensured that the CEO, who will be needed to approve a project of this size, is present.

What then, the evaluation committee asks, is the problem? If we can operate within a regime of truth, can we not establish true and appropriate facts in the context of that regime? The problem is that the techniques and procedures ostensibly in use are not used. They have technical, rational problems of their own. Understanding this, managers who must operate within this regime of truth may use the procedures to symbolise rational decision making, a willingness to act, or participation and concern (Langley 1989). Since the organisation subscribes to formal rationalism, (Bryson & Currie 1995), rational analysis in the form of cost benefit analysis and the business case becomes a norm which legitimates evaluation outcomes.

The problem with such symbolic action is that it can become the object of "pervasive and overwhelming cynicism" (Langley 1989, p621) as managers are aware that the formal approaches "are highly deficient in generating real understanding of the costs and benefits of a computer-based system and its human and organizational consequences" (Walsham 1993, p172). Combined with the constitution of committees whose members may or may not have understanding or authority (which is why end-user involvement is such an issue), this leads to a situation where the outcomes are not regarded as satisfactory, even within the organisation (regime of truth). We recall that Susan's portfolio committee meeting, for example was very uncomfortable. The kind of conversation, in which accusations of empire-building and ego-stroking were made, may be considered to be less than skilful. The proposal has lost legitimacy, and unless Susan is very politically astute, it may well be rejected out of hand.

This regime of truth, it would seem, is experiencing incommensurability. There is a crisis in IS evaluation, as the exemplary exercises in problem solving produce answers that even the professors cannot explain. The prevailing reason is not reasonable.

Does this then mean that in evaluation we should step outside of this regime of truth? Into what regime of truth would we step? Some authors have suggested that an emancipatory, or critical regime might prove more useful (Habermas 1993a; Hirschheim & Klein 1994; Lyytinen & Klein 1985; Mumford 1987, 1994; Wilson 1997). And yet such a regime would itself not step outside of instrumental reason as "the *arché*, the *princeps*, the prince, which like all royalty makes its presence felt everywhere" (Caputo 1987, p222). In our technological world, reason inevitably is "instrumental-technological rationality which … is the "logic of domination"" (Zimmerman 1981, p219). We cannot step outside of power.

The inescapable network of power takes this particular form of instrumental reason in all the regimes of truth we have examined. Mechanisms and instances, techniques and procedures are all instantiations of a technological reason which inevitably enframes all action, setting the world up as a resource, so that it is always subject to "this high and mighty principle". Caputo (1987, p223) tells us that:

> This final, most extreme extension of reason's might, of its demands for rational grounds, is the age of *Gestell*, which means the *collected (Ge-)* energy, the accumulating momentum under which man is *put (stellen)*, all of the power of the impulses by which man is driven to put things under the rule of reason, to reduce things to rational rule.

In an age of instrumental reason, everything presents itself (is enframed) as "placed before" the subject for disposal. The essence of technology (in its broadest sense) lies in its capacity to reveal the earth and everything in it as "standing reserve", an input, a resource to be "commanded forth toward a material and artificial end" (Introna 1996, p95). Not only things, but people themselves become as resources, to be deployed.

Thought is produced through a causal process of reasoning. Thus Coyne (1995, p67) points out that the relationship between technological thought and its objects (including man), as "analogous to the relationship between a hydroelectric dam and its river. The river becomes a potential for energy and is no different from coal dug up from the ground, which also yields suitable energy."

The consequence of this enframing is that we find ourselves in a world where "everyday life is determined according to the demands of the economic system" (Zimmerman 1981, p223). The dominant world view (the fact that there is such a thing as a world-as-object view at all) is technological, causal, scientific, arranged towards the achievement of goals and objectives. In such a world, "the embattled IS developer, manager, operator and user" find that they are "in the "thrownness" of everyday corporate life, ..the medium and outcome of *Gestell* irrespective of their choices" (Introna 1996, p96).

Where does this leave us with regard to IS evaluation? We have already seen Susan possibly defeated in the face of the rational imperative of cutting a very large information systems budget. But perhaps her proposal is a good one. And perhaps other proposals, less appropriate to the organisation, and which the managers know to be unsuitable, will be approved because they can demonstrate absolute financial returns, whereas the load-balancing system could not. Perhaps a proposal to decommission the mainframe altogether, and replace it with cheaper client-server architecture will be approved, since the cost in terms of responsiveness, being non-quantifiable, will not make it on to the cost benefit analysis. Perhaps certain types of transactions (transfers from other accounts) will be switched into batch mode. These seem like strong possibilities in the face of the demands of the economic system. Very indirect consequences (a senior citizen cannot be admitted to hospital because she cannot immediately access savings account funds) of low economic imperative (how often is that likely to happen?) will fall by the wayside. Is there any way to avoid these outcomes, for our managers to act otherwise?

6.6 Conclusion[19]

This chapter has served to suggest that power is an important distinction between individual and organisation evaluation and that conversations as generators of meaning can never be held outside of power. Furthermore any attempt to separate power and knowledge is futile since the production of knowledge is political all the way down. Power is a network of force relations that cannot be escaped. Systems evaluations as conversations cannot take place outside of a regime of truth.

The importance of all of this, in the context of this thesis, is that it has extended the understanding of IS evaluation that has been developed thus far. Thus I can reiterate the individual and organisational understanding of IS evaluation:

Rather than being a decision maker, a manager is in-the-world. She evaluates systems in-order-to get-the-job-done. She does this in-the-world in which she is thrown, rooting her understanding in the already present and significant whole of her *Erlebnis*. Evaluation of an information system by a manager is the appropriation of meaning about the information system.

In the organisational context, managers can come to a common evaluation about an information system because they collaborate in communities of practice. This implies that narrative, situated, pragmatic knowledge will be most useful in evaluation, which is a process of encultured knowing in-the-organisation. Evaluation happens in the course of skilful conversation.

However, in the organisational context it is also the case that conversations as generators of meaning are never held outside of power. Any attempt to separate

[19] The further my hermeneutic journey takes me towards an understanding that all things (evaluation, knowledge, power effects) are local and contingent, inscribed on the surface of the flux, the less appropriate conclusions and summaries seem. Nonetheless, as Caputo (1987, p214) points out, I must 'create the illusion that I am the master of this text, that there is a certain progress in these … chapters, that they are edging towards a conclusion'.

power and knowledge is futile since the production of knowledge is political all the way down. Power is a network of force relations that cannot be escaped. Systems evaluations as conversations cannot take place outside of a regime of truth. In the organisation this regime of truth can be characterised as a regime of truth as rationality, or *Gestell*.

It might appear that, in the face of this regime, the manager has no option but to conform, no means of acting otherwise. The “thorny problem” of information systems evalution seems intractable. In the next chapter I will explore whether or not this is, indeed, inevitably the case.

7 The Information Systems Evaluation Conversation: A Post-Dualist View

This is a more satisfactory account of evaluation as we see it in-the-world, one which accounts for paradoxical practice within the particular regime of truth of the organisation. At this point, however, it may be argued that I have reached an impasse in transversing the hermeneutic circle, one which leaves managers with no means to proceed, no room for action, because they cannot act outside of Gestell. A post-dualist view of action as both constituted by and constituting structure however, suggests that there is always, even in situations of less power (power-less-ness), the potential for action. In the case of evaluation this refers to the evaluation conversation that must, in order to be both genuinely hermeneutic (open to new interpretation) and ethical (open to the other) be both improvisatory (not defined or closed) and deconstructive (in search of openings).

7.1 Introduction

My purpose in this thesis, as expressed at the start of my journeys about the hermeneutic circle, has been to come to an understanding of information systems evaluation, based on which I can elucidate a coherent and convincing theory. At this point, however, it may be argued that I have reached something of an impasse in my journey; that I find myself poised at the edge of a chasm which has opened up in my path about the circle, at the base of which there is only flux and uncertainty.

But how is it that I now perceive a chasm, whereas up to this point there has always been some means of proceeding, some distant horizon with which my argument might fuse? The problem can be explicated as follows: the very concept of evaluation as a process, as some thing to be done, executed or performed, with the express purpose of attaching value to an information system, is inextricably intertwined in a regime of truth, where truth must, according to orthodoxy, be fact, and reason rationality. Information systems evaluation cannot escape the regime of truth by virtue of which we can even begin to identify it as a "thing". The information systems manager

cannot escape *Gestell*. And thus there is no way out, no apolitical means to proceed, no course of action to be taken.

If this is true, then has my journey thus far come to naught? Is there no possibility of synthesising the theoretical glimpses of a hermeneutic whole into the coherent and convincing account that I require? It would seem that my last turn about the circle, at least, has led me to surrender the possibility of proceeding, to give over the potential for action. But is this necessarily so? Why would it indeed be the case? How is it that I charge myself with having taken a dead-end path, that such a charge seems, even briefly, plausible?

This chasm appears to be an inevitable obstacle cast up by what has been described as Foucault's "Nietzchean strain" (Giddens 1984). For Foucault's emphasis on the network of power, on the priority of power over truth (power as prior to truth) might seem to suggest that we have no capacity for action outside of the power structures in which we find ourselves. Thus we encounter the manager who believes she cannot evaluate except by means of the techniques sanctioned, officially or politically, within the organisation. "How can I evaluate a system", she asks "except in terms of the costs and benefits, the strategic value to the firm?" She must appear powerless in this way, if, indeed, "modes of human conduct… are only material to be shaped by the power strategies operative at a given time" (Honneth 1994, p175).

Is this the case? Are we adrift and powerless in the face of instrumental rationality? Is there indeed no possibility for apolitical action? We could of course answer in the negative by the simple expedient of rejecting Foucault's account of power (as Habermas does) as being not always applicable, as an "uncircumspect levelling" and a "generalization of a selective reading" (Habermas 1995, p101). It might seem necessary to stage a retreat to some sort of Habermasian universal normative standpoint from which to act, or critique, or evaluate, if it seems that without such a standpoint we are left only to ask "why should we muster any resistance at all against this all-pervasive power circulating in the bloodstream of the body of modern society, instead of just adapting ourselves to it?" (Habermas 1995, p95).

Such a retreat is, of course, not possible if the Foucaultian account of power rings true. It is not possible, I think, to extricate these horizons, once fused. Better rather to understand the source of the apparent chasm, to find some way in which action is not paralysed by the context in which it must occur, without trying to step outside of that context to some supra-position of normative authority.

So how is it that action can appear so powerless in the face of power, in the inevitable context of the regime of truth in which it must take place? This, if carefully considered, can be seen to be the result of believing that Foucault describes "societal processes as systemic processes of the augmentation of power" (Honneth 1994, p175). Such a view, however, falls into the trap of "emphasising the pre-eminence of the social whole over its individual parts" (Giddens 1984), a view which Giddens further describes as an "imperialism of the social object" and one which, we can argue, Foucault (1994a, p128) himself refutes: "When I speak of power relations, of the forms of rationality which can rule an regulate them, I am not referring to Power – with a capital P – dominating and imposing upon the total of the social body." In fact, he tells us "I in no way construct a theory of Power".

At the same time, having entertained some attempt to grasp the network of relations, always contingent and changing, that is power, and having explored the ways in which these relations of power "permeate, characterise and constitute the social body" (Foucault 1994b, p31) through discourse, we cannot allow for an opposite imperialism of the subject. Power has a pervasive influence in social life, to the extent that meaning itself is permeated with power in its construction.

Instead of a chasm, then, we are faced with a familiar apparent parting of the way, a choice in our navigation about the hermeneutic circle: social object over individual subject or vice versa? The horns of the dualist dilemma appear once again, and a dialectic overturning is again necessary. In the remainder of this chapter, I shall use the concept of structuration theory as just such a dialectic device, in order to explore how it is that action is after all possible in the context of the power-pervaded social

body. More specifically, I will seek to address the question: "how can a genuinely skilful evaluation conversation be made possible in the context of the organisation as a regime of truth?" How can managers do a good job of evaluating information systems?

7.2 Structuration Theory

Structuration theory, or at least some of the ideas expressed in this theory, has been used for some time now in the study of information systems and technology (Barley 1986; Käkölä 1995; Sahay & Robey 1996; Walsham 1993).[20] This can been seen as a specific instance of a growing body of information systems research which attempts to deal with context not just as a sort of background, as a set of conditions creating some sort of contingency, (or as Kling (1991, p359) puts it as "an undifferentiated bath that warms the subjects of our studies") but through a careful analysis of the manner in which context is essentially involved in the production of action.

This body of research broadly includes content-process-context schema research (Canevet 1996; Serafeimidis 1996; Serafeimidis & Smithson 1996; Serafeimidis *et al.* 1996; Symons 1991; Walsham 1993), Kling's (1991) concept of web models, which views information systems as "complex social objects constrained by their context, infrastructure and history", and Markus' (1983) use of a theory of the interaction between systems and their context of use to account for resistance.

There are thus multiple constructs that can be used to interpret context. Giddens's (1984) structuration theory, in particular, integrates context and action to interpret action as "repeated conscious choices in the continually changing, conflict-ridden circumstances of the present society" (Korpela 1994, p220). Thus, in the sections that follow, I shall attempt to explore the main ideas of this theory.

7.2.1 A brief outline of structuration theory

[20] Structuration theory has particularly been used in the study of computer supported co-operative work (CSCW) by authors such as Lyytinen and Ngwenyama (1992), Korpela (1994), and Orlikowski (1992a).

The fundamental premise of structuration theory is the duality of structure and action (structure-action). This duality, which has been described elsewhere as a context-process duality (Sahay & Robey 1996), is proposed by Giddens as a means of overcoming the unsatisfactory dualism which arises when the constitution of agents and structures, or the individual and society (Jones 1999), are seen as two independently given sets of phenomena. This duality thus suggests that "the structurational properties of social systems are both medium and outcome of the practices they recursively organise" (Giddens 1984, p25). This approach reconciles the structural features of social practice with the reflexive agency of individual actors (Pentland & Reuter 1994). Social structure is drawn upon by agents in the day-to-day actions, and is thereby also produced and reproduced by this action. Action is both constrained and enabled by structure, for action in any sensible form is not possible without structure nor structure constituted except through action.

At this point it is important to consider carefully just what Giddens means by structure, and therefore how it operates in action. Structure is to be understood paradigmatically, not as a thing or object (Orlikowski 1992a) or as some sort of skeleton or morphology. As soon as we perceive of structure as a thing, it becomes "external" to action, and we have slipped back into the imperialism of the social object: structure becomes "a source of constraint on the free initiative of the independently constituted subject" (Giddens 1984, p16). Rather, in the concept of structure, Giddens refers to the "structuring properties allowing the binding of time-space in social systems, the properties which make it possible for discernibly similar social practices to exist across varying time and space and which lend them a systemic form". Most importantly, this means that social systems, which we see as reproduced practices, do not have structures per se. Structure exists "only in its instantiations in such practices and as memory traces orienting the conduct of knowledgeable human agents" (Giddens 1984, p17). Thus we can say that structure is marked by an absence of the subject, and does not exist except in action.

At the same time, however, the structural properties manifest in social practices (action) are often deeply embedded in these recursively reproduced practices. As

such they act as rules and resources for action, both enabling and constraining the form that this action can take. Rules and resources, these "structuring properties" are, like the idea of structure itself, easily misunderstood as "things" or objects, the application of which will have certain mechanistic outcomes. It is therefore useful to consider, briefly, each of these.

Rules (Giddens 1984, pp17-18), as implicated in the reproduction of practice are not generally formalised prescriptions, but rather those that exist "in a social space" (Lyytinen & Ngwenyama 1992). Rules do not occur in isolation, but in sustained practice in the reproduced relations between individuals that we recognise as social systems. Rules are not external to the human agent, but are implicit in her mastery of social practice, providing a generalised capacity to deal with an unknown variety of circumstances. The human agent engages these rules in order to understand the circumstance – to constitute meaning; and in order to determine how to act – to sanction conduct. Her ability to act rests on her resources (separate from which rules cannot be conceptualised), which can be allocative, "generating command over objects, goods or material phenomena" or authoritative, "generating command over persons or actors" (Giddens 1984, p33).

It is perhaps more immediately evident in the case of rules (which are evident in social practice and implicit in the agent's mastery of action) than in the case of resources (which we can intuitively identify as "real") that the structure, manifest in these rules and resources is, in Giddens's conceptualisation a "virtual order of modes of structuring" (Giddens 1984, p17). Both rules and resources, whether we can identify for them a "real existence" (manuals, laws, raw materials, people) or not, become rules and resources "only when incorporated within processes of structuration" (Giddens 1984, p33). As Jones (1999, p109) most succinctly puts it: "The rules and resources constituting structure exist only in the agents heads." At the same time, and this is the effect of the duality of structure, "this of course, does not prevent the structured properties of social systems from stretching away in time and space, beyond the control of any individual actors. Nor does it compromise the possibility that the actors' own theories of the social systems which they help to

constitute and reconstitute in their activities may reify those systems." (Giddens 1984, p25)

Ironically (or is this simply the operation of the double hermeneutic?), a similar reification is difficult to avoid, as soon as we discuss "structure", "rules" and "resources", since the convenience of such analytical terms risks distorting the essential message of the theory. That said, for analysis such terminology is necessary, and extended further by Giddens in his discussion of the three dimensions of structure.

As Jones (1999) points out, Giddens (1984) draws from the earlier work of Durkheim, Marx and Weber in identifying these three dimensions of structure as signification, legitimation and domination. These refer respectively to the rules that constitute meaning (signification) and norms (legitimation) and the resources that determine relations of power (domination). Since these structural properties are evident in action, the latter too can be analytically deconstructed into communication, sanction and power. In order to clarify further these analytical dimensions, modalities of structuration are introduced, as an analytical device through which we can "relate the knowledgeable capacities of agents to structural features" (Giddens 1984, p28). There are accordingly three modalities relating respectively to each of signification, legitimation and domination; namely, interpretative schemes, norms and facilities.

Interpretative schemes are the "modes of typification incorporated within actors' stocks of knowledge" (Giddens 1984, p29), or the stocks of knowledge that enable actors to understand things as things, whether they are physical or conceptual (tables, chairs, events, words etc). This knowledge, both implicit background knowledge and explicit foreground knowledge, is acquired through experience. Bartunek (1984, p355) describes interpretative schemes as "provinces of meaning" in which actors map their experience of the world into cognitive schemata. These are then drawn upon in making sense of their own and others' actions (Walsham 1993, p61). Giddens (1984, p29) emphasises that it is communicative action in particular that is

sustained by, and sustaining of structures of signification, through interpretative schemes.

If interpretative schemes are the rules for understanding what to know, then norms can be understood as the rules for understanding how to act. These sorts of rules, such as standards of morality and appropriate action, are used by actors to sanction or legitimate their actions as appropriate conduct. Thus norms constitute structures of legitimation.

Facilities are the material and non-material resources which actors bring to bear on their actions, enabling them to exert power over social action. Material resources can be allocated by those who control them. Non-material resources include "status, special skills, charisma, etc., that an actor may bring to an action situation" (Lyytinen & Ngwenyama 1992, p23). These facilities enable actors to draw on and reproduce structures of domination, or the asymmetry of allocative and authoritative resources. Such structures are fluid rather than concrete, however, because they demonstrate what Giddens (1984, p16) terms a dialectic of control: "All forms of dependence offer some resources whereby those who are subordinate can influence the activities of their superiors." Asymmetries can thus be dramatically or imperceptibly shifted over time as this dialectic plays out.

All of these dimensions of the duality of structure can thus be portrayed diagrammatically as in Figure 10. It is most important to consider however, that the separation of this duality into the vertical dimensions is simply for analytical convenience. All dimensions of structure are inextricably interwoven in and with the production of action.

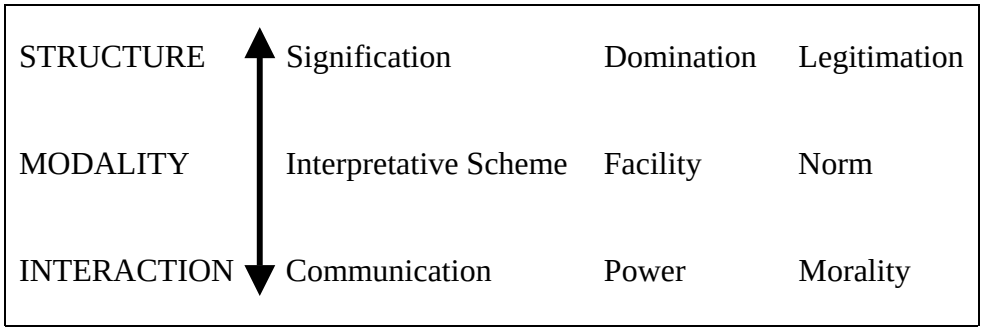

Figure 10: Analytical elements of the duality of structure (Giddens 1984, p29)

Consider for example the following exchange between two of the managers on our imaginary senior information systems portfolio committee:

CFO Alison: The load-balancing system you have proposed can never pay for itself. I have reviewed the income streams against the project costs (which are huge) and the results are strongly negative.

Susan: You have to understand the strategic drivers behind the system. Our CEO has repeatedly stressed the importance of e-delivery to our clients. That requires 24*7 operation and this system will guarantee that.

These managers are drawing on structures of signification, through their interpretative schemes, which allow them to understand what “load-balancing system system”, “income”, “costs” and “24*7” mean, not just as words in themselves, but in relation to the social whole in which they have their meaning. In the context of the organisation, income is desirable and costs are not. Thus signification is intertwined with legitimation as there are organisational norms that enable Alison to use the relationship between the income streams and the costs to question the system. To be operational “24*7” may be construed as important, or unnecessary, depending on the circumstances, and here we see how the structures of domination are intertwined with the structures of meaning and legitimation: the CEO, who has authoritative capacity,

has stressed the importance of the system, and Susan, who has knowledge of this, draws on this resource to justify the system.

More abstractly, we see that interpretative schemes interact with norms in that actors are expected to be able "both to explicate the reasoning behind their actions, and to supply the normative grounds whereby they may be justified" (Giddens 1984, p30). Alison, if asked, would be able to explain what she means by "income stream" and why it is a desirable thing. It is, however, important to stress that because these agents are knowledgeable actors, engaged in a duality of structure and action, these norms do not programme the managers' conduct, but are rather "contingent claims which have to be sustained and "made to count" through the effective mobilization of sanctions in the contexts of actual encounters" (Giddens 1984, p30). The ability to mobilise sanctions depends upon access to allocative or authoritative resources, and thus "normative sanctions express structural asymmetries of domination" (Giddens 1984, p30).

Thus, the structural dimensions of social systems, namely signification, legitimation and domination, are usefully separated in analysis precisely because this forces us to consider how intertwined they are in practice. It is important to bear in mind that they can only be separated analytically. Further more, structure itself is a duality, shaping and constituted by action. As Giddens points out, "concentration upon the analysis of the structural properties of social systems, it should be stressed, is a valid procedure only if it is recognised as placing an epoche upon – holding in suspension – reflexively monitored social conduct" (Giddens 1984, p30).

Understanding this, and having examined these properties, it is now pertinent to release the suspension and return to the questions of "reflexively monitored social conduct" for this is, after all, the nub of our question: How is action possible?

In discussing action, Giddens specifically addresses not just individual moments of doing, but rather the *durée* of human life, the "continuous flow of conduct". As a sociologist, he is interested in the "fundamental question of social theory (Giddens

1984, p35), the classic sociological "problem of order" (Jones 1999). Thus the continuity of social life, the "recursive ordering of social practices" is of particular importance. Thus recursive ordering, he tells us, "presumes reflexivity" which is itself in turn "possible only because of the continuity of practices that makes them distinctively "the same" across space and time". This reflexive monitoring of action takes place on the ground of some sort of reason, or rationalisation, itself based on a motive, an "overall plan or programme" for the range of conduct. Thus Giddens suggests three levels of agency, namely discursive consciousness - where reflexive monitoring takes place, practical consciousness – where there is rationalisation of action, and unconscious motives – often cut off by barriers of repression.

These terms, however, must be used with caution and as Jones (1999, p112) points out, with "sensitivity to structuration theory's particular perspective". Thus while at the explicit level, discursive consciousness refers to knowledge that can be articulated, it is not the case that it is necessarily thus extracted from the ongoing social practice in which it occurs. "Human action occurs as a *durée*, a continuous flow of conduct, as does cognition". Reflexivity as a notion thus points us to the monitored character of the ongoing flow of social life and not to action as "composed of an aggregate or series of separate intentions, reasons and motives". Such reflexivity, whilst relating to "those forms of recall which the actor is able to express verbally" (Giddens 1984, p49), does not require such expression, and is rather a matter of routine, directed not only at the actors' own activities, but and physical and social contexts and actions.

The reflexive monitoring of action which occurs in discursive consciousness is further "dependent upon rationalization, understood here as a process rather than a state, and as inherently involved in the competence of agents" (Giddens 1984, p3). Again, the terminology provides a potential misreading, because the rationalisation of action is "not the same as giving rationally valid reasons for particular items of conduct, nor even the capability to do so" (Lyytinen & Ngwenyama 1992, p), and is perhaps better thought of as equating to tacit knowledge (Orlikowski 1992a).

Both discursive and practical consciousness then, are “directly bound up with the continuity of action” (Giddens 1984, p6). We are able to act through our engagement in the recursive nature of social life. In particular, individuals acquire ontological security through their engagement in predictable routines and encounters. In fact, Giddens suggests, routine is the predominant form of social activity. This seems perhaps to slide back to a more structural view, in which action is programmed, and like rationalisation is potentially misunderstood, as we grapple with “the lack of fit between our unproblematic coping with the continuity of conduct across time-space and its ineffable character when confronted philosophically” (Giddens 1984, p35). The key to understanding routinisation in this way is, however, to focus on the question of our unproblematic coping, and our ability to go on in everyday life. Such going on is not pre-programmed in any sense, but rather the way in which we engage in-the-world. “The routinised character of most social conduct is something that has to be “worked out” continually by those who sustain it in their day to day conduct” (Giddens 1984, p86). We are in-the-world, continuously engaged in its referential whole, and the commitments, because-ofs and for-the-sake-of-whichs that such a whole entails. The actor is *Dasein*, in-the-world, not structured by the world. Thus local practice is always indeterminate, as particular interactions “cannot be fully known by anyone ex ante, but are actively shaped by practitioners as the confront local circumstances (Tsoukas 1996, p22), even when such interactions are routine.

Routine is important because “most daily practices are not directly motivated” (Giddens 1984, p282). Furthermore, the knowledgeability of human actors is to some degree bounded by the unconscious on the one hand, and by the unintended consequences of their actions on the other. This does not, however, imply that actors are not skilfully engaged in their daily practices for, at least at the level of practical consciousness, all human beings are knowledgeable agents, understanding what it is that they do, in a manner that is not incidental to their activities. The fact that agents engage in routine should in no way be construed as pre-determining or even simplifying their behaviour, for “knoweldgeability embedded in practical consciousness exhibits an extraordinary complexity” (Giddens 1984, p282).

The complexity of human action within the ongoing *durée* of daily life that, stretching over lifetimes and institutions gives continuity to social practice, is the essence of the duality of structure. Action, to return to the problem, is not only possible, but essential to the existence of social life.

But, we may ask, what kind of action is possible? Is it not still constrained by power, by the structures of domination expressed through the facilities available to agents? Power, we recall, is still central to action for, as Giddens (1984, p283) tells us "there is no more elemental concept than that of power". Of course, Giddens is critical of Foucault, accusing him of "succumbing to a Nietzchean strain in which power is seemingly prior to truth". This accusation seems to rest on a conception of truth that is not common to Foucault's usage, as in "regimes of truth". Foucault tells us that power is indeed prior to truth, where truth is "to be understood as a system of ordered procedures for the production, regulation, distribution, circulation and operation of statements" (Foucault 1984, p74). That is to say, truth is "true discourse" (Foucault 1994b, p32) or the types of discourse that a regime of truth accepts and makes function as true. Truth is not some greater reality, but the meaning that we can attach to things, events, and actions. Now Giddens too, asserts the priority of power over this kind of truth, truth as meaning, when he says that "domination – as I conceive of it – is the very condition of existence of codes of signification" (Giddens 1984, p31). And so, like Foucault's non-theory of power, structuration theory suggests a relational model of power based on a dialectic of control: "Even the threat of death carries no weight unless it is the case that the individual so threatened in some way values life" (Giddens 1984, p175). Power is, as in Foucaultian terms, productive, "very definitely enablement as well as constraint" (Giddens 1984, p175). Individuals are able to act (understand, converse) precisely because of power.

Still we might say, the problem remains. Can individuals act outside of the existing power structure? In terms of the duality suggested by structuration theory, the action is the structure and therefore all the actors need to do is act differently. They will then have at least altered the structure, even if they cannot step outside of it. The question is, to what degree do they do this, to what degree do they experience this

possibility for change? Certainly, on a reading of Giddens, the answer would seem to be "not much", as he focuses to a far greater extent on stability and reproductiveness than on change. In emphasising routine, for example, while acknowledging that this is worked at, he does not exactly emphasise the possibility of transformation.

It is precisely this emphasis on structure and routine that has led to some criticism of structuration, particularly by researchers who sought to apply it empirically, including some researchers in information systems. Such criticism may be refuted on the basis that it uses structuration theory in a way in which Giddens never intended. Certainly, as Jones (1999, p112) points out, "Giddens himself… shows a certain ambivalence about the use of his ideas", on the one hand suggesting guidelines for research and on the other stating that structuration is not intended as a programme or means of structuring research.

Further, the use of structuration theory in information systems research in particular has been frequently compromised by the temptation to integrate the material (the technology itself) into a theory that operates entirely at the level of the social. It is worth repeating here Giddens's insistence that even material phenomena "become resources…only when incorporated within processes of structuration" (Giddens 1984, p33)[21].

There is, however, in addition to these sorts of reconstruction of structuration theory, research in information systems that seeks to apply the theory to the analysis of empirical evidence. In the next section I shall review these studies as a means of critiquing structuration theory with reference to the practice of information systems

[21] An example of this is adaptive structuration theory, which specifically identifies features of a technology as a source of structure (deSanctis & Poole 1994), but really only borrows a number of terms from Giddens, and ultimately, in Jones' view, is a 'misreading of structuration' (Jones 1999, p124). Less removed from the spirit of structuration theory is Orlikowski's (1992a) tructurational model of technology, which nonetheless also seeks to materialise structure by suggesting that knowledge, norms, rules, and resources can be embedded in technologies.

7.2.2 From structure to formative context: using and critiquing structuration theory

In a series of longitudinal studies, Karsten and Jones apply various concepts of structuration to case studies of Notes implementation in three organisations (Karsten 1995, 2000; Korpela 1994). Other studies use structuration theory as a meta-theory to inform the research (Käkölä 1995; Lyytinen & Ngwenyama 1992; Sahay & Robey 1996; Walsham 1993), while others, informed by, or at least attempting to incorporate some elements of structuration theory, look for evidence of how structures exhibit persistence or transformation (Robey & Azevedo 1994).

A number of these studies suggest that structures are persistent. For example, in her structurational study of computer-aided software engineering (CASE) tools, Orlikowski found that structural elements were barriers to change (Orlikowski 1992a). Similarly, a Lotus Notes application in another firm did "not significantly chang[e] work practices or policies" (Orlikowski 1992b, p369). In focusing specifically on the degree to which structure is malleable, Orlikowski is interested in what she terms interpretive flexibility, or the degree to which users of a technology are engaged in its constitution (physically and/or socially) during its use (Orlikowski 1992a). Whilst bearing in mind that this potentially separates structure from agency, and turns the carefully constructed duality of structuration theory into a dualism (Jones 1995, p127), it is worth notingthat Käkölä too suggests that interpretive flexibility is "too often low" (1995, p82) [22].

Where social structures are seen as basically persistent, it is suggested that environmental impetus is needed to initiate change (Bartunek 1984). Barley suggests that technologies or member changes are exogenous shocks capable of triggering change. Such events cause "slippage between the institutional template and the

[22] Kling (1991, p352) suggests that 'reinforcement politics', in which 'those with most resources gain more influence, while those with fewer resource lose subsequent influence', were prevalent in his studies of computerisation. While Kling uses web models rather than structuration theory, this observation points to a persistence of structure, specifically structures of domination, that concurs with Orlikowski's findings.

exigencies of daily life". When slippages are temporary, or subsumable by the structure, they pass. When they persist, changed patterns of action reconfigure the structure (Barley 1986, p80).

In contrast to these findings, Lyytinen and Ngwenyama describe the emergent properties of CSCW systems, which they believe "could embody the means to reshape and redirect recurrent organizational practices" (Lyytinen & Ngwenyama 1992, p29). Ngwenyama's later study of a software development team stresses that "although organizational processes and structures exhibit regular patterns there are no points of stasis. Social organizations are works in process, emerging as their actors respond to contingencies, interact with each other and continually re-negotiate the "rules of the game"" (Ngwenyama 1998, p128). Sahay's (Sahay & Robey 1996) work on geographic information systems similarly points to technology as revising organisational structure, through emergent causality. Thus rather than being an exception, slippage can be viewed as constant, as a kind of "continuous unplanned everyday improvisation that is the genesis of organizational emergence" (Ngwenyama 1998, p143).

The question then arises whether structuration theory accounts adequately for such slippage and improvisation, or whether structure and pattern are solely implied. Can we conceive of a morphing structure sliding about the place? What about improvisation, that genesis of organizational emergence?

Ciborra provides a detailed discussion of improvisation as "apparently extemporaneous action that contributes to individual and organizational effectiveness" (Ciborra 1996, p369). He contrasts this to canonical procedure:

> We look at procedures, methods and routines as concrete or abstract in-order-to artefacts that populate the world of organizations. Improvisation belongs to a different family of phenomena, the one of being and behaving in such a world….We also stay away from those who admit a "dialectic" in organizations between formal procedures and exception handling. We would suggest, if anything, a hierarchy of

> phenomena: improvisation is fundamental, while structured methods and procedures possess a derived character. (Ciborra 1996, p373)

Giddens, we recall, similarly describes routinisation "as grounded in practical consciousness" (Giddens 1984, p60). Therefore, it would seem that structuration must allow for improvisation as a kind of purposeful human behaviour. Nonetheless structuration might seem to imply an inherent structure bias, if, as Ciborra and Lanzara (1994, p75) charge, structurational approaches "bend towards the search for general patterns across a wide range of situations". These authors attribute this to Giddens's "theoretical interest in the more general problem of social reproduction" (Ciborra & Lanzara 1994, p74), which, we have seen, he considers to be the fundamental question of social theory (Giddens 1984, p35).

They further describe their field study in contrast to this:

> … in our field study, on the contrary, we were exposed all the time to empirical evidence of fractures, inconsistencies, deviations from current routines, emergent properties in the process of change, which called for interpretation: Few things seemed to fall in place. Rather than a rule-based structural "syntax" of social change and transformation we needed a more pragmatic conceptual vocabulary that would help us better capture the actors' perspectives and situated meaning when they are involved in action, account for their limited learning, and at the same time render the messy, makeshift, pasted-up character of the activities going on in a process of design and change. When performing their work routines or inventing new ones, actors do not directly respond to structures, rather they tacitly enact a context, which is often embedded and implicit and has formative rather than structuring properties. (Ciborra 1996, pp74-75)

Ciborra and Lanzara (1994) thus engage the concept of a formative context. Formative context is "the set of pre-existing institutional arrangements, cognitive frames and imageries that actors routinely enact is a situation of action" (p70). This is

an action-oriented concept since “when actors undertake action, they enact a context in a situation bounded in space and time, and respond to it. In order to have a formative context there should be an action going on.” (p73)

In suggesting pre-existing arrangements, and an action orientation, the formative context seems similar to structuration. However, Ciborra and Lanzara suggest that there are some important, if subtle, conceptual differences. Firstly, while a formative context provides the ground for action, “actors are usually not aware of the formative contexts that inform their practical and argumentative routines” (Ciborra & Lanzara 1994, p70). This appears to be in contrast to the reflexivity which structuration theory proposes, although it can be argued that Giddens suggests that reflexivity is derivative: “The rationalization of conduct becomes the discursive offering of reasons only if individuals are asked by others why they acted as they did.” (Giddens 1984, p281)

Secondly, formative contexts are inherently changeable, showing “a pasted-up nature and a makeshift one, where old and new routines are tested, discarded, retrieved, collated, and combined along a main stream of sense” (Ciborra & Lanzara 1994, p71) Rather than explicating a structure, human action is seen as “a curiosity for the uniqueness and the *gusto* of specific design and action settings” (Ciborra & Lanzara 1994, p75).

Thirdly, Ciborra and Lanzara suggest a difference between formative and structuring properties. Formative properties lead to shift and drift phenomena, and are perceived by actors in enacted contexts. Thus whilst schema, norms, and power can be analytically perceived, “modalities of structuration may come to bear in a situation of action only within (and by means of) an enacted context, as it is perceived by the actors” (Ciborra & Lanzara 1994, p75). Although Ciborra and Lanzara resist the structurational perspective, this does suggest that formative context is the fabric of social action through which actors might perceive underlying structure. The usefulness of understanding formative context is that it suggests a background of meaning, which can be analytically understood as structure, although actors

themselves seldom engage in such analysis. We might recall, however, that Giddens himself implies such a distinction in suggesting that structure is a paradigmatic concept manifest in rules and resource which form a basis for analysis (Giddens 1984).

It seems then that the degree to which formative context as a concept differs from structuration depends on the degree to which one is prepared to push structuration theory to its logical conclusions and the degree to which one holds in mind the irreducibility not only of structure and action but of the dimensions of structure as well. Formative context, as enacted context, is a fuzzy sort of blurring of structure and action, which is undoubtedly intuitively appealing as it is in this sort of way that we, as actors, perceive our lives. We are, most of us, in spite of our hermeneutic abilities, not really that inclined to go about on a daily basis analysing structures of signification, legitimation and domination, as such. We hold a far more pragmatic and engaged view of the world, which is messy and complex, for all that it is skilful.

It is also undoubtedly the case that structuration theory has a very "modern", analytical feel about it. The sparse and serious style in which Giddens writes certainly contributes to this. Nonetheless, given the basic tenet of the theory, that of the duality (rather than the dualism) of structure, which is Giddens's means of transcending both naturalistic (objective) and interpretative (subjective) sociology, and his anti-positivist, fundamentally hermeneutic stance (Jones 1995, p107), structuration theory has a particular perspective which can be described as post-dualist.

7.3 Reconsidering Structuration Theory

If it is indeed the case that structuration theory has a basically post-dualist perspective (and Giddens's position on the "irretrievably hermeneutic character of social science (Jones 1999, p129) would further suggest this) then pushing structuration theory to its post-dualist limits, it should be possible to adopt the basic concepts of the theory

(hopefully in a "sparing and critical fashion" (Jones 1995)) in order to synthesise a framework for information systems evaluation as a hermeneutic process.

This I shall do in two stages. Firstly I shall bring the insights of chapters four (relating to individual evaluation) and five and six (relating to organisational evaluation) into play to reconsider structuration theory. Thereafter, in the following section, I shall consider explicitly how these insights are useful in understanding information systems evaluation, through an interpretation of our thought experiment, the imaginary evaluation in which Susan and company are engaged.

7.3.1 The elements of structure

Action draws upon, and structures, three basic elements of meaning, power and norms. Each of these elements can, based on the work of this thesis thus far, be elucidated further as follows:

A) Meaning

For Giddens, as we have seen, meaning is possible through the structure of signification which is manifest in symbolic orders and modes of discourse. These themselves exist "only as the medium and outcome of communicative processes in interaction" (Giddens 1984, p31). Thus "interpretive schemes" are both applied reflexively and are themselves grounded in communication.

Let us consider this in relation to the individual manager, who must establish meaning about a system, in the process of evaluation. In chapter four, we saw that the manager is in-the-world in which she is thrown. She is not an autonomous self-sufficient source of intelligibility possessing mental states and acting in terms of intentionality, but rather derives her being (her intelligibility) from *being there* (in-the-world). For the manager therefore, meaning is rooted in an understanding of the already present and significant whole of her *Erlebnis*. We might say that for the manager, as is explained by structuration theory, meaning is not possible except on the background of understanding of the world in which she is – the structure of signification.

The involved manager's process of understanding "starts with *Erlebnis"* (Introna 1997, p77), the already present and significant whole of her life-world. Now as Gadamer points out, "the life-world is always at the same time a communal world that involves being with other people as well" (Gadamer 1989, p247). The idea of the world (in-which the manager is) can only have meaning in the context of shared social practice. Thus, it appears, we cannot reasonably consider our involved manager in isolation (for then in what would she be involved?) We must consider the organisational context in which she is. In chapter five, we saw that it is in fact conversation that provides both the space for and the possibility of the appropriation of meaning. This is because knowing is basically narrative, situated and pragmatic. The construction of meaning takes place through conversation, within a particular situation (structure) based on that which is already practically understood in action.

Thus, in accounting for the appropriation of meaning, both on the part of the individual manager, and in the organisational context (the two are not really separable) we must stress the importance of involved (situated, pragmatic) and narrative (conversational) means of understanding. Where information systems evaluation is considered to be a specific instance of understanding, skilful conversation is seen to be the means of good evaluation.

B) Power

Moving from meaning on to power, Giddens tell us that "structures of signification have to be grasped in connection with domination and legitimation" and that domination, or power, "is the very condition of existence of codes of signification" (Giddens 1984, p31). Thus while he relates domination to theories of resource authorisation and resource allocation, through political and economic institutions respectively, it is also true that in structuration theory, power is inherent in social action as such.

Giddens therefore cautions that "we must also reckon with the implications of the writings of Foucault" (Giddens 1984, p32). In chapter six, these

implications are explored so that we see that power is not a uni-directional systematic distortion in a structure, but rather a network of force relations that cannot be escaped, but only drawn upon. Power is not possessed. Power comes from below. Power is not repressive. Every individual and every institution is both medium and outcome of the network of relations. This does not mean that there is no domination, but that all groups are involved in power relations, and no one group controls them in a simple sense. Power relations are intentional and non-subjective. They are the outcomes of local-cum-contingent action.

As does Giddens, we must relate this conception of power to the construction of meaning through conversation. Because power is pervasive, conversations as generators of meaning can never be held outside of power. Furthermore any attempt to separate power and knowledge is futile since the production of knowledge is political all the way down. Power acts as a regime of truth, producing and co-constituted by knowledge.

This implies that the evaluation conversation too is enframed by some prevailing regime of truth. We have seen that this is, in most organisations, the regime of technological reason, or *Gestell*, which sets everything up as an asset, waiting to be utilised. Thus managers feel constrained to evaluate not on the basis of their skilful involvement in-the-world together, but on the basis of technical rationality. The evaluation conversation must work within the functional paradigm to begin to be seen as true. Such truth is not necessarily skilful, although skilful evaluation will necessarily draw on resources of power (the prevailing regime) for its actualisation.

C) Norms

Norms are the instantiation of the structure of legitimation, through which we understand how we may act. Norms intersect both with interpretive schemes (normal meanings) and with facilities of domination (normalised behaviour). Through norms we sanction or legitimate our action as appropriate conduct.

Following on from Giddens's (1984) insistence that structures of signification are separable only analytically either from domination and from legitimation, we see that norms too are implicated in regimes of truth. Norms, as a selected set of mechanisms, techniques and sanctions, are the means through which the truth is produced and confirmed as such. This is not to say that norms are rules in the sense of being inescapable truths, but rather that they are the practices accorded value in the production of truth. They are both the normal and normative way of being. Norms, determining how we should act, are imputed by our way of Being, which is *Gestell*. Thus the manager finds herself enframed by technological reason, within which rationality and technique have primary validity.

7.3.2 Action

Within the overarching schema of meaning, power and norms, individuals act and interact with one another. This action may take the form of discursive consciousness, but is always on the basis of practical consciousness, or transparent coping in-the-world. Such coping may take on the appearance of routine, but is not pre-programmed or determined in some way, but rather worked at, or improvisatory, on a day-to-day basis.

As I have previously stressed it is important to perceive the structure or schema of meaning, power and norms exactly as such: a schemata, and therefore useful for analysis rather than separate from action in any way. We saw in chapter four that the involved manager is in-the-world, such that "in" is not categorically inclusive (in the structure) but rather existential (in-volved). She is also not in her own world, but in a world of already-shared social practices. The implication of this involvement is that she can act, understand or interpret only in the doing, in her going-on in-the-world, in the continuous flow of conduct that is everyday life. Thus understanding is situated (in-the-world), and pragmatic (in-practice).

The level of practical consciousness that underpins the “competence of agents” is firstly transparent to the individual, and secondly, directed through concern. What shows up is what matters through concern. The involved manager can, therefore, deal with what matters unproblematically, in a way that may appear routine, but is rather grounded in her involvement in-the-world.

At the level of discursive consciousness, the manager will cope more deliberately through interpretation, which can be articulated, but is not extracted from the practice in which it occurs. The manager, being thrown in-the-world cannot escape from it for purposes of interpretation or understanding, but must work out her interpretations precisely on the basis of her engagement in-the-world. Decisions are thus not made independently of her engagement in-the-world. Rather resolution emerges from it.

This action is necessarily interaction. The involved manager does not exist in a private world. She exists in a world of shared social practices, a community of practice, which provides the public possibilities of significance (what matters). Therefore, the manager understands-with, on the basis of her interaction-with, in the form of conversation generating and structured by meaning, power and norms.

7.4 A dialectic or post-dualist interpretation of evaluation

The dialectic or post-dualist interpretation of evaluation suggests that information systems evaluation is a process of hermeneutic understanding-with, co-constituted with and by power and norms. Let us apply this interpretation to the thought experiment, or evaluation vignette concerning the imaginary Susan and the load-balancing system.

7.4.1 Evaluation as it happens – in our story

We recall that Susan, the director of information systems strategy and capacity planning at a major retail bank, was engaged in reviewing the current systems in use at the bank. Specifically her concerns in this review are related to the capacity and resilience of the system. In other words her engagement with the system is directed

towards these issues. In addition she believes that the bank should retain responsiveness at the level of 2-3 second response times, and continue to provide real-time posting of financial transactions. Why does Susan understand the situation in this way? She does this because she is involved in the world of the bank, which prides itself on running an online, real-time, fully integrated mainframe system. This is a world where technical capability is important, for the sake of providing service to customers (why else provide real-time posting?). Thus capacity, resilience and responsiveness show up as issues, and provide the hermeneutic whole on the basis of which Susan will make her evaluation.

Susan did not fashion this understanding from a void. She understands-with what we conveniently describe as "the bank", but what is in fact a community of practice, constituted by a particular style or way in which things show up as important. This bank has a leading-edge-technology style of operation, in terms of which the load-balancing system logically emerges as the "right" system. Why? - because it will satisfy capacity, resilience and responsiveness requirements in a technologically sophisticated way (tandem processing on the mainframes providing both load-balancing and hot-linked back up). This will be a "world class financial transaction processing system".

At the same time, however, Susan's understanding is co-constitutive with the power and norms of the bank. She cannot present her understanding without resorting to technical rationality in the form of a well-formed presentation to the appropriate committee. Well-formed does not mean "reasonable in terms of the way we see things in this bank" but rather tied into strategic drivers endorsed by the CEO, and supported by weightings, costings and matrices.

The committee meeting that turned out to be so uncomfortable must also be further interpreted as an instance of understanding-with. This is specifically a conversation in which meanings relating to the system (and even the style of the bank as a community of practice) will be negotiated. Importantly, we see in the vignette that the authoritative resources in the bank are up for negotiation too. There are "new

owners" and existing managers struggling to maintain their positions through "empire-building and ego-stroking". Suddenly, what seemed obvious needs to be understood again. Is a world-class system, providing responsiveness to customers still the issue? Is a substantially reduced information systems budget the objective? In this meeting these meanings will emerge.

What remains constant in terms of power and norms, however, is the prevalence of reason as rationality, and the demands of the economic rationality. Thus we have noted that very indirect consequences (a senior citizen cannot be admitted to hospital because she cannot immediately access savings account funds) of low economic imperative (how often is that likely to happen?) will fall by the wayside or even more likely, not even emerge.

7.4.2 Evaluation as it ought to be

The evaluation vignette as interpreted above has sought to present information systems evaluation as it happens. If the story rings true at all, then I think that it achieves this objective. The problem is that as such, evaluation remains "a thorny problem". Susan can be accused of using objective criteria for political means, she perceives no means of presenting the reasonableness of her situated and pragmatic understanding, and the committee meeting as a conversation is pervaded by power politics, and less than skilful. No doubt, should an IS researcher conduct an empirical survey in this bank he would be told that while proposals must be fashioned in a particular way, the techniques are spurious and ritualistic, cost-benefit analyses, where these are done, are "basically fiction", and no post-implementation reviews are ever conducted. The managers will bemoan the lack of techniques available, and the political nature of decisions.

This situation, we can see, arises not because power and norms are bad in the context of evaluation, but because they are in this particular situation not productive, or reasonable. The regime of truth is characterised not by stability but by incommensurability, by pervasive cynicism about what is true or valid, and by frequent and sometimes significant failures of action. IS evaluation is plagued by

continuing “sources of wickedness” that place the requirements for good understanding outside the realm of the rational techniques.

Now we cannot escape this regime of truth. Because power is pervasive, in both meaning and norms, and in structuring action, the manager cannot act outside of power. IS managers, unable to escape the regime of truth, may have no other option it seems than to accept the inadequacy of evaluation as a process.

Fortunately, a dialectic, post-dualist consideration of IS evaluation presents us with some options in this respect. For the essence of structuration is to see that while action is structured by meaning, power and norms, it also structures them. Action is enabled by power, not paralysed by it. Thus, while she may be power-less, no agent is powerless, for there is always the possibility of acting otherwise, of collapsing locally, at a particular moment the power structures of that moment, all the while recognising that the same, or another, structure will inevitably re-construct at exactly the same moment.

This possibility for acting otherwise is the possibility of local resistance, the possibility of clearing some small space in the pervasive network of power. As Coyne (1995) shows, both Foucault and Heidegger allow for, even impress on us the importance of, local resistance, whether in the form of strengthening “those practices that have so far escaped or successfully resisted the spread of technology” or technical reason (Foucault) or in the form of more passive releasement (Heidegger) (Coyne 1995, p313). Either way, Caputo importantly points out that they “represent important delimitations of normalization, refutation, and manipulation, ways to check the rule of the police … If what is called reason is always exercised within networks of power, then any really reasonable idea of reason must include a vigilance about power.” (Caputo 1987, p234)

Local resistance requires that we “invoke other possibilities, other ways to think” (Caputo 1987, p225), without “reduc[ing] reason to the principle of reason”. This does not imply irrationality, for as Caputo further reminds us “we should not give

away the word “reason” to those who have in mind only rule-governed processes and fixed decision-procedures. That is a very unreasonable view of reason, one which takes the play out of reason, which reduces reason to dead seriousness”. Reason cannot be left “behind in the hands of *Technik*, like a retreating army abandoning its comrades to the enemy” (Caputo 1987, p227).

What we are then seeking from our managers is not technical rationality, but reasonable reason, which is to be found in “protest, dissent and free play, the skill in writing differently and thinking differently, of debating openly” (Caputo 1987, p234). This is not an insignificant demand. Protest, dissent and free play are not the stock-in-trade of the manager, much less the information systems manager who deals with such fundamentally rational things as computer and information technologies.

In addition then to the question of the “thorny problem” there must be a further imperative for managers to pursue reasonable reason in the process of information systems evaluation. The fact that power and norms shape action does not absolve the manager, for as Caputo tells us “the thought of the flux does not leave action behind, does not let us enter a new world, make a leap into a different sphere where there is no longer any need to act.” (Caputo 1987, p239).

This imperative to pursue reasonability arises from the interpretation of evaluation as hermeneutic understanding. Evaluation should be the appropriation of meaning within the hermeneutic circle. But the hermeneutic circle, most importantly, is not a closed or vicious circle. For while hermeneutic understanding must start from the position that we have prejudice as fore-understanding, this fore-understanding relates precisely to that which we do not yet understand. “There is a polarity of familiarity and strangeness on which hermeneutic work is based.” (Gadamer 1975, p262)

This polarity must be fused in some way if we are to move to understanding, to insight, to a recognition of reality as some sort of truth. This we do through experience, which is not just the incidental event-flow of our lives, but experience which is fundamentally open to new experience: a hermeneutic experience. “The

hermeneutic consciousness has its fulfilment, not in its methodological sureness of itself, but in the same readiness for experience that distinguishes the experienced man by comparison with the man captivated by dogma." (Gadamer 1975, p325) Such experience, such understanding demands an openness to the other, a dialogic structure of understanding whereby a fusion of horizons can take place.

Hermeneutic understanding demands "putting one"s own horizon or standpoint "into play" and thereby putting it "at risk" (Caputo 2000). Hermeneutic understanding demands an openness to the other, which is not openness to absorb the other, or fuse the other's horizon *into* mine, but the opening up of possibilities which is made possible by perceiving the otherness of the other. And before this otherness of the other, this exteriority of the other, ethics begins (Introna 2000a). The responsibility to deal with the other as other is our ethical responsibility, and it underlies all genuine understanding. There is an ethical imperative for the manager to evaluate otherwise, not because ethics "should also be considered", but because it is there from the start, in the origin of our sociality and socially-grounded (situated) understanding.

Evaluation as it "ought" to be must therefore also be considered. It is not enough to stop at how it is, simply because these descriptions bear some resemblance to what we understand evaluation, phenomenologically (as it is concretely experienced by us), to be. If we are to find a way towards reasonable reason in evaluation, then we must be able to justify (reason about) our reason.

In the sections following I shall briefly discuss several interpretations of ethics as a basis for action. For while ethics as openness to the other "bears a critical relation to the philosophical tradition" (Critchley 1999, p5) it is helpful to see how, in particular, and in contrast to emancipatory and moral knowledge ethics, such an ethics is an appropriate way of dealing with the post-dualist understanding of how to act.

A) Emancipatory Ethics[23]

[23] It is worth noting that emancipatory ethics as described by Habermas has been used in information as the basis for critical theoretical studies, mostly in emancipatory systems design and development

Harbermas' emancipatory ethics rests on three basic claims about human existence. Fay (1987) describes these as follows:

> The first is that humans are typically unfree, dominated by conditions which they neither understand nor control…The second is that human life need not be this way. The third is that an increase in knowledge is the way the oppressed can liberate themselves and thereby better their lot

Such liberation is dependent on both moral competence, and discourse ethics, in the Habermasian framework of communicative action (Outhwaite 1994). That is to say, at the individual level, participants must be morally competent, whilst engaging in a form of discourse that will enable ethical, emancipatory action (the free speech situation). Moral competence rests, among other things, on the motivation and stage of moral consciousness of the participant, according to which participants acting at one stage of a developmental model are seen to be "more" morally competent than others.

The notion of moral competence, or incompetence, judged according to such a model, suggests that some motivations hold more value than others. Thus culturally interpreted needs (the motivation to fulfil a role) are less valuable than universalised duties (the motivation privately to uphold a universally ethical principle). From a hermeneutic perspective however, "valuing imposes our standards on beings instead of acknowledging how they are" (Polt 1999, p170). The process of valuing something becomes something destructive, rather than additive, because it is "precisely through the characterisation of something as "a value" [that] what is so valued is robbed of its worth. That is to say, by the assessment of something as a value what is valued is admitted only as an object for man's estimation." (Heidegger 1977, p251)

(Hirschheim *et al.* 1996; Hirschheim & Klein 1994; Lyytinen & Klein 1985; Mumford 1987, 1994; Myers & Young 1997; Wilson 1997).

Man thus becomes subject, estimating object, a position that inevitably requires some sort of metaphysical metanarrative, a super-position of sorts. Thus when Hirschheim and Klein (1989, p1209) argue for "improved technical control, better mutual understanding an continued emancipation from unwarranted social constraints and psychological compulsions", this can in turn be criticised as an "arbitrary ideological position", justifiable "only in terms of a metanarrative" (Wilson 1997, p196). From what position is the question about the position of the participants to be asked?

Habermas makes the central assumption that rational justification and refutation can be used to assess the position, to create societal norms. Rational consensus can emerge, given an ideal speech situation. In fact such a situation is seen to be essential given that "the grounding of norms and prescriptions demands the carrying-through of an actual dialogue and in the last instance is not possible monologically, in the form of an argumentation process hypothetically run through in the mind" (Outhwaite 1994, p54).

The ideal speech situation is thus a normative process, itself based on a principle of universalisation, so that it includes "those structural aspects of the good life" which can be separated from the concrete totality of particular forms of life in terms of universal principles of all communicative socialization" (Outhwaite 1994, p55). Consensus can be developed, and attain authority by virtue of a superior rationality, which is constituted by an ethical discourse, and which does not depend in any way on the relations of power or influence amongst the participants.

Wilson (1997, p198) suggests most succinctly that "this kind of authority does not exist". In fact as we saw in the previous chapter, rationality and the principle of reason, are themselves implicated in the network of power, transmitted in the network, and are "not an ultimate arbiter that transcends space and time" (Wilson 1997, p198). The actualisation of communicative rationality might conceivably reinforce and entrench existing (rational) power relationships, because it is by definition a totalising discourse, based on a universal principle. It seems that a normative discourse can be emancipatory only in one particular (universal?) sense of

the word. But how ethical is this? Can rules or pre-defined values really tell us how to act? For example, an emancipatory ethics put into practice in information systems evaluation would probably place worker interests ahead of shareholder interests, it being shareholder interests that are generally considered to be dominant in the existing power structures of capitalism. But such an evaluation would probably not succeed in the corporate environment, which does not allow for such priorities. Even if it did, shareholder interests having been overturned in favour of worker interests, who is to say that this is a better priority, or that the evaluation itself will be more skilful. It will simply be operating within an alternative regime of truth, unable to escape at least some such form of technical rationality.

B) Moral Knowledge Ethics

Gadamer(Gadamer 1975), following Aristotle, suggests that rather than consisting of rules, ethics corresponds to moral knowledge, a kind of knowledge that is clearly not theoretical or objective. "The knower is not standing over against a situation that he merely observes, but he is directly affected by what he sees. It is something that he has to do" (Gadamer 1975, p280). Ethics are not abstract rules or values that can be mentally applied, but closer to the skill of the craftsman who applies himself to making a specific instance of a thing, under specific circumstances.

In fact, even more so than in the case of practical knowledge, moral knowledge always requires application in the form of modification according to the situation at hand. The rules, tacit or explicit, can never be directly applied. Moral knowledge is by definition, "a matter of understanding how a general norm is to be given concrete content – or what its meaning is – with regard to a particular situation" (Warnke 1987, p93). In the case of technical skill, the rules can be bent, adjusted and otherwise amended to fit the situation at hand. Working-around makes for skilful application of technical knowledge. Moral knowledge, on the other hand, affects the rules themselves. Working-around, or fulfilling the rule as best as possible does not constitute ethical or moral action. Moral action itself gives meaning to the rule. Thus it is that "courage may involve a willingness to die but also a refusal to die, standing up for one's rights as well as yielding to others". Moral knowledge "is not

just a matter of fulfilling the norm of courage as best one can but rather of filling in what that norm actually means" (Warnke 1987, p93).

The means thus become as important as the end, and whilst that end is "the good life", this notion has no content. The means themselves, which are taken to fulfil this end, will determine what the end will be. Ends cannot be reached by pre-determined means. " The relation between means and ends here is not such that the knowledge of the right means can be made available in advance, and that because the knowledge of the right end is not the mere object of the knowledge either. There can be no anterior certainty concerning what the good life is directed towards as a whole" (Gadamer 1975, p287). This is a "reversal of the ethics of values", which will put in its place the particularity of moral knowledge, in a particular situation, on the background of "a more originary *ethos"* (Caputo 1987, p236).

The particularity of moral knowledge, and therefore of ethical action, becomes even more evident when we consider the moral knowledge of what others ought to do. In this case, the ethical action is not to impose ones own dogma on the other, or even to apply one's own experience. The ethical action is to want what is good for the other, in the other's particular concrete situation. We must be "united with the other person in this mutual interest" (Gadamer 1975, p288). In Heideggerian terms, rather than "leaping-in" or taking over the situation as our own, we must "leap-ahead" by directing ourselves towards the other's own way of existing (Polt 1999, p61). Our concern must not take over another's care, because "in this concern, the other can become one who is dependent and dominated even if this domination is a tacit one and remains hidden from him" (Heidegger 1953, p114). Leaping-ahead gives the other's care back to him as such, and enables us to treat others not as means but as ends in themselves (Polt 1999, p61).

Thus we see that in Gadamer's terms ethical or moral knowledge is an application to a particular situation. But what is it that is applied? Warnke (1987) draws an analogy to a game. Each particular situation holds its own moral imperatives, just as each instance of a game applies the rules in a particular way. As she points out:

> Both games and ethical principles must be represented by players and agents who act in light of norms and rules but who also act differently in different situations. Ethical knowledge and knowledge of how to play a game are thus both concretized only in the application of a general normative understanding to specific circumstances. (Warnke 1987, p95)

This does, however, imply that we need to know "the rules of the game". As in interpretation, in ethical knowledge, we must assume the truth, and modify it. In Gadamer's ethics as in his hermeneutics (and Gadamer uses ethics as a "kind of model for the problems of hermeneutics"(Gadamer 1975, p289)) there is evidence of a "peculiar oscillation" between truth and application, between the general and the specific (Warnke 1987, p99). For Gadamer, ethics is a form of hermeneutics, a problem of knowing what to do. And ultimately, knowledge comes back to understanding and the demands of the tradition. The "truth of Being", the "way an historical people settles into an understanding of the world, of the gods and of themselves" (Caputo 1987, p236), is seen to have direct ethical import (Heidegger 1977, p235).

Thus ethics is not an emancipatory ethics, but a knowledge ethics, having a profound respect for the tradition and for the effective historicality of understanding. But this kind of ethics is also subject to the criticism made of Gadamerian hermeneutics by Warnke (1987, p106):

> In my view, Gadamer fails adequately to distinguish … two senses of agreement, one of which entails a concrete unity of judgement and the other reflection and critical integration. In reducing the second sense of agreement to the first, moreover, he slips from an investigation of the conditions of understanding to the basically conservative thesis according to which we are not only members of a tradition but also its ideological supporters.

Perhaps more importantly, the use of ethics as a model for hermeneutics, implicitly placing the emphasis (a higher value?) on hermeneutics, reduces the ethical question to the hermeneutic one. This is misplaced, for as Caputo points out, "[Ethics] is not merely a hermeneutic problem in the Gadamerian sense. There is no question here of applying an agreed-upon standard, and Gadamer tends to ignore the subversion of hermeneutic *phronesis* by a diversity of power plays" (Caputo 1987, p261). By way of contrast, we have seen that reason (understanding, hermeneutics) is always political, always subject to the relations of power.

As an example of how we cannot escape the relations of power, consider the form human practice takes in the epoch of late modernity. *Gestell* in-forms all our practices, and human life itself, as the raw material of production and control. Ethical debates take place amongst philosophers, theologians, doctors, lawyers, managers, but always within the (en)frame of *Gestell*:

> Debates about the ethical use of life-supporting technologies, e.g., or about artificial insemination and abortion, take place within the framework of the hitherto unsuspected power to control human life which is granted by *Gestell*, and the resolution of these debates reflects the attitude that one takes to controlling life. (Caputo 1987, p237)

Particular ethical decisions must always be made within the concrete situation in which we find ourselves. They cannot be removed from this situation, and they cannot escape that which enframes the situation. If we reduce ethics to hermeneutics, then we can only accept such enframing as a necessary grounding of our moral knowledge. With a post-dualist understanding of action, however, we know that

> we act not with the security of metaphysical foundations but with a raised awareness of the insecurity to which we are exposed. We act not on the basis of unshakable grounds but in order to do what we can, taking what action as seems wise, and not without misgivings. (Caputo 1987, p239)

Knowing that we have "no view of the whole", we cannot reduce ethics to hermeneutics, even while (and because?) we understand that hermeneutics always has an ethical imperative, that every engagement in the world presupposes ethics. On such an understanding ethics must be what Caputo "as flippantly as possible" refers to as an ethics of dissemination, one which seeks to show up the inadequacy of the whole, the groundlessness of our grounding, on the basis of which we must act "but now with a transformed relationship to action" (Caputo 1987, p239). This ethics of dissemination I will discuss in the next section, by exploring more carefully the relationship between hermeneutics (how we try to understand within the whole – which is not whole) and ethics.

C) An Ethics of Dissemination or Deconstruction

The relationship between ethics and hermeneutics is a delicate one, for while it is important to see that we cannot reduce ethics to hermeneutics (because the diversity of power plays has ethical import in hermeneutic understanding), it is equally important to continue to bear in mind that to act hermeneutically, in a genuinely hermeneutic (open) way, we must be ethical.

This ethical action, however, we must clearly understand not to be an emancipatory ethics (into what state will we emancipate ourselves?) or a moral knowledge ethics, (which in the Gadamerian sense will rely on some existing tradition). Rather ethical action is both ethical and truly hermeneutic when it is open to the other. To be closed to the other, or even to grasp the other, but try to fuse him *into* my own horizon, my own way of understanding, is to do violence to the other, and therefore not ethical. Rather I must be prepared to put my own horizon at risk, to be open to the other, to open up possibilities through understanding the other as other. This is an ethics of dissemination, one in which we are prepared to diffuse (dif-fuse) our understanding, to open it up to other possibilities. This can lead to good (skilful) understanding, which is open and provisional, not dogmatic, within the hermeneutic circle. We must be open, while accepting that we are in the circle. Here we face a contradiction, because it is also the case that a circle is by definition closed.

Let us consider again carefully the nature of this hermeneutic circle. The hermeneutic circle tells us that the part and the whole are mutually constructed, each one on the basis of the other. And as Giddens points out, we cannot, except logically, separate the part from the whole, action from structure, understanding from prejudice. The hermeneutic circle is not some greater whole but precisely the factical situation in which we find ourselves; the concrete lived experience in which we are thrown and buffeted about by the ever-present forces of meaning, power and norms. We have no access to some supra-position of judgement, but can only confess the finitude of our horizon, the effective historicality of our being, the prejudice of our understanding. We must be open, but in a situation that seems closed. Somehow we must defy this finitude.

We can defy, dif-fuse, disseminate, only through local, deconstructive action. That is ethical action must be firstly local, in-our-lives, or improvisatory, and secondly deconstructive of the whole. I shall explain why this is the case in each of the two sections following.

- **Why an ethics of dissemination implies improvisatory understanding.**
  Improvisatory understanding is required because of the facticity of our experience. Experience, the "stream in which we move and participate, in every act of understanding" (Palmer 1969, p177) is made up of those very acts of understanding, as is the stream by drops of water. "Experience is always actually present only in the individual observation" (Gadamer 1975, p315). This facticity, the "here and now" of our action means that we *can* only act locally, in the situation in which we find ourselves.

  Local strategies for local action are not just the possibility, the space within which we can act, but are ethically demanded by the singularity of our experience. Here and now, facing this situation, needing to skilfully understand this circumstance, I must be open in my understanding. Pre-determined courses of action, which are, by definition, closed work for the more routinised decisions "that do not demand much of us", and which we

have seen are not even really decisions at all (Winograd & Flores 1987). By way of contrast, ethical decisions occur in the singular, in the "unprecedented situations of our individual lives". Furthermore, such singularities occur more often than not, which is why, even in routine, we have to "work at" our existence, improvise our way of being. It is inevitably the more or less idiosyncratic situations which constitute our day-to-day problems (Caputo 1987, p262). And if ethical understanding is thus singular, here and now, requiring extemporaneous action, then is seems to me that improvisation, which I suggested earlier as a more reasonable means of reason, is not just more reasonable, grounded or factical, but even an ethical means of proceeding. Skilful understanding is ethical understanding is singular, situated understanding is improvised, here and now understanding. Skilful evaluation is improvised evaluation.

- **Why an ethics of dissemination implies deconstructive understanding**

  The hermeneutic whole is structured by meaning, power, and norms; a regime of truth, which in our case is generally constructed as a regime of truth-as rationality, as *Gestell*. This cannot be neglected for, as Caputo tells us, "an essential part of addressing the question of ethics today is to get our sociology right, to learn to think our *Seinsgeschick"* (Caputo 1987, p256). Why? Because the regime of truth-as-rationality, as in any regime of truth, by definition always excludes at least some types of discourse, always excludes some people who cannot be admitted to be "saying what counts as true" (Foucault 1984, p73). The hermeneutic whole is not an infinite whole but an historical whole and it always excludes some other. It always, left unquestioned, subverts a genuinely hermeneutic ethical response, which requires openness to the other.

  Our action must, therefore, be ethically, and actively directed towards deconstructing the existing "power plays" which "subvert our hermeneutic

phronesis" (Caputo 1987, p261). We can lay claim to a genuinely hermeneutic experience (good understanding) only if we are conscious of the tenuous base on which any structures of meaning, power and norms exist, because they are based only on action. Our action must be always oriented to hearing and welcoming the other, all the while confessing the inadequacy of the basis on which such action proceeds. Even while we admit our prejudice we must be wary of our own tradition (regime of truth) in seeking understanding.

Instead of looking for some temple[24], some ideal normative mode of action, some evaluation framework, we must seek always the multiple meanings, the difference, the otherness of the other. An ethics of dissemination is always suspicious of the status quo, the hermeneutic whole, the institution, the "way things are around here". This is not to try to "level all institutional arrangements or discourage the formation of new ones" (Caputo 1987, p263) but to practice a Socratic questioning in respect of these arrangements, always asking, "what is the unasked question here?"

These sorts of questions must question "what is". They must discover what is unsaid. From within the hermeneutic whole, we question the whole. From within the regime of truth we find a way to act. In our action we are not blinded by prejudice, but open to the other. This is essentially a process of deconstruction. An ethics of dissemination is an ethics of deconstruction. Skilful understanding is deconstructive understanding. Skilful evaluation is deconstructive evaluation.

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[24] Heidegger suggests that in contrast to *Gestell*, the early-Greek epoch of techne was the only clearing for an originary or authentic mode of dwelling. But Caputo reminds us however, of 'the socioeconomic systems to which the temple belongs. It includes the slaves who dragged the stone up the hill. It includes " free man and slave, male and female, Greek and non-Greek" – entities which should be added to the catalogue of binary oppositions whose paths intersect at the temple' (Caputo 1987, p252). Pre-Enlightenment communities, having no real concept of the individual, 'have solidarity it is true, but it matters a lot where one is consolidated in the system of means and ends'.

Having considered a dialectic, post-dualist interpretation of evaluation, both as it is, and as it ought to be, I have reached a position where I can make this claim: skilful evaluation is both improvisatory and deconstructive. In the following section I shall elucidate what this might actually mean. In other words I shall describe evaluation as improvisation and deconstruction.

7.5 Evaluation as Improvisation and Deconstruction

Improvisation and deconstruction are in some sense closely related (they both seek to disseminate a whole) and yet in others different – requiring different kinds of action. Thus while sensitive to the common imperative they provide, of keeping "the game in play" (Caputo 1987, p258), I shall discuss each in turn.

7.5.1 Evaluation as improvisation

Improvisation may be defined as follows:

> Improvisation is situated performance where thinking and action occur simultaneously and on the spur of the moment. It is purposeful human behaviour which seems to be ruled at the same time by chance, intuition, competence and outright design. In improvising features of a situation are 'suddenly' (from the Latin 'improviso') framed and combined by the actor, so that they become resources at hand for intervention. (Ciborra 1999, p136)

The key components of improvisation are immediacy, situatedness, idiosyncrasy, local knowledge and access to and deployment of resources at hand (Ciborra 1996). Improvisation admits problems that are not yet set. It admits new voices in ways that are not predetermined. Improvisation is itself a process of exploration and discovery, constantly on-the-move, open to change, switching to another key. The shape of the conversation, the music, the decision, the implementation, unfolds over time, apparently extemporaneously – outside the flow of time. It "just happens".

Upon consideration we see that much of what is considered desirable in organisations, in decision making, in information systems evaluation, is certainly not improvisatory. Managers in organisations look for planned, defined, routinised and contained means of action. Where improvisation is admitted is it perceived to be marginal, the exception, the alternative means of action, adopted only in exceptional circumstances. It is "paradoxical practice". Yet Ciborra (1996, p369) suggests that improvisation is not only frequent and ubiquitous, but also much "more grounded" as a process, contributing to individual and organisational effectiveness. Action that "might appear to have no links with the task environment … after the fact, … turns out to be highly competent behaviour" (Ciborra 1999, p137).

In expounding a theory of information systems based upon improvisation, Ciborra (1999) points out that improvisation operates all the time in organisations. This extends from the more obvious cases of emergencies and market institutions, where at-hand sense-making (Weick 1993) is crucial to survival (physical or financial), to work organisations or hierarchies. He suggests that in organisations, "routines are virtual and improvisation is for real" (Ciborra 1999, p140), because in practice action is

- immediate - the same problem may be solved "now one way, now another";
- situated - skill is embodied (as a jazz musician has "the music in his fingers");
- idiosyncratic - present problems are subjectively reformulated on the basis of experience or hunch;
- local – sense making takes place communities of practice;
- with access to and deployment of resources at hand - the physical environment is integrated as necessary into the task, in a process of tinkering and *bricolage.*

If improvisation operates in the practice of work, how can it operate in the process of evaluation as understanding? We have already seen that evaluation as a process is considered to be a thorny problem. Perhaps if, as Ciborra (1999, p145) suggests, " routines, plans and business processes …are fantasized" then it is also true that evaluation as a formal process must be an illusion. Competent information systems evaluation in-the-world must be, cannot be otherwise than, improvisatory by nature.

What does an evaluation conversation as improvisation look like? I would suggest that this conversation is not very different from some of the conversations that managers actually have about choosing this information system or that. It is simply that these conversations are not admitted as the valid conversation. They take place around the coffee machine, in the short breaks in the meeting, as asides and "by-the-ways". They are not minuted. Evaluation "decisions" are pre-scripted symphonies, but not everybody has the score. The music is not skilfully played.

By contrast, the skilful manager can play good jazz. The jazz session needs to be admitted as valid, the playful conversation borne in mind. A jazz session is not an incoherent jumble of sounds. It is not an unreasonable reason. But neither is it dominated by a score. It remains open, cautious and humble, compassionate to all the voices, but at the same time leaping ahead with gusto, switching keys, changing melodies. It will not play again in exactly the same way.

The ethical imperative then is to admit such improvisatory action as valid in the context of information systems evaluation and to structure the evaluation conversations – or not to structure them? – such that the unanticipated, apparently extemporaneous outcomes can emerge. In the next chapter I shall make some suggestions on how this broad idea might be applied in practice.

7.5.2 Evaluation as deconstruction

Caputo (Caputo 1987, p261) tells us that in acting ethically, as much as in being able to act at all, we face

> … not merely a hermeneutic problem in the Gadamerian sense. There is no question here of applying an agreed-upon standard, and Gadamer tends to ignore the subversion of hermeneutic *phronesis* by a diversity of power plays. It is rather a deconstructive problem which requires vigilance about the subversion of discourse by a priori metaphysical schemes, by exclusionary practices, by a rhetoric systematically bent on sustaining the prevailing order.

But are we to go about this "subversion of discourse"? What constitutes deconstruction in evaluation? In trying to understand how this might be made possible, I shall draw primarily on Caputo (1993), who is concerned with ethics, with "constant reference" to deconstruction, while at the same time attempting to remain true to the imperative of deconstruction as a means of de-constructing a particular situation or text.

We must then ask, what is deconstruction? Or rather how can we act deconstructively? To act deconstructively is to "maintain the vigilance of the critical stance … to engage in a continual confrontation with dogmatic slumber" (Critchley 1999, p253), which we can only do, Caputo suggests, in "a free assembly of diverse points of view in which men and women with mixed motives and with uneven intellectual and rhetorical abilities will hammer out solutions for this problem or that, with more or less successful results" (Caputo 1987, p261).

Still, how are we to hammer out solutions? And how do we even identify "this problem or that"? It is important to see here that deconstruction always works in respect of a text. This is not necessarily a written text, but rather an extension of the concept of the written sign to the entire field of experience. This is important not because it allows us to use deconstruction, most often employed in respect of written texts, in "this problem or that" but because of what the concept of the written sign means. The sign "is arbitrary and differential and language is a system of differences without positive terms and without an anchor in the plenitude of presence". Thus experience "is not an experience of presence, but rather the experience of a network of differentially signifying traces which are constitutive of meaning. Experience traces a ceaseless movement of interpretation within a limitless context." (Critchley 1999, p262)

In the evaluation conversation the "text" is thus not just that which is documented. Rather, the text includes the statements and arguments put forward by the actors; the models and frameworks proffered as justification for these arguments; the challenges

and counterargument and the entire flow of discussion in the making of all these arguments, as it happens. Experience as text, text as experience, understood in this sense implies that "there is nothing outside the text", because the actors are necessarily thrown in their construction thereof. As with any text as experience, there is no greater whole, no possibility of grounding. Deconstruction operates in anticipation of flux and groundlessness, rather than some stable whole or tradition. There will always be another interpretation.

That said, what deconstruction demands is not an arbitrary imposition upon the text, but rather a double reading from inside the text, "which enacts a determinate destabilization of the stability of the dominant interpretation or intentional self understanding of [the] text" (Critchley 1999, p257). There are a number of important points that arise from this understanding.

Firstly deconstruction works, from inside the text. That is, what is to be understood is the text itself as it stands, the situation as it presents itself. There is a "hermeneutic principle of fidelity", in terms of which "a reading is true in the first instance to the extent that it faithfully repeats or corresponds to what is said in the text" (Critchley 1999, p23). This, hermeneutically speaking, is what Madison (Madison 1990) refers to as the principle of appropriateness: the questions the interpretation deals with must be ones which the text itself raises. One should not "transgress the text by reductively relating it to some referent or signified outside textuality" (Critchley 1999, p25).

Secondly, deconstruction works as a double reading. This means that we are first of all obliged to understand faithfully the dominant interpretation of the text, through a commentary on the text. Such commentary is always already interpretation, but not a free interpretation, but one which must render the minimal consensus concerning the intelligibility of the text. This is an important step because "otherwise, one could indeed say just anything at all" (Critchley 1999, p24). Thereafter the double reading acts to open "up to the blind spots or ellipses within the dominant interpretation" (Critchley 1999, p23), which is not to say that this reading is something negative or a process of demolition, but rather that looks for "a position of alterity or exteriority,

from which the text can be deconstructed". Deconstruction seeks an openness towards the other, from within the text, through "the destabilization of the stability of the dominant interpretation" (Critchley 1999, p27), which arises necessarily out of the first reading of commentary.

This we cannot do through analysis, "which presupposes a reduction of entities to their simple, or essential, elements" (Critchley 1999, p21), and especially not through some sort of technique or methodology "assimilable by academics and capable of being taught in educational institutions" (Critchley 1999, p22). (So in some sense "how" is a "futile and wrong-headed" question (Caputo 1987, p261)). Rather we are looking for moments of insight or interruption that allow us to "discover insights within a text to which that text is blind" (Critchley 1999, p30).

In ethical action we must therefore seek stratagems by which we can be open to the other in a particular text (situation, conversation). In discussing such stratagems (which are necessarily local strategies for local action) Caputo suggests that we "[proceed] from a salutary deconstructionist mistrust of all … binary schemes, in which the privileged term represses and excludes its opposite, it other" and give "what is other as big a break as possible". Hence we must begin "by systematically reversing these oppositional schemes, reversing the discriminations strategically, in order finally to displace oppositional arrangements in favor of the open and non-exclusionary" (Caputo 1987, p260). Having understood what it in the text, what is obvious in a particular situation, we must find what is absent, marginal, resistant and anomalous. We must let other voices speak that which is not in the first instance spoken.

This is, of course, a risky proposition. We risk, in looking for the other, upsetting or overturning what we already understand. Organisationally, it may be suggested, we cannot function like this, because to search for the wholly other will be to collapse the organisation. But as Caputo points out, we need not be opposed to institutional organisation. It is sufficient "only to keep such organizations honest, to stay on the alert to their equally "natural" tendency, once established, to resist alteration, to

suppress and normalize" by insisting "that institutions have come to be partly through prudence and partly through power politics, partly by the cunning of reason and partly by raw cunning" (Caputo 1987, p263). To put it rather crudely, we must be prepared to acknowledge in our organisations the political realities of the organisation, and resist the notion that there is validity in "the way things are done around here".

Such resistance requires an extraordinary degree of trust and caution. For if we disseminate the way things are done around here, then what will take its place? If we let other voices speak what will they say? It is precisely because of their otherness that we cannot, at any point in time, know. There is always the possibility of other others. "The unforeseeability of the wholly other represents a kind of nemesis to the present that keeps the present off balance and prevents it from acquiring too much prestige" (Caputo 2000). We must therefore insist upon provisionalness not only because we live in a world of competing notions of "the good life", of multiple truths and ways of being, but also because the other is inherently unforeseeable, and therefore not subject to our certainty. We must never presume to know what the answer is. We must never close our decisions, architectures or designs. How ironic that the technologists learnt this some time ago.

How then do we act deconstructively in the evaluation conversation? How do we make our conversations ethically skilful, and therefore genuinely hermeneutic? How do we achieve good understanding about an information system? Following the discussion above, there are a number of imperatives to be borne in mind. The first is to understand the evaluation, as it is, within the regime of truth, from a technical rational perspective. We must allow for the dominant interpretation, and seek minimal consensus on what this interpretation might mean. We must thoroughly understand the evaluation on its own terms, and interpret it in terms of its own meanings.

Secondly we must then ask what is other, opposite, excluded, in this evaluation. What other meaning might there be in the evaluation as it stands? Can the outcomes of the techniques in use be interpreted differently? What is the alternative

interpretation? And who has not spoken and what is it that they have not said? What voices should we admit here that have not yet been heard? Typically senior managers engage in these kinds of evaluations, but who else might there be whose interests should be brought into play? And how do we give their interests priority, to reverse the discrimination strategically, to deliberately undermine the regime of truth at work in this process? How do we emphasise (rather than dismiss) what does not seem to fit, even while recognising that we cannot necessarily give it force?

And when we have done both of these things, and found some interlacing of meaning, some skilful understanding, we must maintain "our sense of the contingency of our schemes" (Caputo 1987, p258) and always leave the decision open for revision. We must acknowledge that we have hammered something out for the time being, in a pragmatic and situated way that seems as if it might work, now. And we must be prepared to change our minds about it later. We must acknowledge the political realities that have led to the decision, not cynically and with distrust, but openly and with affirmation. We must see that evaluation as deconstruction does not deprive us of evaluation as understanding, or reason, but rather provides a "more sensible accounting" of what we can do, and actually do. As I will for improvisation, in the next chapter I will give some suggestions of how these broad ideas might be applied in practice.

7.6 Conclusion

In this chapter, I have sought to examine how it is that action might, after all, be possible in the context of the power-pervaded social body, and more specifically to address the question: "how can a genuinely skilful evaluation conversation be made possible in the context of the organisation as a regime of truth?"

The use of Giddens's (1984) structuration theory as the basis for a post-dualist interpretation of evaluation enabled me to suggest an understanding of evaluation as it is, which is coherent with the interpretations of both individual and organisational evaluation that I had derived from previous turns about the hermeneutic circle, in chapters four to six. So in that sense, this chapter has reconciled that dualism to

provide a further, dialectic understanding. Further to this understanding, of evaluation as it is, however, a genuinely hermeneutic, dialectic interpretation turns out to have an ethical imperative too. Thus it is not enough to stop at how evaluation is, and I found myself compelled to ask the question, how should evaluation be. From the ethical perspective, from the hermeneutic need to admit the other, as other, it seems that evaluation should be not just reasonable, but improvisatory and deconstructive, and therefore, in a circular way more reasonable (justifiable, open and therefore genuinely hermeneutic) too.

Which is the point to which these journeys about my own hermeneutic circle have brought me thus far, the understanding that I have been able to reach. This understanding can itself of course, only be provisional. Like Caputo I cannot aim at a conclusion but an opening. I cannot seek a closure but an opening up. So it is with this confession in mind, that I shall now get off the hermeneutic circle, as it were, and in the next chapter attempt (whilst avoiding any suggestion of normative prescription) to apply this understanding of evaluation to some suggestions for practice.

8 The Information Systems Evaluation Conversation: Construction and Deconstruction

Having understood the requirement for improvisation and deconstruction in the evaluation, it is then possible to suggest some heuristics for evaluation based on these ideas. This is not a recipe or framework for evaluation, but a more general interpretation of the kind of conversation that might be more skilful in providing a good understanding of an information system.

8.1 Introduction

In this chapter, I will give some suggestions of how the notions of evaluation as improvisation and evaluation as deconstruction might be applied in practice. This I must do because ultimately managers will, in response to these ideas (which is all they are) ask "so what?", and "what now?" At the same time I must disclaim any pretensions to providing a methodology or even an approach. Neither improvisation nor deconstruction could admit the validity of such prescriptions. It is not my intention in this text to provide some sort of normative model, method, technique or recipe for information systems evaluation. The "right" way of evaluating cannot in any sense be *a priori* structured to be correct or even "right". There is no super position from which such judgement can be made, no access to the truth (moral or otherwise) outside of at least some regime of truth. Action and the choice of action are inevitably adrift on that depth of uncertainty which Caputo tells us is the flux. There is no way back to "safe shores and terra firma" (Caputo 1987, p267), and if by demanding instructions for action managers hope thence to be steered, then I can only disappoint them.

I can, however, suggest that there is always the possibility of local resistance, of dropping a rudder into the water, of influencing the drift. In each stage of this cumulative account of information systems evaluation in-the-world there are indications of how such a rudder might be constructed, how managers might begin to act in information systems evaluation in a way that allows for the appropriation of meaning in an improvisatory, deconstructive way. This can, of course, remain only

as a trace of ideas, some trail of my journeys around the hermeneutic circle as we edge towards a conclusion that can never be reached, for the circle must remain open. What follows can only be construed as some heuristics (more ideas) for how managers might make use of the implications of this journey.

Let me then assess the point to which this journey has brought me. In the previous chapter, the further hermeneutic development of my argument led me, via a post-dualist interpretation of evaluation, to claim that skilful evaluation, which takes places through skilful conversation, is both improvisatory and deconstructive. The imperative for managers in organisations who wish to evaluate information systems in a skilful way is, therefore, to deconstruct the evaluation conversation. But what does this mean? First of all, before we can deconstruct the evaluation we must, by implication, construct it. And ideally, this conversation should be as skilful as possible, within the constraints of the regime of truth as rationality in which managers always already are. Such skill I would suggest is to be found in the improvisatory mode of situated understanding. Secondly, having constructed the conversation, managers should then find ways of deconstructing it. This we have seen, basically relies on the stratagem of a double reading of the text. But where the text is the conversation itself, how will managers engage in such a double reading, and to what outcomes is such a double reading likely to lead them? In the sections following I shall attempt to elucidate some heuristics for each of these requirements - construction and deconstruction - by drawing out the implications of the thesis (my hermeneutic whole?), in respect of each of these.

8.2 Construction

The construction of the evaluation conversation will, I have suggested, be more skilful if it is an improvisatory process of situated understanding. In deriving heuristics for such understanding, we can draw on the interpretation of understanding as the appropriation of meaning (as discussed in chapter four), the importance of situated, narrative knowing (as discussed in chapter five) and the notion of improvisation (as suggested in chapter seven). Importantly, these ideas are not separate from one another. The post-dualist view of evaluation has shown us how

they are, in fact, entirely intertwined. And therefore each of the heuristics that follows may draw upon more than one of these notions.

8.2.1 Skilful engagement

The first heuristic derives from the overlap principle (a text can only be understood in terms of a pre-existing whole) in terms of which, the "receiver must engage in the hermeneutic circle, [with an] understanding of *Erlebnis*, the context or large whole from which the text emerges." (Introna 1997, p70). Thus managers need a deeply skilful understanding of the situation in which they are engaged. Such understanding can never be derived from method (although it does not preclude the development of method) but from the managers' engagement with the situation. The simple implication of this heuristic is that the managers require not only experience but also a significant depth of engagement with the evaluation situation. A fragmented and superficial involvement will necessarily be inadequate for involvement in the world, and can only result in technical/rational and (even more likely) political manoeuvring about the world (Introna 1997, p181). In other words, it is unlikely to be consultants or even executive directors who can engage in this way. This has significant implications for the simple question of who conducts the evaluation.

This is not to say that the appropriation of meaning requires a focus to the point where the managers become narrow-minded. On the contrary, *Erlebnis* is only possible if a person is open to possibilities: "the experienced person proves to be, ... someone who is radically undogmatic; who, because of the many experiences he has had and the knowledge he has drawn from them is particularly well equipped to have new experiences and to learn from them" (Gadamer 1975, p319) Such experience (which we sometimes call wisdom) is reflected by the managers in an awareness of their presuppositions, a remaining open for the possibility of revising these. Managers must be willing to have their assumptions surfaced and questioned. And then they must be willing to amend them. This is often difficult in organisations where reputations are on line, so to speak, and revision is too often seen as failure. And yet if we were to draw on *Dasein's* meaning in this way, we would see that the only

failure is closure, which leaves us blind. The courage to see is an essential condition for an ongoing hermeneutic journey of understanding.

This is, of course, not to say that managers can assume an objective stance towards their own assumptions about an information system. We have seen that the manager involved in an information systems evaluation is thrown in the situation in which she finds herself, and can never step entirely outside of it, to "know" it as an object, in such a way. The manager knows through her involvement, hermeneutically and precisely because of her prejudice [pre-judgements]. What is important here is not that she attempt to rid herself of or deny her prejudice, but rather that she acknowledge that she must be somehow prejudiced and that she always will be prejudiced, in one way or another. Such awareness must then not leave her resigned to her prejudgements but willing as far as she can to revise them.

Thus the first heuristic can very simply (heuristics are by definition simple) be expressed as follows:
The managers who engage in the information systems evaluation conversation should be:

- *intimately involved with the specific organisational context within which the information system will operate;*
- *willing, as far as possible, to surface the assumptions they hold about the system and the organisation;*
- *willing to revise those assumptions.*

8.2.2 Narrative construction

The second heuristic has to do with the evaluation conversation as conversation. This must be a conversation: firstly, because any individual manager, in appropriating meaning, must be able to express her interpretation in language appropriate to her *Erlebnis;* and secondly, because the process of such narrative or expression is constitutive of the very process of knowing. The use of language as narrative in particular may be used to tell a story which surfaces the implicit assumptions, or background of meaning on which actions are taken as well as the events of the story

themselves. A most important implication of this is that narrative is not an idle luxury of tea-time chatting, but a fundamental process through which communities of practice (which do not necessarily correspond to organisational structures, but are crucial to the process of knowing) are constructed and maintained. Such a perspective on narrative would allow organisational actors to tell their own stories, in their own frames of reference, and in their own words, acknowledging the importance of this process rather then expecting them to "stick to the point".

However, even while narrative is fundamental to our social construction of meaning, this heuristic poses thorny questions for information systems evaluation. Managers, enframed by the technical rationality of *Gestell*, find themselves trapped in the manufacturing of representative data, the requirement to justify the decision in the only language available, that of economic argument and canonical texts - "best practice". The problem with such "best practice" is that is it not necessarily pragmatic, in the sense of being rooted in their informed practice as managers. Instead of coming to a skilful evaluation based on the pragmatic, situated, social narrative available to them, managers end up paying lip service to the importance of theory, and employing frameworks and techniques in overly simplified, and often also cynical, ways.

This is not to say that theories themselves must become inadmissible, but rather that they should be open to challenge on the basis of practical wisdom. Too many managers are intimidated by theories and conceptual frameworks, to the point where they surrender their own understanding in deference to the theory. This becomes even worse when the theory, or the output generated by the use of a theory, or method, is produced by a piece of software. Experience becomes bent to suit the theory. Instead of blindly accepting theories (where these must be used) the managers should actively challenge the theories on the basis of their understanding. Even better, managers might spare the theories in favour of narrative and history, which themselves articulate an engaged, rather than abstract, understanding of the world, in this way admitting that which is hermeneutically significant, and allowing assumptions to show up. For the organisation this suggests that a radical departure

from the traditionally admissible forms of communication to other forms such as storytelling and play, may be necessary.

The second heuristic is therefore:
In the evaluation conversation, any method or subject of discussion should be allowed. Narrative, in the form of stories, histories and scenarios, should be facilitated and encouraged.

8.2.3 In-forming the conversation

Thirdly, hermeneutic understanding "is not the same as representational knowing" (Introna 1997, p70). The manager's skill does not derive from knowing facts about the organisation. The manager is not a store of knowledge about the organisation (and definitely not a component of any system, knowledge management or otherwise!). Information, therefore, does not provide the input or basis for decisions. It is rather the in-forming of the manager, the meaning that results from an engagement with data, providing a further articulation of the already present whole. Information in the context of the evaluation conversation is useful as "equipment in-order-to get the job done", within an equipment whole (Introna 1997, p180). The specified costs of the system only make sense in the context of its benefits, which only make sense in the context of the organisation and its strategy, style and contingent circumstances, which are understood by the managers because they are engaged in the historical process of collaborative, situated and narrative knowing that is the organisation.

Only the possibilities already understood by the managers can show up. In other words, additional information is useful because it may articulate distinctions about the situation, not because it is structured data, intelligence or power in itself. As Boland points out: "These fantasies lead us to ignore the fundamental nature of interpersonal dialogue in the achievement of meaning." (Boland 1987, p363)

The implication of this is that the quantity of information generated in the evaluation process is of far less significance than the quality, not in the sense of accuracy or

"truth", but in the sense that it can articulate for the managers meaning about the system that is congruent with (which is not to say that it agrees with, but that it can be understood in terms of) their practical consciousness, their historical engagement within the organisation. Information about any system must be grounded in the "collective practices that give it sustained social meaning" (Spender & Grant 1996, p55).

Where managers are required to fill in forms, complete calculations or populate frameworks in ways that are not congruent with their informed understanding about the system, there is a strong possibility that they will construct "facts" for the sake of compliance and ritual, rather than engaging in a process of genuine understanding about the system. And as Caputo points out, blind application of the rules does not lead to a good decision. Every judgement should be fresh, having suspended the law, because "every 'case' is different… the situation is not a case but a singularity" (Caputo 1997, p136).

The third heuristic is therefore that
Information as input to the evaluation conversation should be appropriate, as determined by the managers engaged in the evaluation. It should not necessarily be determined by forms or frameworks which have to be filled in, or calculations that have to be completed, because these are too often populated in meaningless ways, to produce numbers that have little validity, but are used as "proof" of some particular "truth". The value of information is not its "objective" nature, but rather the sense it provides for those involved in the conversation.

8.2.4 Improvisation

All three of the heuristics discussed thus far are congruent with a notion of evaluation as situated, pragmatic, contingent: that is, in some sense, improvised. Managers improvise in the evaluation conversation all the time. In understanding a particular information system, they do not engage in socially constructed narrative practices of knowing for the sake of it (although we all enjoy a good discussion). The many discussions that will take place about this system or that, are not necessarily idle

chatter or gossip, not when they are helping managers to deal with the effective demands of the situation. It turns out that "non-value added" activity of this kind may, in fact, be highly competent behaviour.

To paraphrase Ciborra (1999), the challenge then becomes to base the evaluation process on the systematic appreciation and nurturing of emerging practices of improvised, serendipitous conversations. We do not need more sophisticated techniques, or more structured processes. We need to appreciate and trust the flexibility and appropriateness of improvisation, and "enable *tout court* the free exercise of intuition and ingenuity" on the part of managers (Ciborra 1999, p152). Instead of looking for more discipline on the part of managers, in the application of more rigorous methods, we should encourage understanding through the free play of ideas, the association of multiple stakeholders in the process. Managers should be encouraged to explore as many ramifications of the system as possible, casting the net of their conversation to include the non-economic, the unlikely and even the irrational. We should ask of managers that they invoke other possibilities, other ways to think, that they resist reducing reason to the principle of reason. Having recognised that it is the undecidability of a decision, the fact that a simple rule cannot be applied, which gives us something to decide at all, we must then allow that the means of action must be "continually invented, or reinvented, from decision to decision in the occasionalistic and 'inventionalistic' time of the moment" (Caputo 1997, p138) A reasonable evaluation need not be determined by only rule-governed processes and fixed decision-procedures. Rather than such technical rationality, we require reasonable reason, which is to be found in "protest, dissent and free play, the skill in writing differently and thinking differently, of debating openly" (Caputo 1987, p234).

The fourth heuristic is thus:

The expression of the process of evaluation should take any form that seems appropriate to the stakeholders in the process. There should be no a priori fixed definition of participants, process or categories. Protest, dissent, free play and open

debate must be not just allowable, but encouraged in the context of the evaluation conversation.

These heuristics are, I am aware, deceptively simple, and undoubtedly fiendishly difficult in practice. They make demands upon the organisation that will not be easy to fulfil. And this is not just because managers will be unwilling, or resistant to change. Too many managers bemoan the existing state of information systems evaluation for me to believe that they would not like to do something differently. It is just very difficult for them to do so. In trying to act differently, they are trapped, and we have seen that it is the regime of truth as technical rationality, in *Gestell*, in which they are trapped and from which they cannot ever entirely escape.

Improvisation as a means of local action would, I think help managers to construct conversations that are a little better, a little more meaningful in sustaining skilful conversation in the evaluation process. Still, these are only local strategies for local action, and *Gestell* remains. It is unlikely that the conversation will be constructed entirely differently, outside of any technical rationality at all. (Much as I found it necessary to impose structure in writing this thesis, I would surmise that a completely unstructured conversation would border on unintelligibility to the managers.)

There is, in addition to improvisation, therefore, a further option (which is also, as outlined in chapter six, a further imperative), which is to deconstruct this construction, for managers to engage with the evaluation as a text and attempt a double reading of the situation. Some heuristics for how they might begin to do this I suggest in the next section.

8.3 Deconstruction

Deconstruction does not attempt to collapse the existing scheme, leaving nothing but destruction and chaos. Such aims might indeed be “dangerous, and potentially disabling” (Parker 1995). Instead, in asking managers to deconstruct the evaluation conversation we are asking them to seek in the evaluation the different/deferred, that

which has not been said. Deconstruction is a process of not just confessing, but surfacing the inadequacy of the account, the insufficiency of the evaluation conversation as it stands. This deconstruction proceeds through a double reading of the text, a commentary and a de-construction, in order to find the chiasmus (Critchley 1999), the point at which these cross. A this point, there might be some interlacing of meaning, some better understanding, which will, nonetheless, itself still and always be provisional. In the following sections I will discuss each of these: commentary, de-construction, and provisionalness.

8.3.1 Commentary

The evaluation conversation always proceeds with the regime of truth as rationality. It will inevitably incorporate the technical rational perspective, and probably also those techniques that operate within this perspective. In deconstructing this conversation, managers must understand first of all the evaluation as it is from this very technical rational perspective. They must thoroughly understand the evaluation on its own terms, and interpret it in terms of its own meanings.

Now this may well be easier said than done. As I observed in chapter six, the regime of truth as rationality that constructs the information systems evaluation conversation is experiencing incommensurability. Managers are aware that the formal approaches are highly deficient in generating real understanding of the costs and benefits of the system (Walsham 1993). That said, it is important that the first reading establish a dominant interpretation, or at least a minimal consensus, without becoming subject to a pervasive and overwhelming cynicism.

It is equally important to see that the first reading, as commentary, is always already interpretation. It is not “a pure and simple repetition”, even while it must remain faithful to the text, to what was originally said. And such interpretation must itself be skilful (“scholarly”) in that the managers must have competence in understanding the multiple contexts that determine the text, as well as the text itself. To put this more concretely in terms of the information system evaluation, we encounter once again the necessity for the managers concerned to be involved or engaged in the organisation

such that they have a genuine understanding of the conversation. Furthermore, the managers must be well versed in the concepts underlying the techniques in use, and able to discern what it is that they are trying to achieve.

A fifth heuristic (following on from those relating to construction) is therefore as follows:
Managers should not necessarily reject outright technique and method in the evaluation conversation, but rather ensure that they are competent in the use and application of the techniques.

And further, a sixth:
In interpreting the evaluation conversation, managers must seek a minimal consensus with regard to what the techniques and methods are able to tell them, while acknowledging that this is necessarily an interpretation.

8.3.2 De-construction

Having firstly constructed some sort of conversation, and a commentary or interpretation of it, the next imperative is for managers to deconstruct, in a second reading (which will, of course, itself be further conversation) this evaluation, this text. This is probably the most difficult idea of all, and will be the most problematic of the heuristics, simply because it is so unfamiliar, and will place the managers on such uncertain ground. After all, deconstruction, which seeks the "destabilization of the stability of the dominant interpretation" (Critchley 1999, p23), is bound to leave managers feeling a little queasy.

The questions that must be asked in deconstruction are, therefore, the difficult ones. They relate to the voices that have not yet been heard, that which has not yet been said. They require us to acknowledge overtly, the political realities of the evaluation conversation, and query what or whom it is, that such a reality might have excluded. By definition, these questions must be particular to each evaluation situation, asking in general, what is not said here? However, with the proviso that this is not a recipe or checklist, here are some suggestions of the kind of question that might help:

- Is there an alternative interpretation that can be placed upon the evaluation, as we have thus far understood it?
- What is the political reality in which this evaluation must take place?
- Whose interests are, and need to be, served by this evaluation?
- Whom else, whom we have thus far neglected, might we consider in this evaluation?
- What does not fit in this evaluation? What bothers us about it?
- What are the possible unintended consequences of the system?

If such questions are well asked, and answered, with affirmation rather than cynicism, then managers, I think, will find that the questions were worth asking, and that they, the managers, have a more sensible accounting of the situation, a "better" understanding of the value of the information system.

A seventh heuristic is therefore that:

- *In respect of de-constructing the conversation, managers should ask deconstructive questions about the original interpretation of the system. They must continually attempt to let the silent voices speak.*

8.3.3 Provisionalness

Whatever understanding is reached on the basis of the interpretation and de-construction of the evaluation can only ever be provisional. In evaluating an information system, managers, having reached some sort of reasonable understanding, must acknowledge that what they understand may be skilful because it is situated and pragmatic, but that it is therefore also only something that seems as if it might work, now. It is striking, in most organisations, how few managers are prepared to back track, to admit that circumstances have changed, and that things did not work out quite as they might have anticipated. The requirement to save face, is apparently, as Argyris (1996a) suggests, universal. This is not reasonable reason. There is no reason why managers should be expected to know what cannot yet be known, to foresee the unforeseeable. And to close decisions, to resist alteration and difference, simply because "a decision has been made", cannot ever be skilled or competent

behaviour, whatever reasoning or rationality may have underpinned the original conclusion.

To act in such a way can only be construed as arrogance. There is of course no shortage of that in organisations, especially amongst senior managers (who are after all "successful") and information systems people (who very often hold a special technical status). In contrast, Caputo (1987) shows us, true understanding, through dissemination, through a genuinely open hermeneutic approach, requires humility and prudence. We must confess the inadequacy of our accounts and by thus instructing ourselves in the lesson of humility learn always to proceed with caution, leaving as many options open as possible.

As an eighth heuristic for information systems evaluation:
The process of evaluation should always remain open-ended. Summative or "final" evaluation, before or after implementation, should not be allowed in any sense. The decision taken must always remain open for revision. This will imply that

- *funds for a complete implementation are never guaranteed*
- *evaluation is ongoing (even if not necessarily formal) throughout the lifecycle*
- *systems implementations can be , and are, halted, revised or decommissioned*

8.4 Evaluating Differently: the Vignette

If my suggestions make any sense at all, then I should be able to show how my imaginary story might have played out differently. I should be able to construct a different, yet equally plausible, scenario for this thought experiment.

Before discussing alternative options, I shall repeat the original story, which has developed in the course of the thesis, so that in considering what might have been different, in this evaluation process, had each of the heuristics above been adopted at some point or another in the process, the original story is clear.

Susan, the director of IT strategy and capacity planning at a major retail bank, is engaged in reviewing the current systems in use at the bank. These are very sophisticated and complex. In fact the bank prides itself on running an online, real-time, fully integrated mainframe system, which has allowed it to be the one of a few banks in the world to provide real time posting on financial transactions, irrespective of where they take place on the country-wide network.

The requirement for a system

Susan is reviewing the performance statistics on the system, which show that the system provides in excess of 99% availability on a month-to-month basis, with an average response time of 2-3 seconds per transaction. These appear to be very satisfactory statistics, but when considered in conjunction with the capacity utilisation figures are a cause for concern. The system is operating at close to 85% capacity, even though the overall MIPS available have grown ten-fold over the last ten years. Susan is concerned that if usage grows much more, capacity could be exceeded, and the system could experience a major outage. While there is remote disaster recovery in place this works on a 12-24 hour delayed manual transmission of data via tape, and a major failure would paralyse the bank in the short term.

With these concerns in mind, Susan decides to investigate alternative architectural possibilities for the mainframe system. She discovers that increasing mainframe capacity will be very difficult, as the bank already uses the largest mainframe available. Upon further investigation however, she discovers a capacity management system that will allow two mainframes to work together in tandem, remotely across a considerable distance. This system will both load balance, and provide real time remote backup. The system, front-ending the two mainframes available (host and backup), will thus provide both capacity and resilience – the two pressing issues in terms of the IT strategy for Susan at that point.

The justification of the system

Susan is now faced with justifying the system. This is going to be a difficult task as the total cost is in the region of R100 million, and that sort of number attracts the attention of senior management. Susan thus approaches George, the divisional accountant, for assistance in drawing up a cost benefit analysis.

George quickly points out that the calculation of the net present value of the system is very difficult, because the benefits are not easily quantifiable. What is the benefit of not experiencing an outage. What would an outage actually cost? This would depend on when it happened, and for how long. And what is the likelihood of it happening? There has been substantial growth in utilisation over the past ten years, but customer acquisition in the bank has slowed substantially. Even if the system were to approach capacity, intelligent queuing of transactions, while slowing response time, could salvage capacity. What

would the cost of slower response times be? George believes that an objective assessment of the benefit is essential. But since he can isolate no direct quantifiable benefit, he cannot assist. A financial justification would appear to be impossible.

Susan then decides to review the alternative evaluation methods available to her. Amongst the many frameworks and decision models she finds, she considers the key performance indicator approach, based on the balanced scorecard model, to be the most comprehensive. Unfortunately this approach is complex, demanding and costly, and Susan needs to get the budget for the system approved at the next senior IT portfolio committee meeting, in time for the new financial year. Furthermore it requires that the business strategy should have been defined in terms of the balanced scorecard, and although Susan knows that there is a project in place to develop such a scorecard for the bank, the corporate strategic planning department, when approached, refuse to release the draft scorecard, which is still considered confidential.

The dilemma

Susan, while herself convinced of the necessity for ensuring capacity and resilience has at this point no formal rational means to justify the system. Can she get it approved by other means? The basic business objectives seem appropriate, but even so she would prefer to be able to present a more disciplined, rigorous assessment.

Susan, pursues her search for a more appropriate method, and encounters some ideas which may enable her to approach the system evaluation problem in a convincing way. If she can persuade senior management to understand the system in the context in which it is necessary, then perhaps she can get approval for the system. Intuitively she likes the idea of understanding not just the content of the system (in financial and non-financial terms) but also the process necessary for evaluation, and the context in which is must take place.

Unfortunately what Susan cannot find is a straight-forward methodology that will let her put all of this together. And the process and context part seem very hard. They address issues like learning and culture, and Susan, an IT manager, is very uncomfortable with the idea of trying to work with these. All the ideas seem terribly academic, and not related to her immediate problem.

A possible solution

Susan is very troubled by her lack of progress, and obviously quite stressed when she bumps into John. John, as a director of information technology, is a member of the senior IT portfolio committee to whom Susan must shortly present her as yet non-existent proposal. He is also very technologically savvy, and convinced of the necessity for the bank to remain at the leading edge of IT implementation. John is therefore not pleased to hear of Susan's lack of progress, but is quick to come up with a solution. The corporate strategy

division, he tells Susan, while it is still working on the balanced scorecard, has come up with a list of strategic drivers which will direct the banks activities in the future. If she can tie her project into the strategic drivers, which have been endorsed by the CEO, the portfolio committee will have little choice but to approve the project. In fact the CEO himself will be at the meeting, because such a large project is on the agenda, and he will be very pleased to see the results of his latest strategy session in use so quickly. John promises to send Susan the list. He also warns her, however, that a cost benefit analysis will be considered mandatory in a proposal of this nature, and that she must include one in her proposal.

When Susan gets the list of strategic drivers she is very relieved. There, in black and white, and on the strategy division letterhead, it quite clearly states that the following are critical to the success of the bank:

1. e-delivery of financial services across traditional and new electronic channels
2. reduction of the cost to income ratio

With reference to this document, Susan draws up a proposal in which she points out that the new system, by providing a 'fault-tolerant, resilient platform for mission critical financial transactions', will support electronic delivery across multiple channels, as well as the low cost processing of financial transactions. In fact, the more transactions the bank can process, the lower the cost per transaction will be, and the higher the cost to income ratio on electronic processing. The cost benefit analysis is a little more difficult. However Susan, by making some assumptions about the nature and costs of down time in the banking environment, and increased (and therefore lower cost) transaction processing, is able to draw up a reasonable convincing calculation. Certainly the result, in terms of net present value is positive, and the system appears to provide a rate of return well in excess of the minimum required in the bank. A matrix of system benefits to the business drivers, and weighted risk analysis, as well as an implementation schedule, complete her proposal. As a concluding note Susan points out that:

'This investment will provide a world class financial transaction processing system that will enable the bank to be the dominant player in the provision of money transmission services.'

The Meeting

Susan is at last comfortable that she can approach the policy committee meeting with a firm and well defined proposal in hand. Unfortunately, what Susan does not know, and what John has neglected to mention to her, is that there are members of the committee who are strongly opposed to any further large scale information technology projects at this point. The bank is facing tremendous pressure from its new owners to improve profitability through direct cost cutting methods, and the IT budget, currently somewhere around R1billion per annum, is a considerable target for such pruning.

145 150 155	At the meeting, these committee members are quick to perceive what Susan has done. While Susan, defended by John, puts up a valiant attempt to defend her proposal as rational, they attack it as being unfounded, or at least simply ritualistic. The cost benefit analysis is firstly attacked, and then brushed aside, and an attempt by Susan to explain the strategic drivers to benefits matrix becomes mired in a misunderstanding of what the strategic drivers actually are. It seems the words Susan used in the matrix are slightly different from those discussed at the strategy session, but an attempt on her part to explain how they basically mean the same thing is ultimately dismissed as 'intellectual claptrap'. Accusations of empire-building, and ego-stroking fly across the table. Susan's proposal appears to be seen as a purely political ploy on the part of senior IT management (in particular, John) to maintain the budget. Susan, who genuinely believes in the value of her assessment, suddenly finds herself in a corporate battlefield. The meeting is very uncomfortable indeed.

This story, I would suggest, might have played out differently had the various heuristics suggested above been adopted at various points in the process. In the discussion that follows, I shall suggest how this might have occurred, with respect to each of the heuristics, and specific instances (referenced by line number) in the story.

8.4.1 First heuristic

The managers who engage in the information systems evaluation conversation should be

- *intimately involved with the specific organisational context within which the information system will operate*
- *willing, as far as possible, to surface the assumptions they hold about the system and the organisation*
- *willing to revise those assumptions*

The managers in the meeting do not all appear to have been intimately involved with the system context, and some of them held sweeping positions regarding investments in information technology, going into the meeting (137). If the managers in the committee meeting had indeed all been hermeneutically open to surfacing and revising assumptions, the meeting might have progressed differently. Instead of attacking Susan's proposal directly (145), the participants in the meeting might have attempted to surface some of the underlying assumptions about the organisation and

the proposal that they held. That is, they might have made time to discuss the overall approach to information technology in the bank, and having identified that it had previously been important to the bank to be leading edge in its use of technology (5), then discussed whether or not this was still the case, or whether the cost cutting requirements (140) were going to affect the basic information systems strategy.

They may also, having been open to their own prejudice, have been able to engage in a "better conversation" than that which they did have, in which derogatory and personal comments (152) were the order of the day.

8.4.2 Second heuristic

In the evaluation conversation, any method or subject of discussion should be allowed. Narrative, in the form of stories, histories and scenarios, should be facilitated and encouraged.

Susan felt obliged to present a well-defined proposal which included a matrix of strategic drivers to system features, as well as risk, cost and implementation schedules (112-130). This was not productive in the meeting because the other managers sensed that they were the victims of a sleight of hand of sorts – look here it is, how could it be otherwise? It was as if the rationality of the proposal was being used to cover what was really happening behind the scenes – or at least that is how they might well have perceived it.

If Susan had rather been able to present a story or scenario of her own understanding in her own words, in which the stated and acknowledged intent was to attempt to persuade the other managers of her point of view, then the persuasive function of the presentation would have been surfaced and, furthermore, the other managers would have had an explicit opportunity to construct counter-stories. "Yes, but what if it went like this…" And in this way a better understanding of the situation might have been reached.

8.4.3 Third heuristic

Information as input to the evaluation conversation should be appropriate, as determined by the managers engaged in the evaluation. It should not necessarily be

determined by forms or frameworks which have to be filled in, or calculations that have to be completed, because these are too often populated in meaningless ways, to produce numbers that have little validity, but are used as "proof" of some particular "truth".

If this heuristic had been followed, Susan would not necessarily have felt obliged to complete the cost benefit analysis (119), which we have seen was in itself somewhat flawed, and which in fact undermined her case at the meeting, because it provided a target for attack, before being brushed aside (146).

8.4.4 Fourth heuristic

The expression of the process of evaluation should take any form that seems appropriate to the stakeholders in the process. There should be no a priori *fixed definition of participants, process or categories. Protest, dissent, free play and open debate must be not just allowable, but encouraged in the context of the evaluation conversation.*

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As the meeting was a committee meeting, only members of that committee were present, and able to participate in the evaluation process. Because it was such a large project, this meant that these were senior members of the organisation (92). Susan attended the meeting because she was the proponent of the proposal. However, if participation had not been thus fixed, participants at the meeting might have included not just senior management but others who could contribute to a skilful understanding of the system. Perhaps information systems specialists who could have explained the capacity and resilience issues, and the technical importance of these, might have been included. There may have been service staff members who could have discussed why real time posting(5) is or is not important or union members who could comment on implications of other cost-cutting measures (139).

Furthermore, if protest and debate had been encouraged in the context of the meeting, and construed as positive developments in the evaluation process, then the meeting might have been seen to be productive, rather than uncomfortable (156).

8.4.5 Fifth heuristic

Managers should not necessarily reject outright technique and method in the evaluation conversation, but rather ensure that they are competent in the use and application of the techniques.

Assuming Susan had completed the cost benefit analysis, then the managers might have undertaken a careful evaluation of the assumptions behind her analysis, and evaluated it on its own terms, coming to understand both the validity and shortcomings of the information it provided (121). This would have been more constructive than simply accepting or dismissing it (146).

8.4.6 Sixth heuristic

In interpreting the evaluation conversation, managers must seek a minimal consensus with regard to what the techniques and methods are able to tell them, while acknowledging that this is necessarily an interpretation.

If the managers had carefully sought to understand their own understanding of the system, then they might have done their best to understand issues such as the "strategic drivers" and reach a common interpretation of these. Instead, we have seen they glossed over these and other issues, dismissing any further discussion as "intellectual claptrap" (151).

8.4.7 Seventh heuristic

In respect of de-constructing the conversation, managers should ask deconstructive questions about the original interpretation of the system.

If the managers had asked what the political reality was they could have surfaced the issues of the new ownership of the bank (139), and the demands that this was placing on all managers and divisions in the bank, explicitly. This would have enabled them to discuss the evaluation in the light of this reality, openly and more constructively.

If the managers had asked whose interests would be served by the new system, they would have acknowledged that the new system would serve "information systems

interests" by allocating a substantial amount to the information systems budget (38), requiring more staffing, and giving the information systems department continued status as leading-edge practitioners in the information systems community.

If the managers asked whom else they might consider they may have explicitly tried to consider the various points of view of customers, staff, other divisions. A broader stakeholder analysis would have been considered to be appropriate.

If the managers had asked what made them uncomfortable about the evaluation, they may have questioned the connection between e-delivery and the necessity for a mainframe, for example. They may have explicitly identified that the very size of the investment bothered them, and that the possibility of being on the bleeding edge was undesirable to some.

If the managers had asked what the possible unintended consequences of the system might be, then they would have identified potential effects on other implementations, the requirement for integration to other systems, the demand that would be placed on scarce information systems resources, the extent to which the bank would be reliant on the vendor and possibly many others.

8.4.8 Eighth heuristic

The process of evaluation should always remain open-ended. Summative or "final" evaluation, before or after implementation, should not be allowed in any sense. The decision taken must always remain open for revision. Managers should ensure that

- *funds for a complete implementation are never guaranteed*
- *evaluation is ongoing (even if not necessarily formal) throughout the lifecycle*
- *systems implementations can be , and are, halted, revised or decommissioned*

Following this heuristic, the managers, if they had approved the system, would not have guaranteed the entire R100 million up front. They would have continued to discuss the system on an ongoing basis, and been willing to cancel the project at any stage. Once the system had been implemented they would have been willing to

decommission it if appropriate. Approving the investment would then not necessarily have been a question of "maintaining the information systems budget" (154), but provisionally allocating funds, on the basis that they could be withdrawn. It is hard to build an empire on a provisional budget.

If the managers had not approved the system, they would not necessarily have closed the subject for discussion, but would have been willing to consider it again at a later stage.

8.5 Conclusion

In conclusion, I cannot say how the story works out in this case. Given that it is a thought experiment, I could construct any ending I liked anyway, and what meaning would that hold? I can only suggest that the alternatives proposed seem plausible, in the light of the case as it was originally written (which is of course in this case "the text"). I cannot even say that none of these issues would have been addressed without an explicitly improvisatory, deconstructive approach to evaluation. In fact I strongly suspect that, in many cases, information systems evaluation is a lot more skilful than managers themselves would give credit for. All I can claim is that these heuristics might, if broadly followed, give managers a more congruent, common understanding, when they come to trying to understand the implications of a system.

Neither can I claim that these heuristics will be in any way easy to adopt. I anticipate that managers in seeing them would respond by saying, "that's all well and good, but…". And they will probably ask for a framework or methodology to follow. These ideas of mine will seem too unconventional perhaps, maybe even too difficult to explain. But that does not mean that frameworks and methods are the answer. My response must be that, having "tried very hard to think differently" (Introna 1997, p189), I must ask of managers that they try very hard to think differently too. Managers can reach a skilful, hermeneutic understanding about an information system, if as a basic strategy, they are willing to remain open to possibilities, rather than defining fixed routines for action.

The final question then becomes, have I myself engaged in a skilful hermeneutic understanding about information systems evaluation? In the first chapter of this thesis, I suggested that I would follow a dialectic hermeneutic approach in attempting to do so. Can I now validate this claim, by showing that the process I have followed has not been arbitrary, and that my approach has been consistent with the requirements for hermeneutic understanding? In the following and concluding chapter of this thesis, I will attempt to demonstrate that this is in fact the case.

9 Afterword – summary, review and conclusion

Thus in conclusion, we have an interpretation of improvisatory, deconstructive evaluation, as a process of hermeneutic understanding. The argument that has been used to develop this interpretation can, furthermore, be shown to be a process of hermeneutic understanding in itself.

9.1 Introduction

At the beginning of this thesis, in chapter one, I suggested that the logical structure of my argument might be presented diagrammatically as shown in 1, repeated here as Figure 11. According to this structure, there are three distinct elements to the thesis, the reflexive, the theoretical and the applicative.

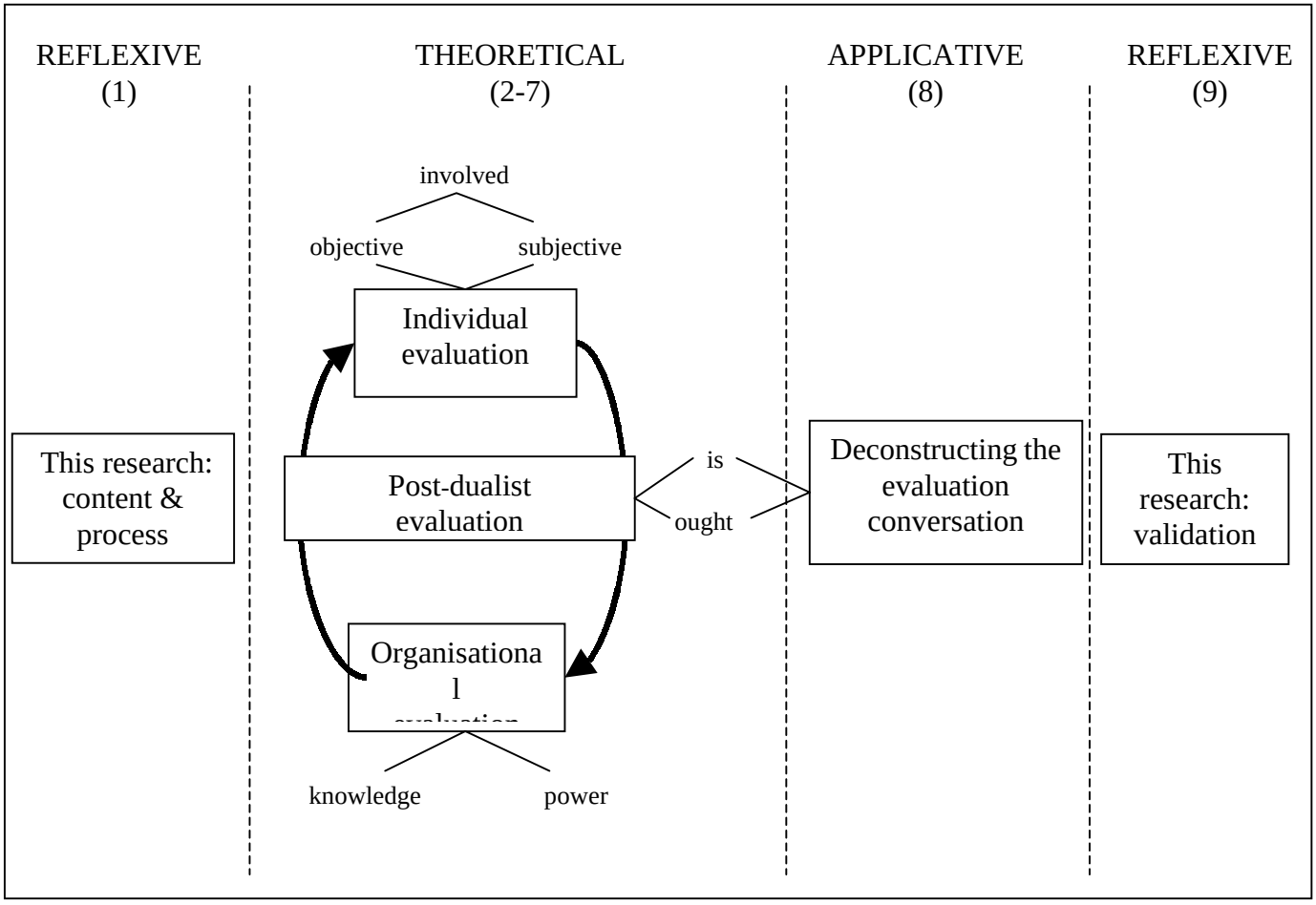

Figure 11: The logical structure of the thesis

Therefore, at this point I must, having mapped out my path in the chapter one, and followed that path in chapters two to eight, here in chapter nine reflect upon the journey I have taken. Is my claim to having thereby reached a skilful understanding of IS evaluation as it is experienced by managers in-the-world a valid one?. I must validate my claim that this has been a hermeneutic journey of interpretation, rather than a random or arbitrary one. Furthermore, since I have in this argument suggested that a skilful understanding should be also deconstructive, I myself must attempt at least some brief deconstruction of the arguments, or at least a consideration of that which has not yet been said.

In order to do this I shall proceed as follows: I shall firstly summarise the journey taken, that is, the development of my argument through the course of this thesis, and the conclusion thereof. Secondly, I shall review this argument, specifically with a view to demonstrating the application of Madison's principles for phenomenological hermeneutics (Madison 1990) as discussed in chapter one. Thirdly I shall attempt to think through the silent voices in my argument and assess that which has not been said, in the context of the argument as it stands. Finally I shall conclude this afterword.

9.2 The Hermeneutic Journey

My objective in this thesis has been to provide a coherent and convincing account of IS evaluation, from a hermeneutic perspective, that bears a closer resemblance to what IS managers experience and actually do in their everyday being-in-the-world. This objective has been realised through an iterative process of hermeneutic understanding that has itself proceeded as follows:

Neither objective nor subjective accounts of evaluation as a process were seen to provide a good understanding of this special case of understanding: They provided only archetypes of the manager engaged in the evaluation of a system. However, through an account of the involved manager as *Dasein* (thrown in the everyday world of her existence, making sense of the questions about the information system), I have shown that we can account, at the individual level, for the lack of adherence to

prescriptive practice as evidenced in the literature. The manager does not apply technique and procedure to the evaluation of information systems, because the systems themselves (being social/technical constructions) do not admit of such technique, and because the manager herself has a more involved understanding of the system, without necessary recourse to formalised, functional methods of decision making. Involved in-her-world, the manager is able to appropriate meaning about the information system from which resolution can emerge. She does not in fact need to make a decision as such.

This account is extended from the individual involved manager to the collective of managers in the organisation who must come to some common understanding, (known as a decision) about the information system in the organisation. Such understanding is developed through collaborative, situated and, importantly, narrative, processes of knowing, in which managers share experience, understanding and histories. It is in this process that an understanding of the system and its implications and possible outcomes is reached, and the possibility of resolution achieved.

Nonetheless, the less than satisfactory record of decision making about, and implementation of, information systems points to the potential for some sort of distortion in this process, which leads to less than ideal outcomes. This distortion, I suggest, is produced by the network of force relations that is power operating in the organisation. Such power is not one-sided, juridical, uni-directional, or even oppressive. Rather it is operant in the social body in such a way that every individual and every institution is both medium and outcome of the network of relations. Specifically, the appropriation of meaning and the apprehension of “truth” are constructed within a regime of truth in which power, drawing on the norms appropriate to that regime, both constitutes and is constituted by that which can be admitted as valid.

Thus it is that, acting within the regime of truth generally appropriated to information system evaluation, that of technical rationality, managers attempt to construct rational analyses of the expected outcomes. They are aware that alternative forms of

understanding will not be admitted as fact or truth, even whilst there may be a general underlying cynicism as to the value of the product of such analysis.

This does not imply that managers cannot act in information systems evaluation, or even that such evaluation is predetermined in some way. This is not a dualism, because action and that which determines action, which we can call structure, are not separate in any way. Through a consideration of structuration theory as a means of overcoming such a dualism, we rather see that meaning, power and norms (each of which has been considered) are inextricably intertwined with action. The manager evaluates by understanding-with, on the basis of her interaction-with, in the form of a conversation that is simultaneously generating and structured by meaning, power and norms.

In this way I can account for that which information systems managers experience on an everyday basis in-their-worlds, and shed some light on the seemly intractable problem of information systems evaluation, which continues to be the scourge of practitioners and academics. I can account for evaluation as it is in-the-world. Still such an account must be lacking if it cannot suggest how the manager should act. The manager, aware of her involvement, constrained by the regime of truth cannot simply throw up her hands and admit defeat. She cannot be naïve to the existing regime of truth, nor paralysed by the contemplation of the depth of uncertainty behind seemingly certain practices. She must find a way to reach an understanding that can be construed as “skilful” in some way.

A consideration of how the manager can reach a skilful understanding, hermeneutically and ethically, shows us that “skilful” understanding cannot, in any sense, be *a priori* structured to be correct or even “right”. There is no super position from which such judgement can be made, no access to the truth (moral or otherwise) outside of at least some regime of truth. Rather, the manager must be genuinely hermeneutically open in her understanding, open to the other, open to new understanding. This necessarily implies that understanding, which in this case means evaluation, must be both improvisatory (because improvisation is not closed) and

deconstructive (because deconstruction looks for openings). Suggestions can then be made for how the evaluation conversation might be thus improvisatory in its construction, and also deconstructed.

This then is a summary of my hermeneutic journey, the various expanding horizons of understanding through which I have moved in the course of this thesis. How then do I now demonstrate that this has been a good journey, genuinely hermeneutic in itself and leading to a good understanding of evaluation?

9.3 Reviewing the Journey

My approach in this thesis, has been, I have claimed, a dialectic hermeneutic one. However, as I noted in chapter one, a dialectic approach is importantly not a licence for arbitrariness, and while that which I have been trying to understand has ontological primacy, or at least co-primacy, with my own understanding (the circle in operation), it is "the subjectivity of the interpreter himself which has methodological primacy" (Madison 1990, p27). In other words, I must be able to be held responsible for my interpretation.

To demonstrate such responsibility requires that I can show that I have fulfilled certain normative requirements in the form of a "set of interpretive principles…whose purpose it is to orient action" (Madison 1990, p29) and that is appropriate to phenomenological hermeneutics. In this section I shall, therefore, attempt to show how my work in this thesis has been consistent with the set of principles expounded by Madison for this purpose.

Madison's principles apply in particular to the interpretation of "a work". In a broader endeavour such as this thesis, which attempts to understand a particular issue of importance in information systems and the body of literature relating to that issue, it is necessary in some cases to amend these principles. In outlining Madison's principles in chapter one, I extended or paraphrased them where necessary to take account of this. I shall use the principles as given in chapter one here.

9.3.1 The principle of coherence

The interpretation must be coherent in itself, it must present a unified picture and not contradict itself at points. (The thesis must be consistent in terms of its theoretical base and central themes.)

The theoretical base throughout this thesis has been that of a dialectic understanding. Thus in my discussion of individual evaluation, I proceeded from the opposing archetypes of objective and subjective evaluation to a dialectic understanding of evaluation in-the-world. In my discussion of organisational evaluation, I overturned the opposing interpretations of learning-in the organisation, and learning-by the organisation to achieve an interpretation of learning as encultured (that is situated, pragmatic and narrative) knowing. Finally, the post-dualist interpretation of evaluation achieved through a consideration of structuration theory is itself dialectic in overturning the notion of understanding as being either structured by, or determinant of, meaning, power and norms.

Central themes that have emerged in the thesis have been of conversation (or dialogue) and improvisation. We have seen that evaluation as a process of understanding or knowing emerges through conversation because conversation as interaction is the primary means of constructing meaning (of course all the while structured by existing meanings). Such conversation, in order to be skilful (open and ethical) is improvisatory, because meaning is best established in this way. Improvisation is grounded and competent and should be admitted as such.

9.3.2 The principle of comprehensiveness

In interpreting an author's thought, one must take account of this thought as a whole and not ignore works of his which bear on the issue. (The thesis must be comprehensive in the breadth of its sources and use of primary as well as secondary literature.)

The comprehensiveness of my understanding can be judged by the breadth of my sources, which extend from the traditional information systems evaluation literature, to a wide variety of other sources. The depth of the sources is also important and can be judged by the extent to which I use sufficient appropriate texts in each of the areas

covered, and the extent to which I use primary (Gadamer, Heidegger, Giddens, Foucault) sources, rather than secondary ones.

9.3.3 The principle of penetration

A good interpretation should bring out a guiding and underlying intention in the work. (The thesis should not reach obvious or superficial conclusions.)

The conclusions reached in this thesis (to the extent that there are conclusions) are I think not necessarily obvious or trivial. They are certainly not the received wisdom in this area but, at the same time, I believe that they ring true, given the extensive empirical evidence available. The interpretation of information systems evaluation that I have reached provides reasonable reason for that which might underlie the paradoxical practice reported in the literature.

9.3.4 The principle of thoroughness

A good interpretation must attempt to answer or deal with all the questions it poses to the interpreted text. (The thesis must deal with the question as posed in this opening chapter in a thorough way, dealing with both argument and counter-argument in its exploration of the issues.)

In the opening chapter I asked why it might be that information systems evaluation is seen to be so difficult and paradoxical in practice. I suggested that I would try to reach a better understanding about this issue than those understandings generally suggested in the literature, which often focus on the characteristics of the systems, rather than the process of understanding them.

I believe that I have dealt with this question in a thorough way, firstly in terms of the content of the thesis, and the way it is structured. I have dealt with "both sides" of the issues, in objective and subjective views of individual evaluation and in learning-in and learning-by views of organisational learning. Secondly, in my discussion I have sought to provide alterative and counter arguments, for example by contrasting Habermas' interpretation of power and ethics with the interpretations of Foucault and Gadamer. Thirdly, the development of the evaluation vignette has shown how a

particular, simple situation can be thoroughly understood through the application of these various ideas or theories, to provide various interpretations of the situation. Fourthly, the two-handed reading suggested in the deconstruction of the evaluation conversation extends this principle to the evaluation process itself.

9.3.5 The principle of appropriateness

The questions the interpretation deals with must be ones which the text itself raises. (The question at hand must be a "real" question, of import in practice, since the information systems evaluation is a phenomenon of management practice.)

I have, in the thesis, shown that the question at hand is a real question by reference to the extensive body of literature that suggests that information systems evaluation is problematic. So firstly, the question is one that practice raises because evaluation is a difficult phenomenon of management practice.

Secondly I would suggest that the question I have specifically chosen to explore (namely how it is that managers evaluate in-the-world?) is a good one, since it does not focus on the problem as it obviously appears (why is evaluation so difficult, badly done, political or subjective?) or as it is usually constructed (how can managers evaluate a particular kind of a system?) but rather on the more basic problem of how managers can begin to evaluate any system at all.

9.3.6 The principle of contextuality

An author's work must not be read out of context. (The theoretical basis of the thesis must provide understanding appropriate to the problem at hand; the explication of the issue must be recognisable.)

The basic underlying dialectic approach (the theoretical basis of this thesis) has expanded my interpretive horizon in such a way that I have been able better to understand the problem, that of information systems evaluation. This is evident through my application of the various dialectic interpretations to the problem of information systems evaluation, and more specifically, through my application of the concluding heuristics for skilful evaluation to the evaluation vignette. To the extent

that this vignette is, in all instances of its development, congruent, I can claim to having provided a recognisable account of information systems evaluation, both in the story itself, and in the theoretical ideas that I have applied to it.

9.3.7 The principle of agreement

Agreement (1): One must not normally say that the "real" meaning of what an author says is something quite other than what he actually does say.

I have not anywhere in the thesis suggested or presumed that any author was saying anything other than that which they have said, although I have obviously critiqued what they might have said, on the basis of other authoritative sources.

Agreement (2): A given interpretation should normally be in agreement with the traditional and accredited interpretations of an author. This principle must not be blindly adhered to.

I have in general both used and adhered to the traditional and accredited interpretations of the specific texts that I have used. Where I have extended any interpretation, in particular, that of Giddens's structuration theory, I have carefully pointed out why it is that I believe that this theory is basically post-dualist, and therefore suitable for such an interpretation.

9.3.8 The principle of suggestiveness

A good understanding will raise questions that stimulate further research and interpretation.

The understanding I have reached at this point is an all senses open and provisional. It should not be construed as closed or even concluded in any sense at all. In this way it must raise questions that require further interpretation.

9.3.9 The principle of potential

A given interpretation should be capable of being extended.

The interpretation presented in this thesis as a whole demonstrates the potential for thinking differently about information systems evaluation. In itself it is capable of being extended, because it does not presume to provide the last word on evaluation, but simply to try and make a difference to how managers might think about it. The heuristics provided are in no way a normative or closed methodology for evaluation, but open and provisional in themselves. Therefore the instantiations, or uses of, these heuristics, will necessarily vary, and be capable of extension.

Having demonstrated the application of Madison's principles in this thesis, I believe I am able to validate the claim that I have made to having taken a dialectic hermeneutic approach. The claim can be seen to be genuine not because I have applied a set of rules but because I have shown that I have proceeded in a norm-governed way. There has been a congruence and integrity between the content and the process of my work, in the form of a double hermeneutic dialectic. The thesis is both dialectic and hermeneutic, in consideration of what has been shown to be a form of dialectic hermeneutic understanding: information systems evaluation.

9.4 Attending to the Silent Voices

Nonetheless, while I have shown that my own hermeneutic interpretation is a congruent one, there are necessarily silent voices or points of view that have not been explicitly raised in that interpretation. A deconstructive perspective demands that I consider these voices, who might appeal that I have "gotten it all wrong" and missed the real point of the information systems evaluation conversation.

To consider such voices is, of course, by no means to undertake a thorough deconstructive reading of the situation. Such a reading is beyond the scope of this thesis (owing to the exigencies of the requirement to complete it). But it should at least begin to address some of that which has not been said. The remainder is appropriate to the "further research and interpretation" (Madison 1990) which a good hermeneutic interpretation provokes.

Who would consider that I might have it all wrong? I can think of at least three groups of people (not necessarily distinct) who might make such a claim. These are practising managers, rational positivists and critical theorists. I will consider their points of view in each of the sections following.

9.4.1 The practising manager's objection

> This thesis is not adequately grounded in practice. There is no empirical evidence or even observation of practice, only a theoretical attempt to understand what we do, not from inside the corporate world, but from the remoteness of some philosophical ivory tower. That is why the heuristics for practice are so idealistic and probably impossible to realise.

In attending to this objective I concur entirely that there is no primary empirical evidence in this thesis. This, however, rather than being an oversight is a deliberate strategem. I have not attempted to provide a rich empirical description of practice. This is not only because such descriptions are admirably extant in the literature but more importantly because I have attempted instead to engage in a different way of thinking about evaluation. This has been to apply different ideas to suggest a new theory of information systems evaluation, rather than another description.

Furthermore, whilst the ideas that I have applied are in many instances philosophical ones, this does not mean that my understanding of information systems evaluation is remote. I have not only focused on philosophical notions in this thesis but also on my own understanding of information systems evaluation as it occurs in-the-world, which is itself grounded in several years of practice as an information systems manager, engaged in and observing information systems evaluation practices.

This is not to say that I claim any definitive understanding of such practice, or that this interpretation of mine can in any way claim to be the last word; "the theory" that must be "true". Both my own grounded understanding and my interpretation as presented in this thesis remain open and subject to enrichment. I claim only a

sufficient level of understanding to sustain the interpretation and adequately illustrate the applicability of my argument. Such applicability lies in the extent to which the descriptions, analogies and vignette that I have provided ring true.

The provisional understanding is furthermore not invalidated by the idealistic nature of the heuristics. I would firstly claim that they are pragmatic (grounded in actual practice) rather than idealistic. Secondly, while they may not be easy to apply, they are at least not fictitious as many "methods" are. By way of contrast, I would suggest that if the heuristics had to be summed up in a single injunction this would simply be to be honest (true) about the game.

9.4.2 The rational positivist's objection

> This thesis is interesting, but does not give enough credibility to the objective standpoint. It certainly does not qualify as rigorous academic research, because it lacks objectivity and therefore validity in its method, style and argument.

"And ne'er the twain shall meet". It is probably not possible to engage with a pure rational positivist from the hermeneutic standpoint. This thesis provides, from just such a standpoint, an extensive discussion of why it is that a purely objective position is not possible. Any observation must always be interpreted in some way, and such interpretation is coloured by prejudice and shaped by the network of power in which the observer always already is. Even observations themselves are selected and thus never neutral but value and interest-laden from the start. Both research as a process or method, and information systems evaluation are influenced by this reality. It is my experience that the pure rational positivist social scientist who would deny this completely does not exist. This is a voice that carries considerable institutional authority but often wavers in its conviction.

9.4.3 The critical theorist's objection

> This thesis may provide a hermeneutic interpretation of information systems evaluation but it is not sufficiently critical in this

> interpretation. In suggesting that power can be only locally resisted through improvisation and deconstruction, the author fails to account for these processes in a way that proves why they are more valuable than other more explicitly emancipatory values. It is also not sufficient to suggest some broad sort of ethical openness as the author does here, without providing some normative guidelines or model for critical action.

This sort of requirement for a normative method of resisting power is based on the idea that such a method can somehow in itself carry more moral authority than the existing power structure. Given however, that such a method must itself fall within some regime of truth, it becomes clear that such a method cannot in fact be realised, because the imposition of rules a priori closes the conversation in such a way that the rules themselves become resources for power. The method becomes a power structure.

Improvisation and deconstruction on the other hand, are aimed at allowing us to stay open, to create situations in which it is always possible to hear the dominant and other voices. This ethical obligation is the only "rule" that is possible in terms of deconstruction. And deconstruction itself has value precisely because it is thus a theory that does not exclude other theories, a normative position which does not impose on other normative positions. If value can be attached to any means of proceeding, then deconstruction as such a means is valuable precisely because it does not try to prove its own value. It does not try to close other arguments and it cannot force the point. The ethical obligation to attend to all voices can always be refused.

9.5 Conclusion

This thesis cannot really have a conclusion, because dialectic hermeneutic understanding can never be closed. I have attempted to close, or enclose, it in some sense, by beginning and ending with reflexive thoughts on the thesis itself, thereby pretending "to have a definite beginning and a distinctive conclusion". But, as Caputo further puts it "we do not aim at a conclusion but an opening. We do not seek

a closure but an opening up" (Caputo 1987, p293). That is why I have entitled this final chapter "afterword", because these words have been only a reflection afterwards, after I have stepped off the hermeneutic circle, and after I have attempted some application of my understanding.

Ultimately, the only authority, or closure that I can claim for this work, will rest upon whether or not it can make a difference to how managers, thrown-in-the-world, and researchers, thrown too in theirs, can think about the thorny problem of information systems evaluation, not as a rational process, but as history, story, narrative and debate.

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