

A PARADIGMATIC TEACHING  
OF ARCHITECTURAL  
HISTORY

ROGER FISHER

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# A paradigmatic teaching of architectural history

## Summary

This essay proposes an approach to the teaching of the history of architecture, here termed the paradigmatic approach. It derives from an understanding of Kuhn's 'paradigm', and the consequent stratification of Western chronology into paradigmatic episodes. A paradigm is defined as a shared temporal intellectual model which directs and limits the normal activities of a community but which is mutable, undergoing shifts or changes after episodes of crisis. It is proposed that through the hierarchy of artefactual interpretation, namely pre-iconographic, iconographic and iconological interpretation, the student accesses the 'worlds' of physical (World 1) and objective (World 3) reality and thereby 'recapitulates' the cultural past. This in turn allows for the development of the critical and creative abilities of the student, that of the subjective realm (World 2). As such the approach is seen as being suitable for the teaching of history within the architectural curriculum. A paradigmatic approach requires the identification of episodes of crisis, the identification and interpretation of the representative unique artefacts, and the synergising of the paradigm by which additional artefacts can be critically assessed.

## 'n Paradigmatiese onderrig van argitektuurgeskiedenis

In hierdie essay word 'n benadering, hier die paradigmatische benadering genoem, tot die onderrig van argitektuurgeskiedenis aangebied. Dit is ontleen aan Kuhn se 'paradigma'-begrip en die daaruitvoortspruitende stratifisering van Westerse kronologie in paradigmatische episodes. 'n Paradigma word gedefinieer as 'n gedeelde tydgebonde intellektuele model wat die gewone werksaamhede van die gemeenskap rig en beperk, maar wat ook aanpasbaar is en dus na tye van verskuiwing of omwenteling kan verander. Daar word voorgestel dat die hiërargiese interpretasie van die artefak – pre-ikonografies, ikonografies, en ikonologies – die 'wêreld' van die fisiese (Wêreld 1) en die objektiewe (Wêreld 3) toeganklik maak vir die student wat daardeur die kulturele verlede herskep. Dit stel die student in staat om sy kritiese en kreatiewe vermoëns (Wêreld 2) te ontwikkel. Die benadering word as toepaslik vir die aanbidding van geskiedenis binne die argitektuurkurrikulum geag. 'n Paradigmatiese benadering beteken die identifisering van krisisvoorvalle, die uitkenning en interpretasie van unieke artefakte, die sinergering van begrip tot verteenwoordigende paradigma wat 'n konteks vir die kritiese evaluering van verdere artefakte bied.

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The School of Architecture at the University of Pretoria forms part of the Faculty of Natural Sciences. The planning disciplines are to date the only disciplines within the faculty offering courses in history. The final course in Environmental History presented in the School of Architecture is for students of Architecture and Landscape Architecture. The course has been developed by Professor Dieter Holm and modelled on the metabletics of Van den Berg (1974). In attempting to formulate an intellectual frame of reference and to systematise the curriculum of the course reference has also been made to Kuhn (1970) as a historian of science and his formulation of paradigms has been adopted. Only now is a meta-level of understanding being articulated to make the School's approach accessible.

## 1. The interpretative hierarchy

It was a Dane, Christian Thomson (1788-1865), who, by the kind of creative accident that often leads to profound discovery, categorised the collection of artefacts in his charge in terms of materials employed, rather than utilitarian function (Boorstin 1983). This arrangement of artefacts led to an understanding of the archeological stratification of cultural evolution. Much as the stratification of fossil-bearing material indicates the place of the organism in the evolutionary chain, the cultural stratification of artefacts is indicative of their cultural status.

A hierarchy can be distinguished for determining and interpreting the temporal strata of cultures. The type and style of the artefact need to be ascertained and ascribed to place and time. A cognitive hierarchy of interpretation for investigating artworks as artefacts has been given by Panofsky (1967). Within the interpretative hierarchy each act of interpretation is directed at a specific aspect of the artefact and therefore accessed through its own system of analysis. The application of this interpretative hierarchy, while deriving particularly from the interpretation of Renaissance art, could be broadened to the full spectrum of artefacts throughout the disciplines. Hence the architectural historian, too, is ultimately obliged to interpret artefacts of particular concern, for example buildings, elements and plans, by means of iconology.

The hierarchy of expertise required brings us to the mind of the interpreter. It is here that Popper & Eccles' (1981) model for the interrelationship of mind and artefact proves of interest. They propose a 'Three World model' (figure 1): World 1 is the world of 'natural' objects and is cumulative since artefacts also become part of World 1. It is the world of all that which 'is', even the products of 'natural' or 'biological' man. It could

be considered as the world of ‘meme’ carriers in terms of Dawkins’ (1976) concept of ‘meme’ as the smallest transferable cultural schema. In this world may be found the objects of pre-iconographic analysis, that is the descriptive interpretation of natural material and artefacts.

Figure 1. Popper's three worlds (Popper & Eccles 1981: 359)

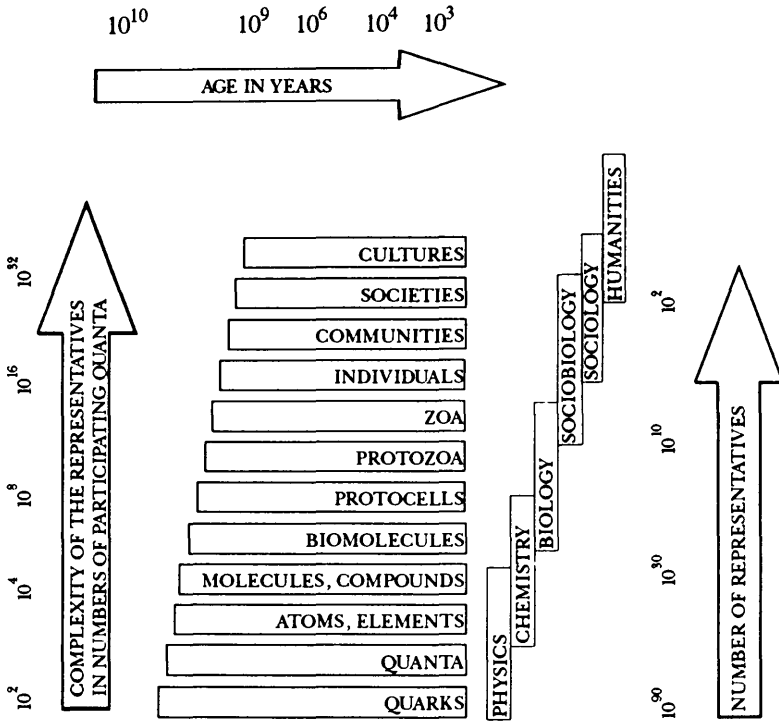
WORLD 1	WORLD 2	WORLD 3
Physical objects and states	States of consciousness	Knowledge in objective sense
1. Inorganic Matter and energy of cosmos	Subjective knowledge	Cultural heritage coded on material substrates
2. Biology Structure and actions of all living beings human brains	Experience of perception thinking	philosophical theological scientific
3. Artefacts Material substrates of human creativity tools machines books artworks music	emotions dispositional intentions memories dreams creative imagination	historical literary artistic technological Theoretical systems scientific problems critical argument

If we use Riedl’s (1984) hierarchy (figure 2) we depend on the natural sciences, namely physics, chemistry and biology to analyse and categorise the materials discovered by archaeologists, palaeo-anthropologists, anthropologists and others in similar disciplines.

World 3 is the objective realm of abstract ideas, the world brought about by the cultural activity of man. It is entirely the product of the cultural stratum in Riedl’s hierarchy and exclusively the preserve of man. It could be called the meme pool. It is also cumulative since culture is in a dynamic state of growth and change. This realm is the concern of iconographic interpretation since it requires the discernment of abstract ideas that are preserved, for instance, in writing, ideograms, allegorical representations, and art objects. The expertise brought to bear on this realm derives from the disciplines of the humanities, that is psychology,

sociology and cultural science, as shown in Riedl's hierarchy.

Figure 2. The stratified structure of the real world (after Riedl 1984: 182)



World 2 is the inner realm of mental being and is the preserve of the individual. It is unique and transient and is directly associated with the life, experience and existence of the individual. The historian, as an individual, brings his personal expertise derived from the wealth of his experience, to the interpretation of artefacts and from them discerns meaning. This task of iconological interpretation is speculative, focusing on the symbolic content accessed through a familiarity and empathy with the nature of the human mind that produced the artefact. World 2 could be considered as the world of memetic encoding. Iconological study is ultimately a creative act. It might therefore prove useful to examine briefly the relationship of the creative mind to its culture.



Speaking of the artist in his community, Neumann (1974: 88-9) states that:

We have learned [... that] the consciousness of the individual [is] the high voice in a polyphony whose lower voice, the collective unconscious, does not merely accompany but actually determines the theme [...] We see the group as an integral psychic field, in which the reality of the individual is embedded, so that he is organ and instrument of the collective.

However, only the historian – and he, too, is limited by his personal equation and his ties with his epoch – can evaluate the authentic historical significance of a group, a movement, or an individual.

We discover from Neumann two important relationships, namely that of the creative individual to his time and also that of the historian in determining the significance of that relationship.

From the intersection of Panofsky's processes of analysis of the artefact with Eccles' and Popper's "Worlds", the following relationships can be established. The mind of the historian (World 2) engages the artefact (World 1) and, through an identification process (World 2), discerns the iconography (World 3) of the artefact (World 1). Through interpretation meaning derives (World 2) in order to produce from known material (World 1) an iconology (World 3) which, if recorded, becomes an additional artefact (World 1).

World 1 is, thus, the repository of artefacts produced by the culturally active, including the writings of historians. This demonstrates the interactivity of the historian and the evolving cultural complexity of his world.

The above exposition leads to the conjecture that historians, as interpreters, decoders and interpreters of artefacts, function recursively by providing feedback to the cultural pool. They are among those who re-interpret and re-incorporate into current culture. The historical discipline, so viewed, is dynamic and systemically active in the socio-cultural realm. The historian, rather than being an objective bystander, is an active participant in the cultural system. Through history, present culture extends back to the dimmest past of an emergent human intellect. Culture, as a complex system, is thereby freed from the immediate present and from the limitation of requiring direct experience of events. It is through the artefact and interpretation that culture is disseminated and through the persistence of the artefact that culture displays temporal depth and continuity.

The distinction between the record clerk and the historian lies in the difference between the acts of cataloguing and interpreting. The interpretative role of the historian within a cultural system, far from being an academic nicety, becomes a necessity in the evolving complexity of the socio-cultural system. If culture can be seen as uppermost in the hierarchy



of systems of evolution, and the artefact as an agency of communication within the cultural system, then the ecological role of the artefact must also be admitted. Just as the atom, the molecule and the cell have systemic agents, the artefact should be acknowledged as an agent within the cultural system.

## 2. Hologrammic thought

The biological technique involved in equipping the individual for encountering the world lies in stereoscopic vision and stereophonic sound. Perception depends on the brain's integration of the physically distanced reception of stimuli, or stereo-aesthesia. It would appear that man is programmed to require memory for recognition and disparity for discovery. This disparity is further extended through the lateralisation of brain function, the left brain being analytical and serial by nature, the right analogical and integrative. This distinction allows for diversity in the way we apprehend and 'know' our world. These different 'knowings' are termed "multiple versions" of the world by Bateson (1980). One can use the analogy of the hologram, where two sources of the same light have to be out of phase to reveal the image. The brain would seem to require a certain disparity of understanding to construct a meaningful whole. Such an integrated 'wholeness' of understanding is here termed 'hologrammic' thought. When Lewis Carroll (1966) (alias the Victorian mathematician Charles Dodgson) asserted that the proof is only complete when stated thrice in the case of the Jubjub, he provided us with a useful illustration of the three ways of knowing:

Tis the voice of the Jubjub  
Tis the note of the Jubjub  
Tis the song of the Jubjub. The proof is complete [...]

'Voice' is a sensory recognition, 'note' an analytical recognition, and 'song' the totality of possible knowledge. Thus, when saying "Oh yes, I see" and "Oh yes, I know", the student is reflecting these types of knowledge. "Oh yes, I understand" reflects the attainment of hologrammic knowledge.

A discipline like architecture has the advantage of offering the student just such hologrammic insight. The discipline requires strong analytical and analogical skills. Through examining the architectural artefact the student can discover both the techniques employed and the visionary response of the author. He can thus 'know', 'see' and 'understand'.

The same holds true for the history of the discipline.

Facts in themselves are at the level of 'knowing' and occupy Panofsky's pre-iconographic stratum. Gestalt recognition of the imagery of the

artefact requires exposure to a range of representative examples. Only then is iconographic interpretation possible. The integration of factual and gestalt cognition is required to achieve understanding and thus derive the meaning of iconological interpretation.

In teaching the history of a discipline, in this case that of architecture, the ultimate objective is the familiarisation of the student with the field to the point where independent critical faculties and a fully liberated creative capacity are developed. This is at the highest level of Panofsky's hierarchy of interpretation, the iconology of the artefact. The student should not only be able to interpret iconologically but also to give iconological significance to the designs.

The human being matures more quickly today than before. This is a puzzling if one thinks of puberty as the onset of fertility. In our overcrowded globe fertility at a younger age can surely not be a requisite. Yet puberty does not only foreshadow reproductive readiness but also signals the onset of adult intelligence. Biological evolution 'fast-forwards' the biological clock through a technique which the nineteenth-century German biologist, Ernst Haeckel (1866), termed "recapitulation".

He illustrated a process of somatic 'recall' where the developing foetus in the embryonic stage 'recapitulates' the states of its evolutionary ancestry. Thus at various phases the human embryo will resemble fish, reptile and primate before becoming recognisably human. But why should this pattern be restricted to the biological realm and to somatic development?

It is feasible that this recapitulation of more primitive evolutionary cultural states occurs through the long childhood that is man's. The early onset of adult intelligence readies the individual for the wealth of cultural information to which he or she is heir. Yet if the individual is to claim that inheritance it must be made available in comprehensible form. It behoves the educationalist to consider in what manner our cultural past may be made accessible.

If cultural recapitulation is possible, the teaching of history becomes important to the cultural development of the individual in that it allows him to recapitulate synoptically the various phases of his cultural past, and specifically the ideas current within each epoch of that past. These ideas should then become part of his 'mental toolkit'. The paradigmatic understanding of history provides a suitable technique for making cultural wealth available.

### 3. Teaching through paradigms

Kuhn (1970) applies the term “paradigm” to the intellectual milieu wherein ideas have viability. His original writings have been criticised for the equivocal usage of the term paradigm (Shapere 1964 : 383-94; Buchdahl 1965 : 55-9; Masterman in Lakatos & Musgrave 1970: 59-89). His 1970 postscript to the 1962 original writings has given a sense of the term which Gregory (1984: 561-2) parallels with James’ (1907) “philosophic atmosphere” and Whitehead’s (1985) “circumambient atmosphere”. The following is a summary (Fisher 1989a: 49-50) of a sense of the term derived from the above readings:

- 1 A paradigm is implicit and shared and directs the common endeavours of a community in its encountering of the phenomenological world at a particular time.
- 2 a paradigm is a property of man’s abstract world. Its prescripts are tacit and unformulated but direct the intellectual modelling of the community. It however exists beyond the metalevel of cognition and cannot therefore be articulated by the community. It is an endlessly regressive set of schemata that cannot be determined at will.
- 3 The paradigm, as a shared intellectual model, directs and limits the normal activities of the community. It is however important that it is in a state of dynamic equilibrium in order that the paradigm may adapt to altered circumstances of the community.
- 4 The paradigm will be exclusive of certain unshared schemata. If enough of these become shared a period of crisis will prevail.
- 5 A paradigm changes after a period of crisis and gives rise to a new paradigm which might be partly or wholly inclusive or exclusive of the previous paradigm.

A paradigm refers to the common, tacit (or unarticulated) premises that derive from the shared phenomenological experiences of a community. It manifests itself in the metaphors by which a community describes its world. As an abstraction it serves both the intellect and the imagination. Hence not only sciences but also arts reflect the prevailing paradigm (Fisher 1993: 31-4) and the styles are not equivalent and parallel, as suggested by Laszlo (1973: 227-9).

The cultural history of the West can be presented as a sequence of paradigmatic episodes. Rapoport (1969: 75) has offered three ‘attitudes’ of Western man to his environment, here termed paradigms. These could be expanded to five, one preceding and one terminating his list.

Paradigm 1 is termed the sympathetic paradigm (Fisher 1992: 87), analogous to the harmonic resonance of vibrations in proximate bodies of



sympathetic frequency. This is the animist world where intercession is through shamans who commune with the spirits, appeasing the good and warding off the evil. The metaphors are of trees and forests; the myths are of Eden. In cultural evolution this is the paradigm of both prehistoric and primitive man.

Paradigm 2 is termed the 'cosmic paradigm' after Rapoport's (1969: 75) "religious and cosmological" attitude. Here the heavens are seen as worlds apart, the heavenly bodies as gods. This was the paradigm of the Ancients, the civilisations of Early Egypt and the Fertile Crescent.

Paradigm 3 is termed the 'symbiotic paradigm' (Rapoport 1969: 75): "Here man and nature are in a state of balance and man regards himself as responsible to God for nature and the earth and as a steward and custodian of nature." This is the paradigm of any monotheist theocracy, specifically that of the European Middle Ages.

Paradigm 4 is the 'mechanistic paradigm', termed "exploitative" by Rapoport (1969: 75): "Man is the completer and modifier of nature, then creator, and finally destroyer of the environment". This is the paradigm of modern man, whose metaphors derive from the working and functioning of machines. The functioning of nature can be rationally understood and modified through reason. It is the paradigm that persists today.

Paradigm 5 is the emergent paradigm, here termed the 'ecosystemic paradigm'. Central to this paradigm is the concept of systems:

The systems concept proves applicable to the description of those phenomena in living systems which defy description purely in terms of micro-mechanical cause-effect chain reaction; it thus lends substance to the principle of systemic organisation.

Applying the systems concept, an organism as a system reveals itself as encompassing and operating through the agency of sub-systems, each of which, in turn, contains and operates through groups of systems of still lower order, and so on down through molecules into the atomic and sub-atomic range.

The fact that the top level operations of the organism thus are neither structurally nor functionally referable to direct liaison with the processes on the molecular level in a steady continuous gradation, but are relayed step-wise from higher levels [... to] lower levels of again more rigorously ascertainable determinacy, constitutes the principle of hierarchical organisation (Weiss 1969: 33).

Rather than thinking of 'hierarchy' when referring to systems, the idea of 'nesting' seems more useful. 'Hierarchy', literally the ordering of priestly power, still connotes a devolution of pyramidal power whereas systems, being interactive, have both ascendant and descendant influence, much like Russian dolls or Chinese boxes. The term 'nesting' is preferred to emphasise this characteristic of systems.

Our time has taken the postmodern turn. The term 'postmodern' has

been appropriated throughout the disciplines, and is associated not with a stylistic movement, but with a discomfort with the underlying premises of Western thought. It is seen as denoting “an archaeological shift in the presuppositions of our thinking” (Palmer 1977: 21), as a “condition” which has “altered the ground rules for science, literature and arts” (Lyotard 1981: xxiii). “Postmodern science is one in which practical and theoretical issues, contemplation and action can no longer be separated” (Toulmin 1982: 264). We stand in a critical relationship to the modern, whose tacit tenets, to be critically assessed, have to be made manifest.

Informed people in the second half of the twentieth century are inundated by an ever-increasing flow of information: fragmented bits and pieces of an eternally changing puzzle that we venture to solve in order to gain fleeting glimpses of new realities. We are aware of a profusion of alternative modes of thinking, as no other people or civilisation has ever been [...] Our art, our science, and our world view are all eclectic. Our concepts and ideas are littered with parts and pieces – some well petrified, some warm, and some still quivering – from other civilisations, past and present (Dunning 1991: 213).

It is possible that, just as the mind of the individual constantly exposed to new environments and new challenges is always in a state of innovative alertness, complex societies make these individual traits part of the cultural character, the *esprit de système* or spirit of the system. This presupposes that human society interacts as a single super-system with ideas being traded on a global scale – Teilhard de Chardin’s (1967) “noosphere” stripped of its mysticism. Within this system many systems of sub-cultures will exist. Jantsch (1980: 256) puts it in this way:

A pluralism emerges in which many dynamic structures penetrate each other at the same level. In such a pluralism, there is no longer the familiar evolution in big step functions. Change, increasing in absolute measure, occurs [...] horizontally, in a multitude of simultaneous processes, [...] The reality of the human world becomes dissolved into many realities, its evolution into a multitude of horizontally linked evolutions. One may think of the evolution of a pluralistic ecosystem [...]

We are speaking here, thus, of an ecosystem of paradigms.

What were once tacit directives of the prevailing paradigms of the various historical episodes can be articulated and disseminated. This requires the selection of ‘meaningful’ historical events, ‘synchronic’ manifestations of ideas across a broad spectrum of disciplines, the identification of ‘significant’ artefactual material and the development of a ‘deep’ vocabulary. To present a cultural recapitulation the material employed must be synoptic and representative. There is no room in such an approach for the trivial or the encyclopaedic.

The paradigmatic methodology should not only help maturing indi-

viduals gain access to the culture to which they are heirs but also alert them to cultures which never were their own. Similarly the culturally impoverished (the greater portion of the video-generation) and the culturally disadvantaged (the greater portion of the adolescent Third World and the ghetto population) may be given access to a cultural realm to which they are not directly heirs. This would assume a commonality at the biological level allowing individuals outside of the cultural stream of which they are to be part to 'recapitulate' individually the cultural inheritance of their species. Hence cultural evolution may be accelerated within the individual's own mind through exposure to significant artefacts.

A paradigmatic approach to architectural history aims at recovering ideas. Through the examination and encountering of contemporaneous artefacts and written materials, the common ideas should become discernible.

Material for investigation must be readily available. The approach thus proceeds from the works of archaeologists, anthropologists and historiographers. Through modern communication technologies their discoveries can be readily accessed.

The problem of the suitability of material arises. The enterprises of the archaeologist, anthropologist and historiographer have delivered a wealth of facts and artefacts. It is assumed that, through understanding what is being challenged in a period of paradigm crisis, shift or change, one will have insight into the prevailing paradigm of the preceding era. Hence selected artefacts should represent such episodes.

The sufficient minimum of material covering the broadest number of disciplines should be used to illustrate a commonality of ideas. The minimum material will comprise unique artefacts which

- show change – in style, form, or utilisation;
- are not predicted by preceding artefacts
- provoked a shocked reaction
- were cathartic
- were seminal
- were polemical
- are persistently cited.

In ascertaining the ideas common to disparate disciplines one can recreate the common ideas which informed the making of the artefacts and thereby gain understanding of and ascribe meaning to the period. This attempt to isolate the paradigms of a particular era from a limited range of material can be termed the 'synergy' of the paradigmatic approach. It is assumed that, through synergy, we may achieve a synthesis of



ideas richer than those generated by the examination of each piece of evidence in isolation.

The generation of patterns of cognition through synergy should enable us to do the following:

- Reconstruct the intellectual milieu of the period wherein the artefact was produced
- Recognise and relegate (by inclusion and exclusion) additional material to its relevant historical period
- Interpret additional material and ascribe and derive meaning
- Make available thoughts and ideas from the past through reconstruction
- Recognise the existence of thought patterns different from our own.

A paradigmatic approach to history therefore involves the stratification of intellectual time into paradigmatic episodes with periods of crisis and change at the temporal interfaces. Rather than examining the continuities chronologically one regards the discontinuities at the interfaces. The linking patterns of thought in contemporaneous but disparate disciplines are established and the synchronous manifestation of such ideas is sought out. The artefact is not only studied in terms of its utilitarian function, but also interpreted to establish the idea encoded in its form and style.

#### 4. Liberty through history

We have come to the end of history. We have conquered historical time by mastering techniques for investigating that time. Yet the study of history is now more important than ever before. What we must know of history, however, is not only the facts and the details. Understanding ourselves requires an understanding of our historical selves and of those forces and ideas which have moulded our contemporary understanding.

If the past is accessed in the synoptic fashion suggested here then the intellectual realm to which individuals are heir becomes rightfully their own. Once the *esprit de système* of each paradigmatic episode is encountered then it is retained in the fabric of the mind and becomes part of the individual's intellect. Through history the realm of ideas and their contexts is discovered by encountering the significant artefacts and the relevant metaphors and symbols. The individual thereby experiences a recapitulation of intellectual evolution. Thus the paradigm revolutions of the past will be the mind revolutions of the person.

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SHAPER D

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1. Manuscripts may be submitted in Afrikaans or English. The desired length of articles is 7 000 words, while 4 500 words is regarded as the minimum and 11 000 as the maximum.

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Snyman AL

1986. Human rights in political reform. Van Rensburg (ed) 1986: 1-34.

Van Rensburg CD (ed)

1986. *Human rights in South Africa*. 2nd ed. Pretoria: HAUM.

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*Instruksies in Afrikaans in die volgende nommer*



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