THE UNIVERSITY OF HULL

THE ARCHITECTURE AND ACUITY OF CRITICAL SYSTEMS THINKING

being a Thesis submitted for the Degree of PhD

in the University of Hull

by

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October 1992

ABSTRACT

This thesis looks at two critical urges in Critical Systems Thinking that both complement and critique each other. Firstly, there is an urge to construct in a critical manner. Secondly, there is an urge to be critical about such constructions. They complement and critique each other in the manner in which the second urge requires the first urge in order to understand what it means when one begins to create by construction, and also in which the first urge requires the second in order to understand the privileged position that construction is given in epistemology. These two urges give two stages.

Construction relates to four clear conditions that develop from an Architectural study. This study offers two definitions of Architecture : structural longevity and relational modification. Consequently, a Structure and Process are established (first two stages) which together content an Architecture of Critical Systems Thinking (third stage). This Architecture is then applied to Systems Thinking through a study of five Systems Thinkers, this application offers an Architecture as commensurability (fourth stage). The Architecture is thereby offered as author.

De-construction relates to four clear conditions that develop from the Architecture of Critical Systems Thinking. Each condition questions the Architectural authority to construct. The Process (reversed to complement and critique) questions the Structural consistency of the Architecture (first). A Structure of Acuity develops that maintains meaning where the Architecture neutralised meaning (second). A Contentless Acuity follows (third), thereby allowing the contentlessness of paradigm (in)commensurability to be discussed as an application of the Acuity of Critical Systems Thinking. The Acuity is thereby offered as reader.

To balance these two urges is to read with authority.

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ACKNOWLEDGEMENTS

I would wish to begin in thanking Professor Flood for firstly introducing me to Critical Systems Thinking, and then by continually supervising and motivating me through some difficult but highly rewarding periods. I also owe much to the friendship and intellectual stimulation of Michael Charlton and Gerald Midgley who have consistently tolerated the many theoretical obscurities that I have unfairly plagued them with. On a more general note thanks are also due to the my fellow research students, the academic staff and Undergraduate students that I have had the pleasure to meet during my three years of study at the Department of Management Systems and Sciences at the University of Hull. Three years that would not have been possible without the research funding of the Science and Engineering Research Council, this has been very much appreciated.

On a more personal note, my greatest debt lies with my family. The love and support that my Parents and Grandparent have shown has never been weakened or doubted. I would wish to finish these acknowledgements by realising how fortunate I am to have met Ms Delphine Psaume.

PREFACE

There are two urges in Critical Systems Thinking. Firstly an urge to construct in a critical manner. Secondly an urge to be critical about such constructions. The second urge requiring the first urge in order to understand what it means when one begins to construct. And the first urge requiring the second in order to realise the manner in which construction is given a privileged position in epistemology.

The first urge privileges construction, requiring an acceptance that we must promote a critical distance between the constructor and that which is constructed. This critical distance becomes the over-riding defining feature of 'critical' in this instance. Such a definition allows constructors to construct. Such a distance becomes 'critically acceptable' once we witness that the construction is not a direct reflection of the constructor's wishes. Such a construction becomes 'enlightening' when we begin to uncover the reasons for construction simultaneously with the uncovering of the power relations that support such constructions. This critical outlook follows on from Adorno's (1973) realisation of the paradoxical features of reason, at once seeking validity and power: to realise this is to realise the *Negative Dialectic*. This first urge realises the negative dialectic, a realisation that is pursued throughout Habermas's work:

> "Now reason itself is suspected of the baneful confusion of power and validity claims, but still with the intent of enlightening." (1987, p.119)

We posit therefore, that critical distance is the requirement for the privileging status of the construction resulting from the first urge in Critical Systems Thinking. The distance is an ideological distance, where one ideology seeks to be critical of another ideology in the interests of constructing an ideology that distances power from validity. The critical acceptability of such a construction relies upon a sufficient differentiation between 'that which is valid' and 'that which is powerful'. Critical acceptability, in this guise, differentiates the "... inadmissible *mixture of power and validity* ..." (Habermas, 1987, p.116). It is the task of this first urge in Critical Systems Thinking that critical constructors explore the possibilities of such admissible differentiations of power and validity. One such possibility will be pursued in the first stage of this thesis, this possibility is the *Architecture of Critical Systems Thinking*.

The Architecture is constructed in two chapters, contented in a third, and applied in a fourth. Prior to construction, however, there exists a need to introduce the notion of 'Architecture' to the Critical Systems community. This first chapter comes before the four chapters that deal directly with the claims of the Architecture. We introduce Architecture from six definitions of the word that can be found in any detailed and current edition of the Oxford English Dictionary. These six definitions are: Art/Science; Action/Process; Structure; Style/Ornamentation; General Construction; and Computing (networks). From this we use Structure and General Construction as a 'physical support' for the four remaining defini-

tions. This physical support exists firstly as an 'everyday understanding' of the word Architecture, and secondly as a means to organise the four remaining definitions. Proponents from each of the four definitions are related via the physical support, a debate ensues and an initial understanding of the Architecture is offered. The physical support is 'that neutrality' which we must depend upon, as it offers a support upon which the complexity of the 'non-everyday' discourse regarding Architecture is dependent. This 'non-everyday' discourse proposes two initial understandings of Architecture. They are: structural longevity and relational modification.

The second chapter develops from the initial understanding of Architecture as structural longevity. It establishes a structural base for the Architecture of Critical Systems Thinking (henceforth ArCST). This structural base is offered as a means to understand Critical Systems Thinking. There are two structural sides to the ArCST: Main debates, and the Four epistemological levels. The Main debates are current arguments in Critical Systems Thinking, they exist as an effective response to current polemics. Where 'effective' means being responsive on a temporal and structural scale. There are three effective responses that demand our attention: Margins, Fiction, and Will. The Margins debate stands in opposition to the 'core', established, traditional, methods of thinking. The Fiction debate stands in opposition to those established discourses that refer to themselves as 'Fact'. And the Will debate centres on the motivation that establishes such 'core' and 'factual' discourses. The Main debates, therefore, begin by being responsive to critical change (Margins), continue by exemplifying such a critical change (Fiction), and finish with the guiding interests that may wish to halt such critical change (Will). The Four epistemological levels seek to organise

knowledge from the basis of intelligible opposition. They begin with Dialectical-Forms, continue with Cross-Dialectics, and Cross-Generics, and finish with Pluralism. Dialectical-Forms develop from Hegelian Dialectics and Platonic Forms, they look for an understandable tension between opposing epistemological positions. Cross-Dialectics, as the name suggests, build on from this understandable tension to orchestrate a 'crossing' of Dialectical-Forms. Three Dialectical-Forms are crossed in three dimensions, and a fourth temporal dimension allows debates to come alive between the Dialectical-Forms. Cross-Generics classify Cross-Dialectics into competing Generical-Forms, this preserves the status of the Dialectical-Forms and brings a new complexity to any debate. Pluralism exists as an organising attitude, where the three previous epistemological levels are organised to offer an ever-changing definition of 'pluralism'. The first structural side and the second structural side are now brought together to form the structural basis of the ArCST, this giving twelve cells (three multiplied by four). The notion of structural consistency is highlighted when Margins acts as an initiation alongside Dialectical-Forms, when Fiction exemplifies alongside the sophistication of Cross-Dialectics and the classification of Cross-Generics, and when Will evidences motivations alongside the organising capacity of Pluralism.

Chapter three develops from the initial understanding of Architecture as relational modification. Given the structural basis of the Architecture, the relations *within* the Architecture modify as more relationships are established. Two flows of relationships are seen as important here: vertical and horizontal flows. The vertical flow begins in the Dialectical-Forms and ends in Pluralism. It has three contexts in the three main debates: Marginal vertical flows; Fictional

vertical flows; and Willed vertical flows. The relationship between the Dialectical-Forms and Cross-Dialectics, for example, modifies as it changes from a marginal context to a fictional context. The horizontal flow begins in Margins and ends in Will. This flow operates to understand the vertical flow. It has four contexts that promote this operation: Dialectically-Formed horizontal flows; Cross-Dialectical horizontal flows; Cross-Generical horizontal flows; and Pluralistic horizontal flows. Each flow obtains some understanding of the vertical flow in each context, for example, the Cross-Dialectical horizontal flow compares the relational modification of the three Main debates as they influence the interests of Cross-Dialectics. When these two flows come together (in the way that the two structural sides come together in the second chapter) they form the over-riding logic of the chapter: the demand for continued understanding. Where continued understanding is the detailed understanding of the vertical flow plus an understanding of this flow as given in the horizontal flow. Continued understanding operates within the Architecture and is the semantic to the syntactic chapter two.

Chapter four is a combination of chapters two and three. Using the structural consistency of chapter two and the continued understanding of chapter three we realise the contented ArCST. The ArCST is not, however, fully contented. We realise that when we constructed twelve cells in chapter two we would be unable to content all of the cells because of the demand for continued understanding required in chapter three. This demand means that two categories of cells are created: contented cells, and satellite cells. Contented cells balance vertical with horizontal flows, and thus respond to the demand for continued understanding. Satellite cells are unable to balance vertical and horizontal flows (the vertical

over-powering the horizontal), and thus are unable to respond to the demand for continued understanding. Despite this, the satellite cells possess a positive aspect. This positive aspect is the establishment of an Architecture of Autocritique. As the satellite cells critique the contented cells a sense of Autocritique is established. All of the cells are considered, and their relationship to the Architecture of Autocritique is highlighted. This fourth chapter, therefore, establishes the potential of the ArCST in its portrayal of the many debates entered into.

Chapter five uses the potential of the ArCST in an application directed at contemporary Systems Thinkers. Five Systems Thinkers are considered: Beer, Checkland, Flood, Flood and Jackson, and Jackson. The extensive treatment of their work (centred on their main texts) requires four movements to be created. Chapter 5.1 offers an initial understanding of each Systems Thinker in asking three questions to the five Thinkers: what are "the" main themes in their work?; what words or phrases do they prefer to use and why?; and what is their main definition of 'System'? Chapter 5.2 builds upon this initial understanding in recording the incidence of the three main debates in the Systems Thinker's work. Asking, how does each Thinker respond to the polemic of Margins, Fiction, and Will? Chapter 5.3 is the second structural side to chapter 5.2's first structural side, as chapter 5.3 asks how does the Systems Thinker employ the Architecture through the four epistemological levels. Chapter 5.4 employs the three previous movements (5.1 to 5.3) to offer an enriched understanding of each Systems Thinker. Rich enough to offer the possibility for commensurability across the different perspectives of the five Systems Thinkers. This offer of commensurability is seen as an output of the application of the ArCST in this fifth chapter. This overall positive finish to the first stage of the thesis prepares the reader for

the potential critical outlook that the second stage will provide. Where in the first stage we appear positive in our constructive feats, we now prepare to see the whole project undermined by a devastating critique.

The first stage evidences an Architecture in four moments: Structure, Process, Content, and Systems Thinking Development. The Acuity maintains these four moments, but the arrangement differs. Where the Architecture promotes construction, the Acuity promotes de-construction. The Acuity, in considering the second urge in Critical Systems Thinking, seeks to be critical of the Architecture in its Structural capacity, the first urge in Critical Systems Thinking. Construction promotes structure, de-construction promotes process (upon structure). Accordingly, the Acuity's four chapters begin with Process, follow with Structure (the proceeding of the structure), then Content, and end in Systems Thinking Development.

Chapter eight re-traces the Architecture in placing process before structure. As chapter eight proceeds through the Architecture four clear stages can be recognised: an extraction of the content of the ArCST; a loss of connection between the two structural sides (and here the structural consistency is inevitably questioned); a loss of connection between the three main debates (and here continued understanding inevitably becomes an issue); and the recognition of two clouds ('desire to construct' and 'desire to compare'). The deconstruction of the Architecture sees two presences that are sustained unquestioningly: intelligibility and oppositional thinking. These two presences rely upon recognisability and the overlooking of potential logical inconsistencies, in short, the Architecture becomes a target for deconstruction in its 'ability' to evade

inconsistencies through repetition. Here the Architectural unity of form and meaning is questioned, highlighted by the four stresses upon conceptual homogeneity. A conceptual homogeneity that preserves the 'Architecture as self'. The Acuity as deconstructed clouds is brought alongside the constructed Architecture and where the meaning of the clouds create form, the meaning is lost within the Architectural form. In the Acuity's search for meaning we achieve three Foucaulvian necessary contingencies: the Unthought, the Other, and Transgression. Each contingency limits the form that knowledge can take. To further study such processural contingencies we consider intertextual knowledge, where all texts are reliant upon prior texts: prior texts limit the forms that contingent texts take. The cloud as lost origin is emphasised in that texts become absorbed by the act of signification, unable to respond to the signified. This inability refers to the Architectural reliance upon the structural dependency of the Dialectical-Forms. The Acuity responds with the process of *différance* where there is a proliferation of meaning within one form (the Architectural unity of form and meaning again being questioned).

Chapter nine sees structure as an opportunity to benefit from process, and to respond to this opportunity we need to look at the structural value of Interpretation, Representation, and Meaning. A Structure, and a Basic Structure, are proposed which both represent interpretations of the many meanings of the word 'is'. The Basic structure is a square-based pyramid, where the square base 'is' the existence of the (square) cells in the Architecture, and the point at the top of the pyramid is the Acuity of the Architecture that we are searching for in this chapter. The Structure of the Acuity raises the square base to a cube, and thereby enables a more sophisticated Acuity of the Architecture to be developed. To

understand such a structure we need to re-consider the relevance of the words interpretation, representation, and meaning. We stress the relativity of interpretation, the act of interpretation, and the importance of self-referentiality with regard to the Architecture. We recognise the inability to represent outside of language, a debate then ensues between representationalists and antirepresentationalists, and the Architectural imposition of structural consistency is seen as an attempt to supercede validity. A further debate between meaning and validity shows us that truth is continually re-produced by language, the Dialectical-Form is seen as maintaining the empty sameness of the transcendental subject, and the non-dialectical nature of the Acuity finishes this chapter.

Chapter ten looks for content and finds contentlessness, as the problematics of self-referentiality preclude any acceptability of a scheme that demands content. Content, accordingly, must not be seen as a singular force, but as a consequence of less precise forces. We must, therefore, treat content as a movement, as a trope (re-affirming the processural nature of the Acuity). Two tropes are considered to be most important to the establishment of an Acuity of Critical Systems Thinking (henceforth, AcCST): Metaphor, and Irony. Metaphor replaces one word for another, and this chapter proceeds in replacing the philosophical downgrading of metaphor with the philosophical requirement of metaphor. Philosophy downgrades metaphor in its authoritarian attempt to transcend the figurative to reach the literal truth: authoritarian 'common sense' attempting to be non-representational, undramatic and atemporal. Such attempts are seen as futile, as no complete opposition is possible between the proper and the metaphoric, because the metaphoric has no meaning in current language, and what has no meaning cannot have an opposing meaning. Irony is more complex than

metaphor in that it is a mode of speech as compared to a replacement of words. Irony offers meaning contrary to the words employed in any statement. We enter into an 'Ironology' showing the details that Irony can offer in Critical Systems Thinking and we finish the chapter with a recognition of the importance of self-creation as a linguistic capacity.

Chapter eleven develops Systems Thinking in its treatment of the current debates concerning paradigm (in)commensurability (the parenthesised 'in' showing the reader that both commensurability and incommensurability are possibilities). We begin by offering four interpretations of *will* and *representation*. Will is viewed as an ontological determinant of epistemological representation. Here the epistemological representation is paradigm (in)commensurability, and the will is that of the paradigmatic thinkers. Schopenhauer and Nietzsche are employed to introduce the notions of will and representation. Kuhn and Burrell and Morgan are evidenced as the most important paradigmatic thinkers. Consequently, will and representation is related to paradigmatic thinking. This relationship uncovers an incidence of dualistic strain within the paradigmatic thinking. Such dualistic strain is seen in opposition to a world of plurality, consequently, dualism is seen as restricting scientific progress, where dualism controls modern science's reliance upon extended things maintaining a passivity in order to accurately quantify. An Anti-dualism of scientific activity is promoted, and the dualism of paradigmatic (in)commensurability is highlighted in the works of Kuhn and Burrell and Morgan. In order to understand the mechanisms that promote either paradigm commensurability or paradigm incommensurability, we need to look at the irony of paradigm (in)commensurability as a necessary stage prior to the appellation of commensurability or

incommensurability. To do this we look at an example from both persuasions. Consistent with the Acuity as critique of Architecture, we consider Irony and the Architecture as commensurability. Here we relate chapter nine to Appendix I giving a lower level call for commensurability and an inability to recognise the importance of the 'cloud of the Acuity as likeness'. Here commensurability becomes ironical. The case for incommensurability is taken up by Kuhn and Burrell and Morgan. Kuhn falls for dramatic irony, and Burrell and Morgan fall for an inability to see the existence of a Socratic negative aspect within the dialectical boundary between commensurability and incommensurability. Here incommensurability becomes ironical. The chapter finishes in promoting an irony of paradigm (in)commensurability that sees the worth of self-creation in re-appropriating our sense within the world, where self-creation is a response to the contingency of this world.

Overall, we can see that this thesis at once promotes construction and deconstruction, at once promoting the existence of two basic urges within Critical Systems Thinking: the urge to construct in a critical manner, and the urge to be critical about such constructions. The balance between these two urges rests as much with authorial intentions (an urge to construct) as it does with reading intentions (an urge to deconstruct). Therefore, as long as we write and read we will be caught within these two competing (not necessarily equal) urges. Their importance to Critical Systems Thinking cannot be over-emphasised.

CHAPTER ONE: INTRODUCTION TO STAGE ONE: THE ARCHITECTURE OF CST

INTRODUCTION

The first stage of this essay will construct an Architecture of CST. It is useful, therefore, first of all to consider what an Architecture is. The general and everyday understanding of Architecture emphasises structural longevity. We will briefly consider this concept. Structural longevity can be evidenced in the buildings, the factories and the general infrastructure of a town or a city. That is to say the physicality of a particular conurbation. This physicality pervades into a characterisation of the area of concern. A characterisation that resonates a feeling of permanence related to that town or city. It is this feeling of permanence that gives longevity its contextual meaning here. And the meaning related to structure is given by the physicality of the area. It is this concept of longevity, closely tied to this concept of structure, that gives meaning and character to an urbanisation. And it is this meaning that is commonly referred to as Architecture. This, however, is not the only understanding of Architecture. We must look for further interpretations, and through this offer a basis with which to develop an Architecture of CST.

1.1 THE SIX CELLS

The 1989 edition of the Oxford English Dictionary offers six different definitions of Architecture. These definitions offer an established basis for any discussion regarding the nature of Architecture, and will also help to elaborate upon the initial idea of structural longevity. The six definitions can be summarised as being:

(i) The art or science of building

(ii) The action or process of building

(iii) Structure

(iv) Style or ornamentation

(v) General construction

(vi) Computing

Together, these definitions by no means offer a monopoly of understanding, however, they represent an important summary of the range of definitions that can be expected to be read or heard in most discussions of architecture. It is

necessary, therefore, to include such a range within our Architecture of CST. The range begins with the very general considerations of classifications of art or science and ends with the precision of computing. Let us begin by briefly looking at each of the six definitions.

The Art or Science of building "... or constructing edifices of any kind for human use. Regarded in this wide application, architecture is divided into civil, ecclesiastical, naval, military, which all deal respectively with houses and other buildings (such as bridges) of ordinary utility, churches, ships, fortification. But architecture is sometimes regarded solely as fine art, and then has ... [a] narrower meaning."

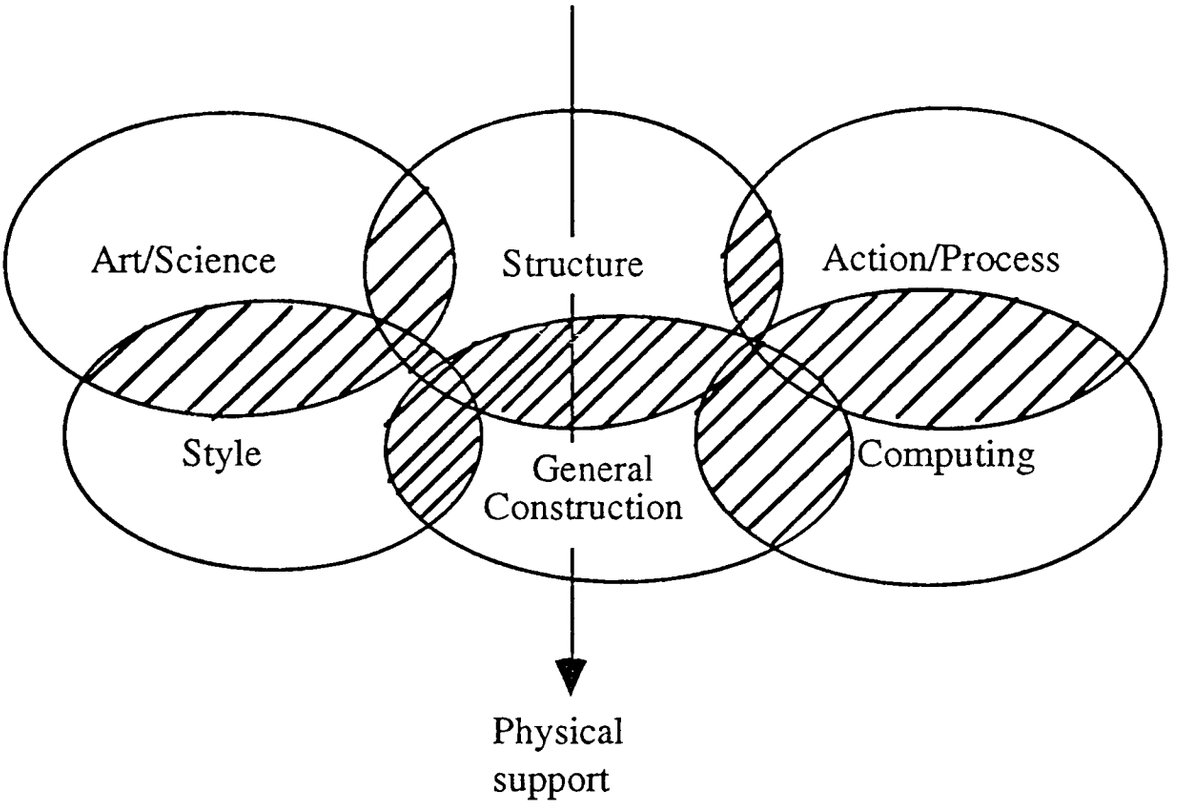
This definition as the Art or Science of building is the most general, and therefore the most extensive of the definitions offered. The second definition emphasises the activity of architecture, in its progressive re-building of our social environment. The third definition captures the completion of this process, in the structural considerations. The fourth definition concentrates upon the manner in which these structures are differentiated through style and ornamentation. General construction, the fifth definition, can be seen as a combination of the second and third definitions. And the sixth definition relates to a more recent understanding of architecture as computer networks.

Each of these six definitions offers a potentially fruitful dialogue in the construction of the Architecture of CST (henceforth, ArCST), however, limitations of space and time allow for only four of the six definitions to be exemplified. These four definitions being: Art/Science (1st); Action/Process (2nd);

Style/Ornamentation (4th); and Computing (6th). The omission of Structure (3rd) and General construction (5th) is explained by the orientation of the ArCST. Its orientation makes a distinct break from the more physical understandings of Architecture, as evidenced in these two definitions. Instead, the ArCST finds a more fruitful dialogue with the aesthetic, symbolic, and conceptual understandings, as evidenced in the four other definitions. It is such a departure from the limited physical understanding of Architecture that allows for a thorough development of an ArCST, and this departure will fill the succeeding paragraphs.

The departure begins in a six cell structuration of the original six definitions. Each cell represents an area of concern for each definition. The hatched lines represent the existence of a strong commonality between two cells. The structure of the six cells is founded upon the two physically orientated definitions which serve to physically support the relationships between the four other definitions. The two discarded definitions are seen in supporting roles for the four prominent definitions. It is important here to note that the physicality of this structure is essential in consideration of the non-physical dimensions (ie, aesthetic, symbolic, conceptual); that is to say, that the two discarded definitions cannot be wholly discarded. All that has been discarded is their participatory role within the ArCST discussion. Their role as physical supports (see Figure 1.1 below) has not been discarded, and remains essential for a competent understanding of the six cell structure. The physical support of the cells through the Structure and General Construction helps to maintain a structural consistency between the four discussed cells.

Figure 1.1 The Six Cell Structure



Each of the six cells (definitions) relates to at least two other cells. This is represented by the hatched lines. These commonalities help to shape an appreciation of the ArCST. Areas of commonality allow for each of the six cells to be seen in relation to each other. For example, the Architectural studies of Luning-Prak begin in the Art/Science cell but necessarily continue in the style cell. Luning-Prak therefore belongs to two cells, his observations concern social conditions (Art/Science cell) and creative aesthetics (Style cell). The commo-

nalities exist for two reasons: firstly as a means to compare different cells (and this method of comparison comes alive in the fourth chapter), and secondly as a textual companion (making the introduction of the ArCST more likely to be comprehensible to any reader versed in any of the cells). The commonalities, therefore, help to shape an appreciation of the ArCST. This appreciation is further helped with exemplification in each of the four prominent cells. What follows is a consideration of each cell through the work of current and historically prominent authors. The aim being to add substance to each of the cells, thereby offering substance to any definition of the ArCST.

Reading from left to bottom and right to bottom the order for the ensuing discussion of the six cell structure begins with the Art/Science cell, is followed by the Style cell, next comes the Action/Process cell, and finally the Computing cell. The commonalities exist in this order also, since the Art/Science cell shares a common interest of aesthetics with the Style cell. And the Action/Process cell shares an interest in 'well-functioning' with the Computing cell. The Art/Science and Style composite is considered before the Action/Process and Computing composite because the former composite possesses a more complex history and therefore a more complex array of authors. Protagonists within each cell are called to the attention of the reader, and with more protagonists more attention is called. Let us now begin with a consideration of the Art/Science cell.

1.2 ART/SCIENCE CELL

The majority of exemplifications are to be found in the Art/Science cell. Six relevant examples can be evidenced. These examples are given in the works of six Architectural theorists. They are: Perrault (1722); Prinsloo (1977); Scott (1980); Preziosi (1979); Norberg-Schulz (1971); Luning-Prak (1968).

The Art/Science cell is by far the most relevant, as it is the most general. In its generality it is able to tackle the major issues regarding an understanding of Architecture. The classification of questions in this cell rests upon a debate concerning the nature of Architecture itself: is Architecture an Art or a Science? This question appears, in its primary consideration as very banal, though it is a fundamental question that needs to be responded to. An Artistic orientation will emphasise the profundity of Architectural studies, while a Scientific orientation will emphasise the formalism of Architectural studies. And dependent upon this orientation the study itself will offer radically different accounts. An Artistic account needs to look beyond form(alism)s to inquire about the real nature of Architecture. A Scientific account considers the real nature to be discoverable as a form(alism) of Architecture:

> "It was not without reason the Ancients thought that the Rules of these Proportions, which make the Beauty of Buildings, were taken from the Proportions of humane

Bodies." (Perrault, 1722, p.i)

The formalism in Perrault's case is that represented by the human body. In this overtly scientific work, Perrault considers the real nature of Architecture to be discoverable in the form(alism)s and proportions of the human body. The Beauty of Architecture can be found in the Beauty of the human body. Perhaps the next quote emphasises Perrault's formalism to a greater extent:

> "... we ought to consider that the Reasons which should chiefly regulate the Beauty of Architecture, ought to be founded upon the Initiation of Nature, such as is the Correspondence of the parts of a column with its whole; like as there is between the entire body of a Man, and all its Parts." (Perrault, 1722, p.vii)

This formalism is evidenced in a revolutionary different way in the work of Prinsloo (1977). Where Perrault emphasises the formal correspondence between Architecture and the human body, Prinsloo emphasises the formal correspondence between Architecture and human development:

> "... the fragmentation of our cities into mutually exclusive functional zones; the decay and demolition of finely scaled, humane, suitably complex urban areas and the resultant fragmentation of human lives and communities ... constitute aspects of a reality which is actively maintained both by the

> modes of organization of essential institutions, and by the media as being inevitable but which is not inevitable, which does not serve human development, and thus constitutes a false reality." (Prinsloo, 1977, p.5)

Prinsloo's formalism is radically different from the formalism of Perrault. Perrault sees the imitative Beauty of Architecture as a sole formal constraint upon the Science of Architecture, and is happy to reflect upon Architecture within an apolitical Weltanschauung. Such a Weltanschauung 'constitutes a false reality' for Prinsloo. Prinsloo's overtly political understanding of Architecture seeks to evidence a structural relationship between the 'organisation of essential institutions' and 'false reality'. Prinsloo sees his Weltanschauung as constituting a 'critical architecture', able to transcend ideological limitations. Ideological limitations that are fostered within the organisation of essential institutions. It is the task of Prinsloo, and like minded architectural theorists, to engender a radical transformation of the interpretation of man in society. Today's interpretation of man is essentially mechanistic and, therefore, produces a

> "... dominance of utilitarian architecture [which] results largely from the impact of industrialisation and modernisation and on principles of organisation... " (Prinsloo, 1977, p.12)

Architecture for Prinsloo is currently a domination of 'place' around the dual notions of 'territory' and 'investment'. A utilitarian architecture that requires

separation in order to privatise place (and thereby creating territories), and consumerism in order to fixate place (and thereby demanding investment). Prinsloo sees this domination as a utilitarian teleological ideologue. It is teleological in its desire to see architecture as purely functional formalism (as operating on only one principle: that of functionalism). There must exist a one-dimensional relationship between the architecture's function and its form(alism). The one-dimensional aspect of this particular ideologue exists to dominate place around the two notions of territory and investment. This one-dimensional aspect seeks to compel any notion of environment to obey institutionalised knowledges. And this one-dimensional aspect allows only one definition of human development. Prinsloo's quest, therefore is to show the limitations of such a one-dimensional approach, and to advocate innovative architecture that inspires a continuous dialogue between principle and form. Such an emphasis upon human development is in tune with Scott's (1980) *Architecture of Humanism.* However, Scott's architectural study takes an oppositionary stance to the overt formalism of Prinsloo. Scott wishes to look beyond the form(alism)s of architecture in order to reveal the true nature of the architecture of humanism.

Scott begins by stating that:

> "...'well-building hath three conditions: Commodity, Firmness, and Delight'. From this phrase of an English humanist [Sir Henry Wotton] a theory of architecture might take its start."
>
> (Scott, 1980, p.1)

Commodity refers to architecture's ability to satisfy man's external needs (the uses of mankind, Eg. politics, religion, society). (Note here the similarity with Prinsloo's 'consumerism'). Firmness refers to the scientific dimension of architecture (Eg. mechanical bondage, physics, statics, dynamics, logical standards). Delight refers to architecture as a disinterested desire for beauty (Eg. Aesthetics). When these three dimensions of commodity, firmness, and delight combine, they form a complex theory of the architecture of humanism. It is clear throughout Scott's thesis, however, that the third dimension of 'delight' benefits from a higher level of complexity than the two other levels. The reason being, the need to accentuate the more humanistic dimension of disinterested study. Such an accentuation is evidenced in this following quote:

> "...the process of our felt enjoyment is the simplest thing we know ... The process of which we are at least conscious are precisely the most deep-seated and universal and continuous, as, for example, the process of breathing. And this habit of projecting the image of our functions upon the outside world, of reading the outside world in our terms, is certainly ancient, common and profound. It is, in fact, the natural way of perceiving and interpreting what we see." (Scott, 1980, p.217)

In this quote we can witness Scott's equation of disinterested simplicity with profundity. This, of course, demonstrates the profundity of humanism itself. The notion of being 'least conscious' relates to being disinterested. It follows that an interest in something demands a certain high level of consciousness. And

that the more simple the act is that we perform, the lower the required level of consciousness: simplicity relates to consciousness which in turn relates to disinterest. Scott continues in relating this triad (simplicity - consciousness - disinterest) to architecture (projection of image). And in this jump, Scott discovers an ability to relate humanism to architecture, since it is the unconscious simplicity of disinterested acts that enables the building of a complex and profound architecture. Scott finishes in stating that this entire process is the natural way, the singular, most natural way of perceiving architecture. This natural way relating quite clearly to the simplicity in the first instance. We can now summarise the above quote as comprising of five main moments:

(i) simplicity	{	triad of
(ii) consciousness	{	aesthetic behaviour
(iii) disinterest	{	(humanism)
(iv) architecture		(of humanism)
(v) nature		(the return to 'simplicity')

These five moments reveal the process by which Scott develops an 'Architecture of Humanism'. These moments also reveal how the process is continuous, through the natural return to simplicity from moment (v) to moment (i). Scott's desire to look beyond the formalisms of Architecture, in order to

reveal the true nature of the architecture of humanism, is clearly shown in this simple process. The triad of aesthetic behaviour indirectly attempts to replace these formalisms of architecture (Eg scientific algorithms) with the simplistic, unconscious, and disinterested human acts. This is Scott's 'Architecture of Humanism'.

Preziosi (1979) does not share Scott's views on humanism, or indeed its relationship with architecture. Preziosi postulates that the formalisms within architecture are of the utmost importance. Scott's triad of aesthetic behaviour becomes lost within the complexities of the built environment. In Preziosi's language, such a triad would represent itself in a speech-act, where the simplicity of the action becomes translated into the simplicity of the speech-act. And this level of simplicity must be contrasted to the complexity of the built environment.

> "In contrast to the unilinear temporality of speech-acts (which decay instantly), environmental constructs are four-dimensionally syntagmatic arrays, and manifest, moreover, a (relative) object-permanence."
> (Preziosi, 1979, p.17)

Scott emphasises simplicity manifesting itself as the most complex (ie. simplicity as natural simplicity, and therefore, complexity masquerading as simplicity). Preziosi emphasises object-permanence (or formalism) as the most complex (in its spatiotemporality). Between the two authors, therefore, we can see a stark contrast of an 'artistic' orientation (in Scott's work) and a 'scientific'

orientation (in Preziosi's work). In the context of this subsection on the Art/Science cell, we can see that Scott and Preziosi stand at opposite ends of the cell.

Perhaps the most oppositional idea within Preziosi's text is the manner in which he critisizes architectural authors, such as Scott, who rely upon two or three ideas which enables them to classify the whole of architecture (in Scott's case: Commodity, Firmness, Delight).

> "The study of the built environment through the offices of 'architectural history' has more often than not focussed upon only two or three of its functions - notably its contextually - referential or usage function, its aesthetic function, or its expressive function - and this way of dividing up the pie has been confounded with time - and culture-specific (and class-specific) notions of what buildings ought to do and how they ought to do it. The result has been a misconstrual of architectonic conation, expression, usage, territorality or plasticism, and metasystemic or allusory functions." (Preziosi, 1979, p.8)

In this quote we can see how Scott's 'Architectural Humanism' relates to the 'architectural history' that Preziosi refers to. Scott's humanism is made up of commodity, firmness, and delight. Commodity relates to 'usage'. Firmness relates to the 'referential'. Delight relates to the 'aesthetic'. According to Preziosi the way in which such 'pie divisions' are made is dependent upon the time, the

culture, and the class in which the author lives or lived. And the only way in which future authors can escape such dependencies is through a clear understanding of the relationships between architecture (Preziosi prefers the more scientific 'architectonic', which has two substantive (as well as four adjective) meanings: (a) the science of architecture, and (b) the science of the systematic arrangement of knowledge. This systematic nature is evidenced in the following quote, and is used to qualify the word 'architectonic':

> " That [science] which treats of those conditions of knowledge which lie in the nature, not of thought itself, but of that which we think about ... has been called ... Architectonic, in so far as it treats of the method of building up our observations into system. " (Sir W. Hamilton, 1838))

and language. In fact,

> "... the architectonic system ... is only rivalled by verbal language, with which it interacts in a complementary and mutually implicative manner. " (p.12).

It is rivalled in terms of a correlative complexity, in which both share similar levels of complexity but being only systematically correlative to each other (p.100). This type of complexity can be seen in the way in which authors such as Scott, and indeed Perrault, are dictated by linguistic codes when analysing

architectural situations. The customary ways in which authors describe architecture is reflected in the linguistic habits that shape their culture and time. Preziosi believes this to be so much the case when he states that

> "... architectonic and linguistic codes conceptually appropriate the world in its totality." (p.113).

Such a statement causes many problems for the authors previously considered in this section, for the main reason that they fail to consider the importance of such linguistic systems, however, the next two authors will develop and critique such a statement.

It is important to recognise here, that a continuing and constructive critique is gradually being developed. Where first of all the classicism of Perrault is introduced as the traditional approach to any discussion within architecture. Secondly, Prinsloo challenges this orthodox position with a radical-structuralist critique. Thirdly, Scott shows the limitations of the previous two positions when he offers an architecture of humanism. And fourthly, Preziosi shows the limitations of the previous three in his complementary implications of linguistics upon architecture. Having considered the way in which this Art/Science cell is beginning to take shape, we can now turn to two authors, notably Norberg-Schulz and Luning-Prak, for a continuation of this critical construction.

In Preziosi's work we can evidence a strong formalism. This formalism provides sufficient energy for this summarising quote:

"The architectonic and linguistic codes conceptually appropriate the world in its totality." (Preziosi, 1979, p.113).

Throughout his text the structural importance of architectonic and linguistic codes is emphasised and re-emphasised; emphasised to such an extent that these two factors are the representations of all conceptualisations. In Preziosi's line of contention, all architectural thinking, writing, expression is mutually implicative upon the linguistic systems that allow it such expression. This is a very powerful argument, and an impossible one to discredit, since all discussion about architecture must necessarily be presented within a compromised linguistic system (it is compromised because communication by definition is interdependent and, therefore, requires at least two compromising actors). However, there do exist ways in which such arguments can be discredited. We can focus on the general presentation of the work itself. Preziosi's work is overtly structuralist in orientation, and such an orientation allows for the opportunity of a non-structuralist critique. A non-structuralist critique is offered by Norberg-Schulz.

The work of Norberg-Schulz takes an existential view of architecture especially with regard to the many references made to Heidegger and Merleau-Ponty (in particular). It is useful here to consider his work in this light, as in this light we are able to contrast and critique it with the structuralism of Preziosi. Norberg-Schulz begins by recognising the work of authors such as Preziosi, and continues by showing the limitations of such an approach:

" The problem of architectural theory may be approached in many different ways. .... A semiological approach is at

> present followed by many scholars, based on French structuralism and the linguistic theories of Noam Chomsky ... [however,] architectural space may be understood as a concretization of environmental schemata or images, which form a necessary part of man's general orientation or 'being-in-the-world'." (Norberg-Schulz, 1971, p.7)

This quote signifies the movement from structuralism to existentialism. Here we can see Norberg-Schulz regarding 'environmental schemata' as an element of structuralism, and 'being-in-the-world' as an element of existentialism. It is clear that Norberg-Schulz considers structuralism to be a determinant of existentialism in that Piaget's 'schemata' (Piaget being a major representative of the structuralist tradition in France. Piaget's particular interest lies in Child Psychology, and his 'schemata' can be thought of as repeatable aspects of an action or an operation in a similar action or operation, where an infant's behaviour can be seen as the sum of his 'schemata'. (Gardner, 1974)) is seen as sub-ordinate to 'being-in-the-world' (an existentialist's starting point in the Heideggerian sense). We can, therefore, suggest that an analysis of Norberg-Schulz's work may offer an interesting counter-position to Preziosi's work, in that it develops from an explicit recognition of the limitations of structuralism and attempts to develop an 'existentialist theory of architecture'.

Norberg-Schulz follows Bruno Zevi in suggesting that architecture can be seen as the 'art of space'. To this extent, an understanding of architecture requires an understanding of space. A chronological analysis is given by ten main references from the ancient Egyptians to Piaget. From these ten references, five

space concepts are proposed: pragmatic; perceptual; existential; cognitive; and abstract. Each grows in abstraction as you move from the pragmatic to the abstract. Pragmatic space refers to the desire to integrate man with the natural 'organic' environment. The identity of a person gives their perceptual space. Existential space refers to the belonging to a social and cultural totality. The cognitive space shows an ability to think about space. And abstract space is the tool with which one is able to describe the others.

This understanding of space is then used to complement the main existentialist argument. For Heidegger, space cannot be divorced from man; and for Norberg-Schulz space can only be thought of as an abstracted phenomenon, space must necessarily be abstracted in order to describe the many ways in which man relates to space. And it is this complexity of relationships that forces high levels of abstraction. However, we must remember that man and space cannot be divorced, and that man must create abstractions in order to experience space. This abstracted experience of space receives its 'being' "...from places and not from 'the spaces' " (Heidegger, 1949, p.29). This is to say that the abstracted space is given meaning (in this understanding of 'being') by the place where it was and continues to be conceived. Heidegger calls this notion of conception 'dwelling'. To dwell is to enable the placing of a space. To dwell is to give meaning to abstractions:

> "Only when we are capable of dwelling can we build. Dwelling is the essential property of existence." (Heidegger, 1949, p.35)

The notion of architecture is, therefore, centred around the concept of 'being'. We must build upon the earth in order to 'be'. We must understand man's capacity to cultivate and safeguard his environment in order to understand man's 'Being'. And we must understand that the act of building is in itself a recognition of the need to dwell. Heidegger considers similar ideas of 'Being' and 'Dwelling' in his celebrated essay: *Bauen, Wohnen, Denken*, of August 5th, 1951, published in Farrell Krell (1978). These similar ideas can explicitly contribute to the existential understanding of architecture that Norberg-Schulz promotes. Summarised from the previous sentences we can offer:

1. Building is really dwelling

2. Dwelling is the manner in which mortals are on the earth

3. Building as dwelling unfolds into the building that cultivates growing things and the building that erects buildings

These three things, according to Heidegger, are given to the reader as long as the reader 'listens to language'. Language gives these three relationships. We listen and we hear: *bauen* (to build in modern day German); *buan* (to build in Old High German, modern day understanding to dwell); *Nachgebauer* (near-dweller); *bauen* and *buan* are now our word *bin* (*bin* (as in *Ich bin*: I am) from *sein*: to be, belongs to *bauen*). From these three simple

words (*bin*; *buan*; and *bauen*) we can develop an existentialist architecture. Through language we find that the notion of *bauen* meaning 'to dwell' has been lost:

> "Where the word bauen still speaks in its original sense
> it also says how far the essence of dwelling reaches."
> (Heidegger, 1978, p.325)

This essence of dwelling reaches to 'Being', ie *Ich bin* becomes 'I dwell', the manner in which we are on this earth is dwelling. It is now necessary to work through the three points in succession.

Building is really dwelling. Building should not be seen as simply a means to an end (a means to dwell), rather, building is in itself dwelling as the Old High German definition informs us.

Dwelling is the manner in which mortals are on the earth. The old word *bauen* gives us the modern word *bin*, therefore *to dwell* is a manner in which we 'are' on the earth.

Building as dwelling unfolds into the building that cultivates growing things and the building that erects buildings. Here we witness two distinct understandings of 'building': building to preserve and building to construct. Where things grow there is cultivation and where things do not grow there

is construction. In this sense, building has re-active and pro-active dimensions; and these two dimensions must be viewed within the general notion of 'dwelling' and 'being'.

It is now clear how existentialism relates to architecture, and it is now clear how Norberg-Schulz (in using Heidegger) has attempted to develop an 'existentialist architecture'. What is now needed is a clearer understanding of how such an architecture relates to Preziosi's notions of architectonics. As stated above, Norberg-Schulz offers a non-structuralist critique of the structuralism of Preziosi. This 'non-structuralism' has shown itself as existentialism, notably through the works of Heidegger. Preziosi's structuralism manifests itself most notably in the quote:

> "The architectonic and linguistic codes conceptually appropriate the world in its totality." (1979, p.113).

Whereas Norberg-Schulz's existentialism manifests itself most notably through this Heideggerian quote:

> "Discourse is existentially equiprimordial with state-of-mind and understanding." (Heidegger, 1973, p.203).

In these two competing quotes we see different views of language. While Preziosi considers language as possessing a correlative object-permanence with architectonic codes, Heidegger considers language as a totality

within which discourse possesses a 'worldly' being of its own (which is correlative to being-in-the-world). The motivation with which Preziosi drives language toward architectonics is 'objectively-driven', that is to say, language and architectonics are equally permanent, and, therefore, equally determine all actions within the world. For Heidegger, however, this motivation is very different. Heidegger is driven to uncover 'being-in-the-world', there is no drive to uncover 'permanence', in fact its opposite: an existential state. Discourse is that 'being-in-the-world' that 'discloses' intelligibility within the totality of language. Both Preziosi and Heidegger recognise the omnipotence of language, but armed with this recognition both arrive at different understandings. Preziosi understands language as 'object-permanence'. Heidegger understands language as 'being-in-the-world' discourse (ie, existential language). These very different understandings of the role of language have important implications for any understanding of architecture (or indeed, architectonics), and these implications have been briefly considered throughout this introductory subsection. We will carry forward these different implications and understandings to our final author to be considered in the Art/Science cell: Luning-Prak.

1.3 ART/SCIENCE CELL INTO STYLE CELL

Luning-Prak serves as a bridge between two cells: 'Art/Science' and 'Style'. The first cell has been the subject of the first five authors considered above (Luning-Prak to be the sixth), and is concerned with the general

question: Architecture as art or science? The second cell is less general and is concerned with style as a differentiating force within architecture. Luning-Prak is considered in order to bridge both cells.

Luning-Prak relates architectural aesthetics to social history, suggesting that aesthetics are a subconscious reaction to social conditions: "A building of note creates an image, a view on a world of space till then unknown." (1968, p.3). This quote signifies how the social conditions ('A building of note...') create aesthetics ('... a view on a world of space ...'). Luning-Prak's concern with social conditions relate to the Art/Science cell, while the concern for aesthetics relate to the style cell. The understanding of social conditions is not some passive, simple process, but rather:

> "[t]here exists an intimate relation between the psychology of perception and art... In particular the laws of configuration of Gestalt psychology have a great deal in common with some formal criteria..." (p.7)

This quote exemplifies the formal scientific psychology of perception in juxtaposition to art. Art:

> "... shows then, not 'the appearance of things' but their 'true nature'....The way a thing is depicted, is ... a symbol for an attitude towards reality, caused by external social circumstances." (p.23)

The more scientific Gestalt psychology offers an 'appearance' through precise laws of configuration, while symbolic art is able to reach into the 'true nature' of social conditions. It is this Art/Science division that necessitates Luning-Prak's inclusion in this particular cell. With regard to his inclusion within the Style cell, Luning-Prak considers architecture as "... symbolis[ing] an ideal world to which we ought to aspire, a dreamland." (p.vi). Three dreamlands are outlined: Classicism; Eclecticism; and Modern. Each dreamland is a differentiation, a variation, a style. Each possesses its own criteria, its own aspirations. Each constitutes an aesthetic. Where "... the architectural aesthetics are a subconscious emotional reation to the social conditions." (p.vii). We have now come full circle from the original quote, which separated social conditions (Art/Science) from aesthetics (Style), as we have now re-joined that circle in relating aesthetics back to social conditions. We can continue our discussion within the Style cell through the work of Brooks (1923).

The style that is the general concern of Brooks is an unimitative one:

> "Architecture, an absolutely unimitative art, in that it has no models as have painting and sculpture, is the art that lends more to the dignity of a civilised people than any other. And this is so because reason and beauty are the essence of dignity. On these same grounds ... it may be called the most creative of the arts, therefore the most human. " (Brooks, 1923, p.3-4)

Such an architectural style reaches towards all of those 'positive' characteristics of an imaginary intelligent culture. The prominent words are: unimitative, dignity, reason, beauty, and creative. These five words give meaning and circumstance to the ideals of architecture, they are the historical and prospective (therefore 'ahistorical') style for architecture. This quote signifies a 'naturalistic' style. Brooks is wishing to show how architecture is more natural, and therefore more deserving, than both painting and sculpture. It is more natural because it has nothing to imitate. Paintings imitate (in Brook's era, ie pre-modernism: Dada, Dali, Picasso) either people (portraits) or world (landscape). Sculptures imitate (again Brooks did not live in a time where the famous 'pile of bricks' in the Tate Gallery, London became classified as a sculpture) people or idealised people (Heroic Gods, Heroic soldiers, Heroic workers, Heroic revolutionaries). Architecture is not afforded this privilege to imitate. Architecture must directly respond to the 'function of the economy of the whole', it has no people (either idealised or ordinary) or world to imitate, it must respond to its designated function and it must do according to the four other words. The designated function is given by nature. This naturalistic emphasis becomes dignity, since dignity demands a full frontal attack upon all pretentious activities (pretending to be other than natural). This notion of dignity cannot help but be recognised as reasonable and beautiful, and this is the next step for Brooks. As we have now included reason and beauty, then they must be creative. Reason is that method by which all arguments can be resolved. And beauty is the ensuing resolution. This beauty must be the most creative as it is built upon the most sophisticated

(though not that sophisticated to lead to pretentiousness) of reasoned arguments. And we can see the architectural style of Brooks constructed with the five building blocks of: unimitative, dignity, reason, beauty, and creative.

Nemeth (1987) would argue that the style of Brooks parades as 'naturalistic' but is nothing more than a prevailing state (in this case Great Britain in the 1920s) ideology. For Nemeth, all styles have an ideological import, and it is seen as a potentially useful way to advance any study of the earth:

> "Perhaps a useful way to advance the study of the earth as the home of humankind is to consider the entire human habitat as an architecture of ideology." (Nemeth, 1987, p.3)

Nemeth defines Ideology as 'a potent political juggernaut that deliberately forces and reinforces reality to fit an idea about reality'. Architectural ideology is, therefore, a 'political juggernaut' running over the cultural landscape: where the architecture is a concrete manifestation of the prevailing ideology. For example, the prevailing ideology of Roman times was a cultural importation of the ideals of the Greeks, this explains to a large extent the many Roman temples that were constructed during this era. More recently, the prevailing ideology in the west is one of consumerism, therefore, many 'temples of consumerism' are being built (supermarkets, shopping malls). The Roman temples and the 'temples of consumerism' are both symbols of a prevailing state ideology:

"We would anticipate finding in every successful political system, whether in a tribal or national state, a built environment replete with the symbolism of a prevailing state ideology."

(Nemeth, 1987, p.7)

This symbolism can be seen as the style of any particular culture. Symbolic architecture is generally seen as an informal transmission of ideological information from the state to the people, a fine example being cultural artifacts (the Roman Emperor's crown, and Campbell's tomato soup). Each architecture has a particular style and this style is dictated by a predominant ideology.

1.4 STYLE CELL INTO ACTION CELL

From these considerations of style we now move toward the Action cell. The Action cell emphasises the activity of architecture through the progressive re-building of our social environment. There are two authors who can be seen as representatives of such a view of architecture, they are Pevsner (1968) and Banham (1971).

Pevsner can be considered to be a functionalist, in the sense that all architecture must serve a function. Activity is emphasised here in that the words 'activity' and 'function', to a large extent, can be seen as synonymous:

that which is active functions, that which is functional is active. Both words are neutral (or at least claim to be) and emphasise operation. Such a role for architecture is proposed by Pevsner:

> "Architecture and design for the masses must be functional, in the sense that they must be acceptable to all and that their well-functioning is the primary necessity." (1968, p.9)

The (feigned) neutrality of Pevsner is emphasised in two distinct ways. Firstly through 'design for the masses', and secondly through 'primary necessity'. Both phrases are functional in orientation, and both are suggested in a 'closed' fashion. For Pevsner, the argument suggested in these two phrases and in the quote is a closed, completed, finalised, self-evident argument. In fact it is not an argument at all, there is no argument: it is the truth that architecture must be designed for the masses, and it is the primary necessity that it be well-functioning. These two demands for architecture are essential, and therefore beyond argument. This feature of being 'beyond argument' is common to the Action cell, since any argument seeks to question action, and such an argument is likely to take issue with the overt functionalism (leading to this notion of being 'beyond argument') that it finds. And also, any cell that places a boundary that restricts argument will inevitably be attacked with argumentation. The main point being made here is that the Action cell creates 'action' in an environment free of argumentation:

"... the language of design, architecture, and urbanism in Los Angeles is the language of movement."

(Banham, 1971, p.23)

Banham, here, follows this basic premise of the Action cell in the above quote. Action is accentuated: "... language of movement.". It is accentuated without any recourse for argumentation. It is stated as a matter of fact (fact relates to the Latin, 'to do' which is *facere*) that the language of architecture is the language of movement. There is no attempt to analyse the meanings of the words or the different contexts within which they could exist. All these ideas are common to the Action cell, in that they wish to represent phrases that are 'beyond argument'. We can see elements of this characteristic in the fourth and final cell: Computing.

1.5 THE COMPUTING CELL

The Computing cell has one major proponent: Klir (1985). This cell is the most recent among the four cells being considered. It is concerned with architecture as computer networks. This particular definition of architecture is similar (in outlook at least) to the Action cell, in that both cells emphasise the well-functioning of the architecture under consideration. With regard to the Computing cell this well-functioning shows itself in the overall specifications of the Computing architecture:

> "The aim of architectural design is to prepare overall specifications, derived from the needs and desires of the user, for subsequent design and construction stages." (Klir, 1985, p.25)

These overall specifications must be presented to the architectural designer in a usable format, therefore, the needs and the desires of the user must be presented in a usable format. All communication, therefore, with regard to the specifications of the Computing architecture is dominated by 'usability' language. Here we can witness a close comparison with the Action cell, where functionability is emphasised. In order to show how the Computing cell differs from the Action cell it is necessary to refer to one of the originators of the use of the term 'architecture' within Computing.

With the emphasis upon usability Blaauw (an architect of the IBM system 1360) proposed three main levels of top-down computer design:

1. Architecture
2. Implementation
3. Realisation

These three levels are explained in the following quote:

> "The architecture of a system consists of the functional appearance of the system to the user; the implementation is concerned with the inner structure, considered from a logical

point of view, which makes the required functions possible; and realization is a physical embodiment of the implementation. "

(Klir, 1985, p.26)

The functionality or usability is emphasised in the definition of the architecture, but here we see architecture being referred to as the 'appearance of the system'. The inner structure (or the reality of the system) which allows the appearance to continue to appear as functional is sited at the level of implementation. When the inner and outer structures take on a physical form, then the third level of realisation is relevant. These three levels must be guided by the following eight principles:

1. Consistency - with partial knowledge, the remainder of the system can be predicted

2. Orthogenality - independent functions are kept separate in specification

3. Propriety - necessary functions only are contained

4. Parsimony no repetition

5. Transparency - no imposition on user

6. Generality - used for as many purposes as possible

7. Open-endedness - future use is considered in the design process

8. Completeness - satisfy user needs completely as possible under technological and economical constraints

The first four principles are formed in the interests of the computer architects, while the last four principles are formed in the interests of the users of the architecture. This convenient division gives an equal weighting to both architect and user. It is interesting to see how the 'beyond argument' characteristic of the Action cell is relevant to these eight principles. For example, principle five requires transparency, such that there should not be an imposition upon the user. What is being referred to here is the user's right to know exactly what the intentions of the architect are. The user should be transparent to the architect's intentions. The sole reason for the inclusion of such a principle is to avoid any argumentation regarding the architect's intentions. The principle of transparency negates any possible discussion of the intentions of the architect. The principle of transparency enforces the 'beyond argument' characteristic. This principle is empowered to do this in conjunction with the first four principles. Because the first four principles show (without argument) the naked intentions of the architect. The manner in which these eight principles attempt to enforce the characteristic of 'beyond argument' is very similar to the manner in which systems (of architects, users, and problems) conveniently classify and organise themselves:

"Such categories of mutually interrelated systems problems result from some underlying principles by which all recognised systems are conveniently classified and organised ... At the highest level of generality, the emphasis is on the development of pragmatically sound principles for organising systems and on capturing a comprehensive view of systems problem-solving processes. Such general aspects of systems problem solving will be referred to as systems problem solving architecture."

(Klir, 1985, p.24)

The manner in which 'recognised systems' conveniently classify and organise themselves allows (Klir's definition of) pragmatism to flourish and comprehension to be inevitable (who could fail to comprehend a system that conveniently classifies and organises itself?). It is the general use of these terms (ie. pragmatism and comprehension) that spells out an architecture (of systems problem solving) for Klir, and that exemplifies the fourth and final cell.

1.6 AN INITIAL UNDERSTANDING OF THE ARCHITECTURE

These four cells have created an initial understanding of the word 'Architecture'. Showing the potential for confusion, while allowing for a primal physical support (see figure 1.1 for diagrammatic representation of this) has enabled the four cells to be clarified. The primal physical support is given by the everyday use of the word 'Architecture'. We are able to use this context in order to stimulate and extend: it must be the case that the physical supports provide a basis by which the everyday can be examined. Where the everyday understanding constitutes scaffolding around which prospective cells of architectural understanding can be developed. This has been the case in this introduction to stage one and will continue to be the case throughout this stage (it is a stage of dependency and of purpose, a stage where all 'that is good' is offered as a witness to a continuation of endless dependency and purposefulness). The everyday is 'that neutrality' that manifests itself as the possibility for architectural understanding. We must temporarily depend upon this 'neutrality' in order to develop some 'thing' worthwhile: it is not neglect of the physical that stimulates such construction but reverence of its role in the process of construction. Construction requires a formalised dependency, the four cells that have been created required the physical support (generated by the inter-relationship between the four cells and the physical support (as the two remaining cells: structure and general construction)). In this sense, therefore, the everyday understanding of Architecture is the physical support upon which the complexity of 'non-everyday' discourse is dependent. The limitations in the everyday

become the strengths of the non-everyday: the limitations of one act as physical support for the other. Having achieved a substantial inauguration of this relationship we can now look upon the works of Foucault for a further exploration of the ArCST. An exploration that necessarily involves an understanding of the ArCST as a grammatical structure, where such a construction is forced to be complicit with that grammatical structure, unable to construct around or on top of it. This fascinating concluding architectural remark is included as a brief introduction to Foucault's work, an introduction that whets the appetite for the subsequent chapters and gives a strong hint as to the orientation of the second stage (where the Architecture collapses under the strain of an Acuity of CST). For now, however, let us briefly consider Foucault's conception of an ArCST.

Beginning with Foucault's *The Order of Things* we are able to witness the central importance of the potential for an exploration of the ArCST. We are thrust into an exploration of this potential through an exploration of the ability of ArCST. The ArCST becomes an ability to define. In this case an ability to define a language:

> "What makes it possible to define a language is not the way in which it represents representations, but a certain internal **architecture**, a certain manner of modifying the words themselves in accordance with the grammatical position they take up in relation to one another..." (Foucault, 1970, p.237)

In Foucault's understanding of Architecture the emphasis has changed from structural longevity to relational modification (an emphasis that summarises the permitted development from the physical support as structural longevity to the four discussed cells that together seek to establish an architectural definition of relational modification). Where before interest was given to physical structures, now that interest is given to grammatical relationships. Where before the objects of concern were hard faced buildings, now the objects of concern are soft faceless words. Where before we could visit the city or town and observe its Architecture, now we can only witness the grammatical manifestations. The potential for the ArCST becomes an endless inability to build with the same materials. The quest for structural longevity, given as physical support, is at once a recognition of this inability and a pretence that such a recognition belongs to a whole language of inability; a language that must be an inferior wasteland for the ability to construct. This obvious *aporia* can only be highlighted at the level of relational modification. Since it is the structural longevity that is highlighted in its inability to modify. To modify according to its recognition and its obvious pretence. The relational modification thrusts structural longevity into an exploration of its own potential. These two revealing dimensions of the ArCST (as relational modification and structural longevity) seek to destroy the *aporia* in order to reiterate its importance (structural longevity wishing to destroy that which destroys inability (to choose) and relational modification wishing to reiterate the importance of that which professes an inability). This activity of the ArCST becomes a central concern of the first stage in that any Architecture forces the ground to take the whole weight of its implications (the first moment) in order to shake the ground with its explications (the second moment). The first moment implicates itself as structural longevity, hoping to install a belief of stability as

the overriding political concern. The second moment explicates as relational modification, hoping to look within the attempted installation as political gesture. The spectrum that encapsulates these two moments is given by the six cell matrix as (simultaneously) structural longevity and relational modification. These two moments initiate and continue to stimulate an understanding of the ArCST.

CONCLUSION

In this essay, the notion of Architecture employed will attempt to be constructive, however, the Foucaulvian understanding of this word may prove to us that such constructive attempts are at best optimistic and at worst futile. We can see, therefore, that we must attempt to combine (though, of course, combination need not imply a successful, or coherent 'joint') the 'structural longevity' with the 'relational modification'. And that it is through such a combination that we are able to offer a thought provoking re-definition of the meaning of the *Architecture of Critical Systems Thinking*.

CHAPTER TWO: STRUCTURE

INTRODUCTION

The interests of this second chapter are best served with a concentration upon the two structural sides of the Architecture prior to a concentration upon the Architecture itself. The two structural sides are the main debates and the four epistemological levels. The main debates arrive in three instances: 'Margins', 'Fiction', and 'Will'. The four epistemological levels are: Dialectical-Forms, Cross-Dialectics, Cross-Generics, and Pluralism. The main debates will be explained in structural detail, their method of progression realised, and some introductory examples given. The epistemological levels will also be explained in structural detail, their method of progression realised, and some introductory examples given. The main debates will be discussed in section 2.1, and the epistemological levels discussed in section 2.2 . Section 2.3 brings these two sections together, and in so doing generates the 'Architecture as structure' (the 'Architecture as process' is given in chapter three; the 'Architecture as content' is given in chapter four; and the 'Architecture as systems thinking development' is given in chapter five). The Architecture as structure relates to the 'structural longevity' dimension discussed in the previous chapter (the other dimension being 'relational modification' which becomes the interest of the third chapter: 'Architecture as process'). To concentrate upon the structural longevity is an

attempt to establish an 'everyday' perception of Architecture, to establish such a perception relates well to the more theoretical perception established in the following chapters. This chapter, therefore, serves as an introduction to the practice of Architecture, and strictly develops from the first chapter providing the pluralism of definitions. The practice of Architecture is in construction as we construct a means to understand Critical Systems Thinking as a forceful actor within the Systems community as a whole.

2.1 THE MAIN DEBATES

The first structural side to the Architecture is the main debates. The three main debates correspond to arguments current in Critical Systems Thinking. There are two terms that now require clarification: 'arguments' and 'current'. To clarify these two terms is to clarify the purpose of this subsection, which is to introduce the main debates. 'Arguments' refers to a series of reasoned statements (in this case) around some polemic. The polemic dictates the structure of the series of reasoned arguments. For example, the polemic of modernism and postmodernism dictates that any series of reasoned statements should include both modernist and postmodernist structures, and that if such a series does not respond to this polemic, then the series can be said to be ineffective. It must be maintained that one of the most important aspects of these main debates is the effective response to the polemic. Such a response must also be 'current' (the second term in need of clarification). To be current is to be effective on a temporal scale (in contrast to effectiveness on a structural scale), showing how the debate

must respond to recent developments. For example, Systems Thinking must respond to the developments currently taking place in the area of Critical Systems Thinking. To be current, therefore, is to be open to current thinking. Having clarified these two terms the purpose of this section is clarified as introducing debates that are effective on two scales: the temporal and the structural.

2.1.1 Margins

The structural scale operates through all of the three debates. The three debates are: Margins, Fiction, and Will. The debate concerning Margins focuses on relationships within the intellectual debate itself. These relationships demonstrate the existence of two particular types of arguments; marginal and core arguments. Where both forms of argument respond to the structural scale, however, it will be argued throughout this thesis that the marginal arguments are necessarily more responsive to the structural scale. The main reason why they are marginal is because they are more responsive, as it is often the case that the marginal argument uncovers theoretically radical theses, theses that respond to the relevant polemic, and in so doing reveal the weaknesses of the core argument. If we wish to understand the polemic, to respond to the structural scale, then we must investigate marginal arguments (with a correlativety to the core arguments).

The core arguments are the common, traditional, well-established and accepted ideas currently in circulation within any discipline. As they are well-established, by definition, they lack the temporal scale of responsiveness.

Core arguments respond to the problems and the polemics of another time, they do not wish to be become 'too involved' with the present, as the present is 'too volatile', inconsistent, unsure, lacking identity; in short, the present represents the constant attempt to destroy what has been established before, and must be continually re-established by core arguments. The core arguments are interested in re-presentation of that which they are familiar with, where familiarity breeds competence, competence to control, competence to feel secure, and competence to create a distance between 'yourself' (as a core investigator) and the forces that wish to disarm (the present) that 'self' (as the community of core investigators). The core arguments represent a history of protective acts, a law of possession, and a law of rights. The core arguments are interpreted as the 'essentials' to any serious debate, a reference to a core argument is a reference to something that must be accepted as universally true. Its universality speaks through all ages of man, guiding man to recognise 'that which is essentially right'. We can see, therefore, that this desire for universality is the antithesis of the temporal scale of responsiveness, is the antithesis of marginal arguments.

The marginal arguments are the eccentric, unfamiliar, unconventionally formulated and generally unaccepted ideas that find themselves in the fringes of any discipline. They find themselves on the fringes because they respond to the structural and temporal scales. It is with particular reference to the responsiveness that marginal arguments have towards the temporal scale that forces the core arguments to destroy (by marginalisation) the marginal positions, as this responsiveness acts as a threat to the supremacy of the core positions. The Margins debate, therefore, considers how core arguments become core arguments and why marginal arguments are marginalised. Marginal debates sometimes become

core debates, though for this to happen, and for the marginal debates to maintain this status, the marginal debates lose their 'marginal' nature and adopt a 'core' nature. This core nature preserves the debate by failing to respond to the temporal scale. There exists, therefore, a theoretical struggle between the core and marginal arguments. The marginal arguments search for the polemic in any debate (and that polemic may be, in some cases, the existence of 'core' debates) and consequently respond to it in its structural and temporal scales. The core arguments must avoid the polemic in order to maintain a 'correct' understanding of traditional and universal themes. Necessarily, therefore, the core struggles to disarm the marginal, and the marginal struggles to de-stabilise the core. An example of a marginalised argument is the focus for the second main debate. The second main debate focuses upon the marginalisation of 'fiction' within social theory. An example of a core argument is the establishment of (legal) commitments within any discipline. An example here could be Checkland's commitment to only show proven methodologies to the systems community:

> " Authors had better keep their models and methodologies to themselves until they can demonstrate a problem solved by the use of them, ..." (Checkland, 1988, p.192)

The question that arises from such a commitment is: how are they to be proven if they are to be proven apart from the systems community? This commitment tries to give legitimacy for the employment of systems models and methodologies by disallowing their development from within the systems community, and of course how was Soft Systems Thinking developed if not from within the systems

community? This Checklandian orientation to a (legal) commitment shows an attempt to reach the 'core' requirements of methodological verification. Authors are disallowed to present any methodology that has not been verified at a point distant from the systems community. The core, in this case the systems community, must be distanced (or protected) from the mechanisms that generate 'new' and present ideas. This, thus, is the message of this quote, and shows a core argument in systems thinking requiring an introduction to this marginal debate.

2.1.2 Fiction

The second debate concerns 'fiction'. As stated above, fiction is seen as an example of a marginalised debate in systems thinking. The development of this second debate is, therefore, as a direct consequence of an understanding of the existence of marginalised debates as given in the first debate. This debate concerning Fiction focuses on the relationship between fact and fiction. The debate takes place between the 'disciplinary borders' of modernity and post-modernity. Here, we must clarify four terms: 'fact', 'fiction', 'modernity', and 'postmodernity'. To clarify these terms is to clarify the concerns of this second debate in systems thinking.

'Fact' and 'fiction' have different meanings according to the context, be that context 'modernist' or 'postmodernist'. We must look at the modernist notions of fact and fiction, and distinguish them from the postmodernist notions.

Fact and fiction are separated by fact in modernity and fiction in postmodernity. Fact controls in modernity. Fiction controls in postmodernity. Modernity views language as medium. Language as medium requires two unities: self and reality (Rorty, 1989, p.10-24). As language requires self and reality to be unities, this implies that language sees itself as a unity, since to relate to two unities requires the presence of a third unity: language. Fact, in this modernist scenario, is the 'fitting of things to the world', facts relate to the world in a uniform manner. Facts are the realities, the second unity. Fiction, in this modernist scenario, has no utility as it does not attempt to 'fit things to the world'. Fiction takes place within the unity of the self (the first unity) with no reference to the realities (the second unity). The unity of language as medium forces these two unities into separate worlds, the world of fact (realities) and the world of fiction (non-realities surfacing as discourses on the self). Postmodernity assumes this separation to be a fiction, that is to re-iterate that fact and fiction are separated by fiction (and not as fact in the modernist sense). The notion that there lies something beyond language that can be labelled 'fact' is seen as a fiction by postmodernist thinkers. 'Language' is our creation in as much as 'fact' is our creation, and all acts of creation are a fiction. Truth is a property of language, and not a transcendental state beyond language. Fact and fiction, therefore, in postmodernist discourse, become intimately linked in language (and not separated as in modernist discourse). Language dictates the presence of truth, and to call that truth 'fact' is to assume a dis-*location* from language. Facts and fictions are *located* within language, and as such the distinction between fact and fiction becomes irrelevant, what becomes relevant is the efficient use of language (this is to be discussed at length in stage two: *The Acuity of Critical Systems Thinking*).

The principal contention within this debate, therefore, is that modernity considers it necessary to distinguish fact from fiction, and in so doing marginalises the latter from its discourse; while, post-modernity combines fact as fiction as an integral part of its discourse. This distinction refers to the first debate, and thereby continues the concerns of this first debate. To summarise: the Fiction debate considers how and why modernity and postmodernity distinguish fact from fiction. The interests that stimulate acts such as the distinguishing of fact from fiction becomes the concern of the third debate, and thereby continues the progressive development from margins to fiction to will.

To offer some examples of modernist and postmodernist authors who are concerned with notions of fact and fiction we can refer to: Searle (1983) (see also Falck, 1986) as a example of the former, and Rorty (1989) as an example of the latter.

2.1.3 Will

The third main debate would suggest an answer to the problematic of the distinguishing of fact from fiction through the concept of 'Will'. This debate would propose that people have a will to categorise, and therefore, need to classify fact from fiction. The Will debate, however, is far more extensive than this. Its essential argument is that people have a will to know things (ontological), and that this will manifests itself in coherent (as well as incoherent) representations of reality (epistemological). The argument continues that these forms of repre-

sentation lead to either commensurable (where incoherence is tolerated, and attempts are made to relate it to coherent thought) or incommensurable (where incoherence is not tolerated and ridiculed) positions. The Will debate, therefore, questions the relationship between will and representation. Relating these two terms squarely with fact and fiction, we find that fact and fiction are representations of a certain will. One will that seeks coherent representations calls these 'facts', and their incoherent relations (serving no utility in their lack of coherence) 'fictions' (the modernist will); Another will that seeks an efficient use of representations (and in doing so drops the notion of 'language as representation' and prefers the notion 'language as contingency') begins with contingencies that are found to be incoherent in both factual and fictional forms. Examples of these different 'wills' can be evidenced in the works of Habermas (1972, 1974, 1984) in the first case, and Foucault (1977, 1980) in the second. A distinction between the works of these two authors becomes a major interest of the fourth chapter.

2.1.4 The first structural side

The first structural side of the Architecture has now been introduced and the relationships between them highlighted. The first structural side consists of Margins, Fiction, and Will. Margins is concerned with the study of discourse that responds to the two scales of structure and temporality. Fiction becomes an example of such a marginalised discourse, and studies the relationships between fact and fiction. Will considers how authors represent truths, an example being

a will to relate fact to fiction, or to distinguish fact from fiction. This process from Margins to Fiction to Will, and the structural side itself is represented diagrammatically below:

Table 2.1 The First Structural side

DEBATES : (the first structural side)	MARGINS (responsive to temporal and structural scales)	FICTION (as an example of a marginal -ised discourse)	WILL (the interests behind marginalised discourses)

2.2 THE FOUR EPISTEMOLOGICAL LEVELS

INTRODUCTION

The second structural side consists of the four epistemological hierarchies. The Four epistemological hierarchies begin with a simple Dialectical-Form and end in a re-definition of Pluralism. These four levels gradually increase in complexity from the dialectical opposition of thesis and anti-thesis through to the pluralistic treatment of competing disciplines of thought. All four levels are epistemological, in that they organise knowledge into either opposing forms (Dialectical-Forms); or into networks of Dialectical-Forms (Cross-Dialectics); or into competing classifications of knowledges (Cross-Generics); or into pluralistic contexts. At each level the epistemological concerns change from at first the challenging of oppositional ideas (Dialectical-Forms); to the arrangement of these ideas into four dimensional epistemological networks; to networks as classifications of knowledge; to classifications as possible restrictions upon epistemological investigations. These four movements correspond to the four sub-sections in the second structural side of the Architecture. The four sub-sections are: Dialectical-Forms; Cross-Dialectics; Cross-Generics; and

Pluralism. Each sub-section will be considered on its own terms, examples will be provided to aid comprehension, and their role in the second structural side will be highlighted (evidenced as a steady progression with similarities with the first structural side, these similarities becoming the interest of section 2.3)

Having established an introductory understanding of both the four epistemological hierarchies and the three main debates, it would prove necessary to develop this understanding. We will first of all concentrate upon the four epistemological levels. The basic aim here being to offer a clear indication of how each hierarchical level is constituted and, more importantly, how each level is organised within the structural hierarchy of the Architecture itself. This structural hierarchy is of an epistemological nature, that is to say it suggests a theory, or rather theories of knowledge. The Architecture is a representation of these theories of knowledge. It seqentially builds from the Dialectical Forms, to Cross-Dialectics, to Cross-Generics, and finally to Pluralism. The following sub-sections (2.2.1 to 2.2.4) will show and explain this development; beginning with Dialectical Forms and ending with Pluralism.

2.2.1 Dialectical-Forms

The first stage of the epistemological hierarchy is Dialectical Forms. Dialectical-Forms develop from Hegelian Dialectics (thesis, antithesis, and synthesis) and Platonic Forms (an attempt to escape any reliance upon the sensible

world). They combine the oppositional thinking of the dialectics with the intelligibility of the forms: that is to say, that this first level allows an understandable tension to be generated between competing terms. Where the notion of 'understandable' derives from the intelligibility of the Platonic Forms, and the notion of 'tension' derives from the oppositional thinking of the Hegelian Dialectic. Together, therefore, the notion of 'understandable tension' offers the prospect for a 'Dialectical-Form'. The derivation of this Dialectical-Form will now be explained in greater detail.

For the purpose of demarcation and comprehension Hegelian dialectics shall provide the basis of this section upon Dialectical-Forms. Dialectical-Forms, however, as stated above develop from two main notions, the notion of 'understandable' and the notion of 'tension'. The notion of tension is considered to be Hegelian in perspective, and the notion of understandable is considered to be Platonic in perspective. The main perspective of this sub-section will concentrate upon the Hegelian perspective, we will however begin with a consideration of the Platonic dimension.

In order to fully appreciate the Platonic Forms we need to enter into the Greek language, because *philosophia* requires the treading of a similar path, a path that the Greeks tread, therefore, to speak *philosophia*-cally is to use that path, and to use the specifics of the Greek language at that time. The Greek verb, 'to see' generates two aspects: the form and the idea. The 'form' refers to the visible shape of an entity, while the 'idea' refers to the visible difference between entities. We are able to see the 'form' and at the same time we are able to see this 'form' as different from other 'forms' through an 'idea' of their visible

difference. As the two aspects become part of intelligible debate, by pursuing similar paths of thought, they gradually show themselves as distinguishing characteristics without the restriction to the sense of sight (McInerny, 1963, p.148). The path of intelligibility does not require the restriction of sight at every point along the way, the path of intelligibility only requires a recognition of similar intentions within the domain of debate. We are, here, witnessing a move away from the sensible (or the visible, that which can be sensed by us) world to the intelligible world (that which is free from the physical senses, that which restricts the intelligibility of words). The move, however relies upon metaphorical references to the sensible world (in order to be intelligible you must retain an element of sensibility, an element that is necessarily subservient to the the intelligible wishes). But a metaphor can always be used to offer an intelligible explanation: in the way the sun lights up everything we see, the 'form of the good' lights up other forms. In the way looking directly at the sun is blinding, looking directly at the 'form of the good' is blinding (MacIntyre, 1974). This means that the 'form of the good' is not restricted by its sensibility, as the 'form of the good' is an intelligibility that shows sensibility in forms that do not require a similar level of intelligibility. It is only with the 'form of the good' that we are able to see the form: the 'form of the good' necessarily dictates the sensibility of the form. The form is unable to escape the intelligibility of the 'form of the good'. In this sense all we can know is the form in its presence and participation with the 'form of the good':

> "... nothing makes a thing beautiful but the presence (parousia) and participation (Koinonia) of beauty in whatever

> way or manner obtained; for as to the manner I am uncertain, but I stoutly contend that by beauty all beautiful things become beautiful." (Plato, Euthyphro, p.99-100).

The explanation to Euthyphro's problem considers the form's transience to be related to its 'sensible' derivation. In this example drawn from one of Plato's 'dialogues', the form 'beautiful' is at best an illustration that may fall into the general classification 'beauty' (the 'form of the good'). 'Beautiful' is not the classification it is an illustration. To demonstrate the classification 'beauty' it is necessary to define it; as any definition is a mere form (as opposed to the 'form of the good'), then it lacks classification, only reaching the stage of illustration. Euthyphro admits defeat to Socrates in the dialogue in suggesting that every time he pins down a definition it (finds itself as yet another form) gets up and walks away:

> "I really do not know, Socrates, how to say what I mean. For somehow or other our arguments, on whatever ground we rest them, seem to turn round and walk away." (Plato, Euthyphro, p.437)

This inability to allow arguments to rest in one place comes about because the arguments, in their participation and presence with the 'form of the good' are never alone. The arguments must relate to the 'form of the good', and in doing so are at its mercy. The 'form of the good' never rests, therefore, the arguments (as the beautiful things made beautiful by beauty) never rest. This is

seen as the form's reliance upon its sensible derivation. In order to escape the form's reliance upon its sensible derivation, the form must appeal to the intelligible 'form of the good'. In this way, the object of true knowledge cannot be conveyed by the senses in the sensible world, but must be conveyed in the intelligible world. The following table (McInerny, 1963) represents how the 'forms' can escape their reliance upon the sensible world:

Table 2.2: Knowledge as 'forms'

VISIBLE		INTELLIGIBLE		
Images	Visibilia	Mathematicals	Forms	(Objects)
eikasia (imagining)	pistis (belief)	dianoia (thinking)	noesis/ episteme (knowledge)	(states of Mind)

Images comprise of shadows and reflections. Visibilia consist of animals which we see, everything that grows and is made. Images through visibilia attempt to copy to reality. Knowledge through an image represents an opinion. Knowledge through visibilia represents science. (See Plato's Republic VI, 509-510). The belief accedes to the acquisition of knowledge of the 'Good'. Knowledge is, therefore, allowing a contrary movement where all forms depend upon this 'good'. The knowledge movement is contrary since it does not require

recourse to the sensible (as mathematicals must), but requires recourse to the intelligible. It is the intelligible that manifests as the contrary force. This knowledge movement regarding the 'forms' is called a Dialectic (McInerny, 1963, p.156). Plato considers the dialectic as both division and generalisation:

> "I am myself a great lover of these processes of division and generalisation; they help me to speak and to think. And if I find any man who is able to see 'a one and many in nature, him I follow', and 'walk in his footsteps as if he were a god'. And those who have this art, I have hitherto been in the habit of calling dialecticians; but God knows whether the name is right or not." (Plato, Phaedrus, p.266).

Would Plato follow Hegel the dialectician? Would an 'open and autonomous dialectic as methodology' appeal to Platonic forms? Let us now relate Platonic terms with Hegel's dialectic and consider how Dialectical-Forms may take shape.

Hegel sees Plato's 'forms' as abstract since they fail to exhibit the universal as activity. In this sense, the Hegelian dialectic has a tentative relationship with Platonic forms. Let us further pursue Hegel's conception of Plato's forms. Mure (1940) considers two Hegelian interpretations of Plato's forms. Firstly, an Aristotelian notion that forms subsist in a real world of their own as absolute singulars, not real enough to have efficacy. Secondly, the forms exist as purely subjective 'mental' concepts, external to a real object of thought. Plato discusses the first and the second interpretation as merely the obverse of the first and is also denied by Plato. A reference to the ideas represented in the table and

in the text above indicate how the forms do not begin from a nominalist view of the universal. If, therefore, the first interpretation seems to have credence, in that the forms are generated from within the visible, real world, how can the Hegelian dialectic relate to the Platonic forms? The Platonic forms relate to an imperfect reality (obverse to 'mere thought') through the 'argument from opposites', which refers to a crucial defect in our conventional belief system. Our convential belief system relies upon resolution, agreement. Nothing is believable unless it has been resolved by some previous act. In the belief system's reliance upon resolution, there is a distrust of argumentation. Platonic forms seriously consider this defect in our conventional belief system. For example, ascribing some property 'X' to an object will not be consistent from all possible considered viewpoints, in fact some viewpoints may ascribe 'not-X' to the object. A 'conversation' can begin between the two 'agents of ascribing' (the Greek verb 'dialegein' is 'to converse': to form a dialectic) in the form of a Socratic dialogue; where progress is made by the dynamic process of argument, counter-argument and continual adjustments to continually moving positions. Such progress is considered to be lacking in conventional belief systems and is evidenced in Plato's dialectics. In Plato's 'Republic' 'dialectic' refers to the highest form of philosophical reasoning, where argument and counter-argument eventually leads to first principles (Cottingham, 1984).

We have now reached the state of relating Platonic forms to the process of dialectics, and then this process unto the forms to give dialectical forms. It now seems appropriate to introduce a definition of the Hegelian dialectic that will shape the first section of this thesis. In introducing the Hegelian dialectic we will consider the work of Israel (1979), who analyses four categories and presup-

positions of dialectics: Totality; Intrinsic relations; Relatedness; and Process. We shall now consider these four categories in some detail in order to complement the Hegelian Dialectic with the Platonic Forms.

The first presupposition is Totality. Totality negates all dualities (body/mind; language/reality) and all attempts at reduction.

> "Reduction implies the explanation of one phenomenon (eg. mind), being conceptualised in one language (eg, the language of psychology), in terms of the language employed for the analysis of the other phenomenon (eg. body and the language of physiology)" (Israel, 1979, p.61).

Totality, therefore, wishes to retain the languages that have created, analysed and critiqued certain phenomena. In the hope of transcending both dualism and monism, dialectical reasoning is considered to work under the presupposition of a 'unified' framework, a totality (it must be remembered, however, that the unity exists in the framework and not in the dialectical process itself). It is useful, firstly, to recognise that totality does not imply the possibility of total knowledge, but it does imply that the limited knowledge that is achieved should be inter-related within a totality of thought. The process of dialectical reasoning decides under the nature of inter-relatedness, which in turn decides the nature of the totality, which in turn decides the process of dialectical reasoning. This is a systemic process where competing languages operate within a notion of inter-relatedness, totality and dialectical reasoning; all referring to each other.

Intrinsic relations allow dialectics to work with dual notions, (such as subject-object, fact-fiction, being-nonbeing), without the reduction to a dualism. In traditional empirical science extrinsic relata dominate conceptualisation and advocate various forms of dualism. Israel (1979) proposes two properties of extrinsic relata: (1) concepts institute classifications, and (2) good classifications ensure statistical intercorrelations. Extrinsic relata presuppositions include: independence of measures (measurements transcend boundaries with no relationship with the phenomena being measured) and a (dualistic/atomistic) static ontological position. A reason why these extrinsic relata presuppositions retain their power over dualistic thinking is their unreflectiveness. Upon reflection of the presuppositions holding extrinsic relata together, we can see its ontology remaining unquestioned and its methodologies attempting to dominate the phenomena under investigation. It is argued that intrinsic relata enables a questioning of its ontology and an acceptance that any relationship between phenomena, in order to be insightful, must be open to change (there are no independent measures of reality, any 'measurement' changes when related to the phenomena being measured). We can therefore define intrinsic relata as operating within a totality, they are separate, different and interdependent.

Relatedness emphasises the 'relation' over the 'thing'. This relates very closely to the fourth category of 'process', in the sense that relatedness presupposes process. Relatedness comprises two aspects: intrinsic and relations of relations. Intrinsic relatedness sees complimentary relationships between objects (in the world of objects). That the objects intrinsically relate to each other, where the meaning and significance of an object is registered in the recognition and attribution of a complimentary object. It is this form of registration that is

the intrinsic relation. The second aspect is relations of relations. Relations of relations emphasises that all social phenomena are in a process of transformation. What is being related to is relata also (in the social world). No object can be privileged with a serenity of solitude. To relate to an object is to relate to another act that is relating to the first act of relating. Both acts accord in the relationship because the method of application has been agreed upon previously. It must be remembered, however, that all objects are relata, and that relata relating to relata is the order within Dialectics.

The fourth category of process has two dimensions: praxis (process in terms of human actions)(a Marxian development), and an ontology of 'process-metaphysics'. An ontology of 'process-metaphysics' asserts everything as process. Structure is secondary to process, process causing structure (as process slowing down). Praxis

> " ... is the essence of human existence in terms of producing, forming, and transforming the world ... [and allows comprehension of] the social world as produced and being transformed, in contrast to viewing it as given." (Israel, 1979, 119).

Praxis is not the opposite to theory but sees man as producer and as a process of production. To this extent Praxis constitutes the historical conditions for a unity of producer and produced through dialectics. Though the interests for such

a unity are not viewed as possible in Dialectical-Forms, because to unify is to fail to observe the three other operational categories (the intrinsic relata for example).

Having defined four categories and presuppositions of Dialectical-Forms (totality, intrinsic relations, relatedness, and process) it is insightful to consider the *post-festum* paradox. All four dimensions emphasise inter-relatedness within an ever-changing totality, a totality that is never complete (it must be noted that the totality is given by the framework, as stated above, and it is given as an ideal of comprehensibility, totality is not represented as a dialectical-form). This is where the *post-festum* paradox is relevant, since it considers truth to be properly existing at the completion of the system. The paradox: as we reach for completion in comprehension, we can never fully comprehend, as the system is never completed (ie continual interpretations). Comprehension relates to completion, and the system is never completed. Rosen (1982) considers two ways in which to resolve the *post-festum* paradox: Method to be distinguished from System; and dialectic as immanent critique (two aspects that must be implicit in previous definitions of dialectic).

The first way, 'Method to be distinguished from system', asks if the dialectical method of Hegel can be rejected while retaining a dialectical system of rationality. In the Hegelian dogmatism of asserting Absolute truth it would seem that the dialectical method outlined above contradicts such a dogmatic assertion. It would seem, however, that Hegelian ideology (or any ideology) contaminates the (Hegelian) dialectic: the notion of science belongs to the logistic's content (the method constitutes the final result). It would appear, therefore, that the price of

distinguishing the method from the system is an abandoning of the Hegelian common ground. The dialectical method cannot be distinguished from the Hegelian Ideology, as the ideology shapes the dialectic as well as the dialectic shaping the ideology, therefore,

> "... an account of the methodological aspects of his philosophy involves exactly the same problems as those facing an account of the philosophy taken as a whole" (Rosen, 1982, p.28).

We can see, therefore, that the attempt to resolve this paradox has achieved little more than an improved understanding of the paradox. To separate the philosophy from the methodology is untenable, and the *post-festum* paradox remains.

The second attempt to resolve the *post-festum* paradox is 'dialectic as immanent critique'. Dialectic as immanent critique offers powers of refutation that seem (as least in their distinct identity from determinate negation) highly appropriate in resolving the *post-festum* paradox. Firstly, immanent critique does not violate the relationship between method and content (as was the fault of the previous attempt at resolution). In not doing this the methodology is allowed openness and autonomy: there is no *apriori* intersubjective acknowledgment or privileged access to self-justification. The conditions are intrinsically given by the dialogue on its own terms, and the dialectical method must deal with objections with regard to the terms generated by dialogue. Secondly, a true system of rationality must take into account contrary, irrational and lower

standpoints and participate in their assumptions. Reflections must not be external but in accord with the debate entered into. Hegel considers true refutation as necessitating an entering into the power of the opponent, placing itself in its 'compass of strength'. (This is suggestive of complicitous critique which shall be considered later).

The resolution of the *post-festum* paradox is possible by distinguishing method from system if we are willing to abandon the Hegelian common ground. The Hegelian ideological imperative of 'absolute spirit' needs to be critiqued. This critique is possible through immanent critique. Immanent critique does not violate the relationship between method and content, and, therefore, is able to critique 'absolute spirit' as dialogue through the conditions of the dialectical method. In this way, we can envisage a temporary resolution of the *post-festum* paradox through a combination of 'distinguishing method from system' and 'immanent critique'. The distinguishing of method from system enables the dogma of 'absolute spirit' to be highlighted. In further considerations of the *post-festum* paradox we can begin to see that the philosophy of absolute spirit is antagonistic to the dialectical-form and seeks to destroy the dialectical play. With the help of immanent critique we are able to see this and to temporarily resolve the *post-festum* paradox. This temporary resolution allows Dialectical-Forms to take shape.

The shape that Dialectical-Forms take, however, must be aware of other criticisms of Dialectical-Forms. One of the more interesting criticisms of dialectics suggests that in treating itself as possessing an idealist ontology it leaves itself open to at least four critical reactions: empiricism, materialism,

existentialism, and the primacy of praxis (Sloterdijk, 1988, p.367-379). Within the conceptions of dialectics advocated in this second chapter we are forced to bring dialectics out from the Hegelian 'ontological putsch' and into a form where the polemical exceeds the dialogical (thereby allowing the Dialectical-Forms to respond to the polemics of the three main debates, this allowance is seen as essential for the potential of the ArCST). The polemical needs to exceed the dialogical in order to critique 'synthesis' as a falsifier of productive dispute (the seventh stage of Cross-Dialectics advocates this polemical position). Adorno's (1973) *Negative Dialectics* takes on the issue of the Hegelian (falsifying) positive dialectic (the first root). Adorno cites Marx initiating Universal Polemics in an attempt to liberate dialectics, but falling for the lure of the (resolving) positive dialectic. Critical Theory makes a more serious attempt in re-writing history from the 'oppressed' (the negative's) point of view. Adorno also considers a second root to take issue with: Hegelian 'becoming'. 'Becoming' as a change from the required complexities of social polemics to a natural philosophy and a biological play of the sexes. Sloterdijk (1988) considers these two reductive elements of the second root in Hegelian 'becoming' as Hegelian 'Dialectics as rhythmics'. The following warning is given:

> " Those who see that the world is harmony in strife will not struggle against it. Wherever insight reigns, the subject of struggle has already faded. If, however, dialectics in this sense may really be called the 'highest theory', it seems to be argumentatively completely defenceless. In its free-floating contemplation, it has relaxed to the most serene

> of all improvability. Such wisdom is thus in no way polemics but rather attunement and rhythmisation." (Sloterdijk, 1988, p.377)

To call itself the 'highest theory' is to fail to respond to the polemics that are presented to it. Our definition of Dialectical-Forms must respond to the polemic presented to it. The argument stressed throughout this thesis stresses argument. If Hegelian rhythmisation closes discourse through appealing to a lost harmony, then the Hegelian method can be separated from the Hegelian system. A polemics must critique Hegelian rhythmisation and advocate continual critique.

2.2.2 Cross-Dialectics

Cross-Dialectics assume and develop from the complexity of the Dialectical-Forms. The Dialectical-Forms, themselves, become the issue (where before the issue gave rise to a dialectical form), and then operate across other Dialectical-Forms. As the name implies, the second level allows Dialectical-Forms (DF) to cross each other: one DF may raise issues in another DF, the issue between the DFs becomes the content of Cross-Dialectics. There is a high degree of complexity formed within this second level: firstly, DFs raised in level one cross each other in competition for space, thereby creating a Cross-Dialectic; secondly, Cross-Dialectics operate in different areas (or spaces) and, therefore, cross each other, thereby creating a Cross-Cross-Dialectic; thirdly, this structure can be visualised as three-dimensional, thus providing a visually convenient level of complexity; and fourthly, this structure is temporary, thereby requiring an understanding of a fourth dimension: that of time.

Cross-Dialectics begins with the Dialectical-Forms explained in the previous sub-section. The dynamic process of thesis and antithesis needs to be retained in the form of a continual dialectic. At moments there will appear to be an agreement between the two elements. The agreement will not be total and shall be reliant upon the operating power/knowledge network (cf. Foucault, 1980). How the agreements develop with reference to such a network shall form a possible third stage of the Cross-Dialectics methodology. This third stage

replaces the synthetic Hegelian triad with a broad based critique of how dialectics can form and are subsequently resolved; critique of the Dialectical-Form replaces Hegelian synthesis, a critique involving further Dialectical-Forms.

We are able to summarise the process up to this point: develop a thesis (stage one); discover its antithesis (stage two); discover where other competing dialectics relate to the initial dialectic (stage three). The fourth stage may suggest a 'cross-dialectics' between the processes at stage two and three. Further stages develop the thesis of 'cross-dialectics' through allowing the dialectics to operate across the dimensions separating other competing dialectics. In this way we can envisage a three-dimensional spatial network of cross-dialectics changing as a fourth (temporal) dimension initiates further competing dialectics. The first three dimensions consist of dialectic (first dimension), cross-dialectic (second dimension), and cross-cross-dialectic (third dimension). Taken as a totality the first three spatial dimensions represent a complex structured thesis upon power and knowledge relationships. When the fourth dimension completes the thesis an ever-changing process of cross-dialectics continually generates new positions of temporal worth. The fourth dimension, therefore, represents the necessary relationship between dynamic debate and temporality.

We are now able to summarise this description of Cross-Dialectics into seven distinct stages (see figure 2.1): First, develop a thesis that seems (initially, at least) coherent, for example, all knowledge must be objective. Second, in developing the thesis further, antagonisms begin to show themselves. As soon as these antagonisms become a coherent force an antithesis exists, for example, all knowledge must be subjective. Through the interdependence of the intrinsic

relationship within the first two stages, a dialectic is formed. These first two stages are repeated three times, this is in accord with the three dimensions of space. The result of the first two stages, therefore, is three Dialectical-Forms. These three Dialectical-Forms exist in isolation (for the moment) created according to the schema outlined above. Third, problems with Hegel's dogmatic assertion of absolute truth lead to scepticism with regard to the synthetic phase of the triad. In order to remain in a state of immanent critique competing dialectics propose points of discourse when offered to the initial dialectic. This third stage can be seen as the 'first thesis of proposition'. It proposes one Dialectical-Form to relate to another Dialectical-Form (DF). If sufficient tension is generated, then this proposal can come to fruition (and the word 'sufficient' means nothing outside of the application of these ideas to an epistemolgical problematic. An example of sufficient tension would arrive between a DF of functionalism and interpretism and a DF of systematic methodologies and systemic methodologies. (For evidence of a recognition of sufficient tension see the work of Peter Checkland)). Fourth, a 'cross-dialectic' begins where sufficient coherence is allowed at a point of discourse. The notion of sufficient coherence responds to the fourth's stage 'first antithesis of proposition'. This antithesis seeks to nullify the 'first thesis of proposition' as advanced in the third stage. And the most direct and most powerful way to denounce a thesis is to see that thesis fail in an application of its own suggestion. That application is the proposition of the third stage and the fruition of the fourth stage. The effect of the first four stages, therefore, is to generate three DFs, and to bring two of them into a dialogue. But this dialogue begins between two dialectics, usually at different stages of development. This dialogue will consider issues such as dialectical-boundary-judgement, the method of dialectical development, the assumptions underlying

and promoting the dialectic, and when/how does a discourse become coherent. And this dialogue between two DFs has been brought together under a dialectic of proposition and anti-proposition. This dialogue is named 'Cross-Dialectics'. Fifth, it is proposed that Cross-Dialectics operate in different areas (for example, methodological questions are very distinct from epistemological questions) in order to create rigourous options for the dialectician. In order to further question these different areas a 'Cross-Cross-Dialectics' is proposed. This proposition comes as a 'second thesis of proposition'. As the terminology suggests, a Cross-Cross-Dialectics works at a stage across a Cross-Dialectic. In order to halt an infinite regression, three spatial dimensions give shape to the Cross-Dialectics. These three dimensions are supplied by the three DFs provided in the first two stages. It is posited that three dimensions of dialectics are sufficient to deal with the complexity of the rationality of any chosen array of Dialectical-Forms. Similar to the third and fourth stages, the fifth and sixth stages propose and anti-propose. The sixth stage arrives as the 'second antithesis of proposition', and in doing this provides the space and intention for a 'Cross-Cross-Dialectic'. This second Cross-Dialectic becomes the third dimension (see the diagram for clarification). Seventh, a fourth (temporal) dimension allows a continual generation of points of discourse. This dimension also allows for dialectics which lose their coherence to be abandoned in favour of more coherent dialectics. This stage searches for DFs that loose their tension over any temporal period. As interest diminishes new DFs are searched for, with the express aim of discovering DFs that generate 'sufficient tension' to ignite debate. The seventh stage can, therefore, be seen as a temporal dimension that is aware of the 'life' of competing Dialectical-Forms and seeks to maintain a

high level of tension within the three dimensional Cross-Dialectic. The seventh stage may be partially explained through Rorty's (1991a) invocation of William James.

> "our acculturation is what makes certain options live, or momentous, or forced, while leaving others dead, or trivial, or optional. We can only hope to transcend our acculturation if our culture contains (or, thanks to disruptions from outside or internal revolt, comes to contain) splits which supply toeholds for new initiatives. Without such splits - without tensions which make people listen to unfamiliar ideas in the hope of finding means of overcoming those tensions - there is no such hope." (P.13/14).

It is hoped that Cross-Dialectics can offer a 'toe-hold' for new dialogues to begin to take shape. And that more specifically, the seventh stage excites 'unfamiliar ideas' within familiar contexts, and that it does this respecting the process of acculturation. In order to offer some guidance for the reader in this complicated sub-section the following diagram is offered:

This diagram shows the seven stage development of the Cross-Dialectic. First of all each of the seven stages will be summarised into named stages:

(1) develop three theses (call these $1T^1$, $1T^2$, and $1T^3$)

(2) develop three antitheses (call these $2A^1$, $2A^2$, and $2A^3$)

Together (1) and (2) offer three Dialectical-Forms

(3) First thesis of proposition

(4) First antithesis of proposition

Together (3) and (4) offer a Cross-Dialectic

(5) Second thesis of proposition

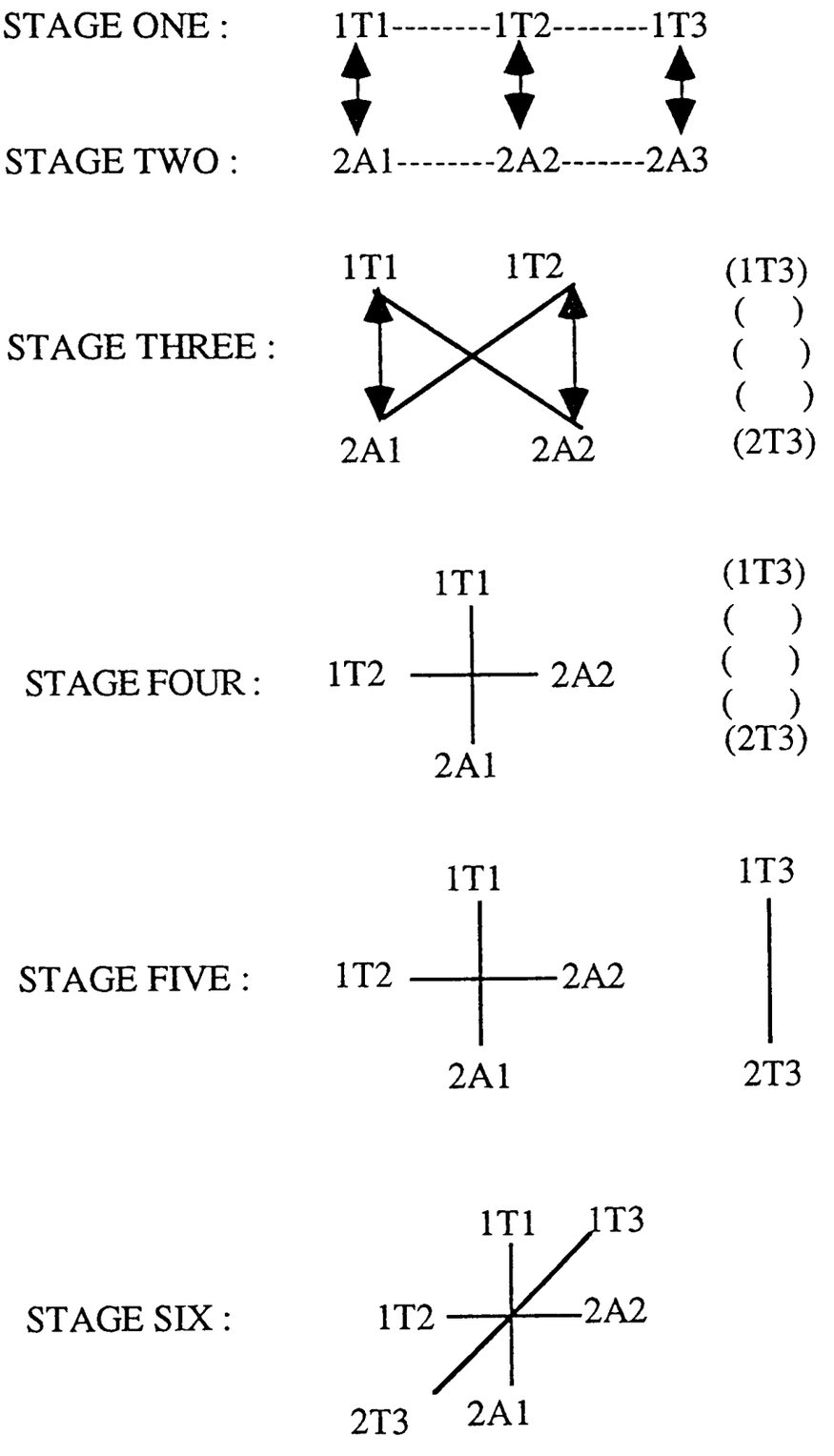
(6) Second antithesis of proposition

Together (5) and (6) offer a Cross-Cross-Dialectic

(7) Question the application of any DF or CD over time

Now we are able to represent this diagrammatically:

Figure 2.1 The seven stage Cross-Dialectic



2.2.3 Cross-Generics

We now are able to move up another level of complexity within the Architecture. Having reached the Dialectical-Forms and then the Cross-Dialectic we are now able to consider the complexities of Cross-Generics. Cross-Generics reside as a temporary completion of a Cross-Dialectic being brought together with another temporarily resolved Cross-Dialectic for the purpose of communication regarding the 'boundaries of classification'.

Cross-Generics assume and develop from the complexity of Cross-Dialectics (CDs). Generics is here used to mean a classification. A Cross-Generics is, therefore (continuing the rationality that developed the Cross-Dialectic), classifications that are in competition for space. An issue raised in one classification (Generic) confronts an issue raised in another classification (Generic): thus causing Cross-Generics. The definition of Cross-Generics (CGs) needs to be extended in order to show its development from CDs.

Classifications define the boundaries of disciplines of thought, in this sense, a discipline can be thought of as a Generical-Form. This notion of a Generical-Form is a direct development from DFs and registers as a requirement for structural consistency. Structural consistency exists between Cross-Generics and Cross-Dialectics because of the 'competition for space'; and between

Cross-Generics and Dialectical-Forms because of the notion of 'Generical-Form' as discipline. Let us now further develop this idea of a Cross-Generic, and end this sub-section with a clarifying example.

Having reached the third level of the four Epistemological levels: Cross-Generics, the aim now is to gradually build upon the ideas of the previous sections. The first section introduced the idea of Dialectical-Forms offering some important considerations regarding the make-up of knowledge networks. The second section introduced the idea of Cross-Dialectics in an attempt to extend the Dialectical-Forms into competing areas of discourse: when and where the Dialectical-Forms met. We shall now extend the Dialectic-Form issue based phenomena (such as self-body; fact-fiction) to generically based phenomena, by extending the Dialectical-Form to the Generical-Form.

Firstly, however, it is necessary to define what is meant by 'Cross-Generics'. The adjective 'generic' derives from two main sources (Chambers 20th Century Dictionary): a Latin 'genus', or 'generis' meaning 'birth'; and a Greek 'genos', meaning 'class'. The preference in our Architectural studies is for the latter derivation, 'generics' will, therefore, stand for a 'class' or 'type' of theory. The notion of a 'Generical-Form' serves to clarify the nature of the employment of the words 'genus and 'generic'. A Generical-Form is a class or type of theory. It follows, therefore, that 'Cross-generics' stands for some form of intermediary between two Generical-Forms, or rather, a process involving communication of ideas between two different Generical-Forms. In tune with the previous sub-sections of this chapter, this can be seen as a Cross-Dialectic of Generical-

Forms and a Dialectical-Form between Generical-Forms. The Cross-Dialectic of Generical-Forms acts as the 'competition for space' between the Generical-Forms, as the Generical-Forms communicate across disciplinary boundaries, and this type of communication is motivated by an interest to question the boundaries of the other Generical-Form, and an interest to maintain the boundaries of your own Generical-Form. This combination of offensive and defensive interests serves as the necessary conditions for a powerful Cross-Generic following the ideas of the Cross-Dialectic. The Dialectical-Form between Generical-Forms serves as the necessary nature of oppositional thinking that must exist if a Cross-Generic is permitted to show itself. The first Generical-Form must take up an oppositionary role to the second Generical-Form within the Cross-Generic. This oppositionary role allows for the offensive and defensive interests to be more precisely targeted from form to form. If the first Generical-Form is precisely the opposite to the second Generical-Form then a realistic and thorough challenge can be instigated by either and both Generical-Forms upon the other. Such a challenge is structurally consistent with the nature of the Dialectical-Form. We have shown, firstly what the Cross-Generic is and secondly how this is structurally consistent with the rest of the Architecture (as already discussed). Thirdly, we must clarify these first two points with a clear example of a Cross-Generic.

The clearest example of a Cross-Generic in this thesis as a whole (and consequently will be elaborated upon in many different ways, suffice to say that only an introduction is provided in this chapter) operates between 'science' and

'literature'. The two Generical-Forms are: 'science' and 'literature'. An example of a well-developed Cross-Generics involving these two Generical-Forms is 'Cybernetic Fiction':

> " Cybernetic fiction derives its material, method and imagery as much from the scientific developments of the twentieth century and the philosophical responses to those developments as it does from its literary predecessors." (Porush, 1985, p.45)

The scientific developments begin with Maxwell (in the 1860s), followed by Boltzmann, Weiner (1940s), Ashby (1950s) and more recently with Beer. The literary predecessors include Proust (after Deleuze's analysis), Barthelme, Beckett, and Pynchon. Both Generical-Forms are concerned with the replication of human consciousness around the key notions of *information*, *uncertainty*, and *entropy*. Human consciousness organises informational activities according to the level of variety (entropy) that is randomly generated (uncertainty). The fictional response to the 'cybernetic project' looks to the heightened self-consciousness of the author, the author is seen as a machine (in Calvino's case for example) that recreates itself (following the autopoeisis of Maturana) and recreates the reader. The scientific response is to show (as Weiner did) that human consciousness needs redundancy in order to communicate. This redundancy arrives as 'expectations' and other hermeneutic qualities. Humans can never communicate something 'new', because it would require too much information to be handled by the human agent. Cybernetic scientists and fiction writers both agree that the best way to develop human consciousness is to take it to its limits,

to show it as a 'machine'. The scientists, however, question the fictional approach as lacking the interest and ability to resolve cybernetic problems. And the fiction writers accuse the scientists of wanting to reduce cybernetics to tautologies. As we can see, the potential for a stimulating debate is promised in this Cross-Generic between science and literature within cybernetics. The competition for space (the Cross-Dialectic dimension) is shown as concern for the issue of 'human consciousness'; and the oppositional thinking (the Dialectical-Form dimension) is shown by the competing desires to resolve (the scientific Generical-Form) and to multiply (the literary Generical-Form). We will now finish this section with a consideration of Pluralism, a consideration that will relate all the previous sub-sections of this second structural-side together.

2.2.4 Pluralism

This final sub-section will organise the preceding sub-sections into a coherent Architecture. Coherence is privileged as a communicable form, and is accordingly privileged as a form of pluralism. Pluralism, therefore, can be seen as an organising attitude that enables: Cross-Generics to work across Generical-Forms; Cross-Dialectics to work across Dialectical-Forms; and Dialectical-Forms to work across forms and ideas. Pluralism is the management system of the Architecture. It can observe the three inter-contributary levels (of Dialectical-Forms, Cross-Dialectics, and Cross-Generics) and offer coherent interpretations. These coherent interpretations witness a progression of epistemological developments from the relative simplicity of the Dialectical-Forms to the

inter-disciplinary complexity of the Cross-Generics. As Pluralism respects the complexity at every stage it is able to re-interpret the complexity at any level to other levels. In this sense, these interpretations subsequently become the informed possibilities for the first level (the Dialectical-Forms) showing the iterative nature of the Architecture, from Pluralism back to Dialectical-Forms. This, however, must be classified as a processural matter, and accordingly becomes the responsibility of the second chapter. Our concern in this chapter is with the structural longevity of the Architecture as it manifests itself as structural consistency. The iterative nature of the Architecture shows that one form of the Architecture is consistent with another form of the Architecture. A Pluralism of Architectural forms. This notion of Pluralism develops as the 'organising attitude' senses the opportunity to change the direction of any of the levels at any time. For example, the organising attitude of Pluralism may find it necessary to change the priorities at any of the levels, changing the number of dimensions in the Cross-Dialectic from three to four for example. The reasons for such a change must be in agreement with the structural consistency of the Architecture: there must always be consistency within and between the levels, ensuring overall consistency. This logic of structural consistency is essential for the effectiveness of the Architecture when dealing with epistemological issues. And it is the task of pluralism to ensure that overall structural consistency is maintained (subsequent challenges to this structural consistency develop in the second stage of this thesis as an *Acuity* of Critical Systems Thinking).

This final section brings Dialectical-Forms, Cross-Dialectics, and Cross-Generics into a debate concerning Pluralism. Pluralism is a common word with many uncommon meanings. Meanings stretch from pluralism as 'the United

States of America's foreign policy', to pluralism as 'anti-Dogmatism'. It is all too easy to get caught up in dogmatic assertions of how not to be dogmatic, notions of always asserting the value of one way of thinking over another way of thinking; regardless of what the value is called, the dogmatic assertion of its worth leads to a dogmatic value. In this sense, therefore, it seems necessary to define pluralism for the purpose of this paper in a manner that recognises the power of dogmatism. It is recognised that Pluralism combines dogmatism and ideology (In Royston Pike's *Encyclopaedia of Religion and Religions*, the definition of dogma is not merely

> "a belief, but an explicit, public declaration of belief that has a binding force on a community of believers" (Mitchell, 1986, p. 496).

Dogma is not tyrannical. Dogma is something that we all must use if we wish to believe and make that belief explicit, and join with others in that belief.

> "Ideology, by contrast, is inexplicit, largely unconscious and rarely avowed". (Mitchell, 1986, p. 498)),

but it is also recognised that tolerance must face dogmatism and that without ideologies there would be no power of discourse or discourse of power (see Foucault (1980)). On one side we have 'dogmatism' and the other we have 'ideology': dogmatism is explicit, ideology is implicit. Ideology can prevent interpretations from forming, but in doing so merely generates a 'surplus' of interpretations (interpretations that develop because of the need to understand

why certain interpretations are prevented). Dogmatism attempts to isolate an interpretation, but is unable to do this because of its implicit ideology (a belief may be made public, but not all of the belief can 'escape' the ideology; the explicit dogma always retains an implicit ideology). Pluralism accepts this relationship between ideology and dogmatism, and consequently presents ideas that seek to understand their own ideologies. This attempt at comprehension stands as a rebuke to any notion of 'self-justification'. Accordingly, this simple definition of Pluralism seems a good place to start:

> "Theoretical work ought to show how and why no one class of scholars, and no one subject (including theory) is self-justifying, self explanatory, and self sustaining." (Bleich, 1986, p.411)

This quote, in its direct simplicity relates well to the overall structural consistency of the Architecture. Bleich's quote demonstrates how Cross-Generics works within pluralism (no one subject referring to the necessary bringing together of different and opposing disciplines), how Cross-Dialectics operate (not self-sustaining, referring to the mutual opposition of competing Dialectical-Forms), and how Dialectical-Forms (not self-justifying, not self-explanatory, referring to the operation within the Dialectical-Form that dispells coherent notions of 'self' and replaces it with notions of 'competitive opposites') contribute. Pluralism shows how Cross-Generics can bring subjects of study to discuss within a framework of Cross-Dialectics and by using a dialectical methodology. For pluralism to operate upon a dialectical basis, it allows the self (as in 'self-justifying') to always be seen as non-solitary, and,

therefore, to avoid the Isolationist's self-justification. The notion of 'competitive opposites' resists any justification of the self, to justify the 'self' is to ignore the supremacy of the 'other' as a competitive opposite. To ignore the 'other' is to fall into an isolationist's trap of self-justification. It must be the case that any theory justifies itself according to the demands of 'external' theories, and that these 'external' theories cannot escape the rigours of justification (just as the rigours of justification itself cannot escape them). In this respect, Pluralism recognises the eternal displacement of the 'self' onto the 'other'. This displacement makes 'self'-justification (and thereby isolationism) untenable. This displacement is structurally consistent if we recognise the supremacy of the 'other' (displacement becomes the main concern of the second stage).

Within this general introduction to pluralism, it is insightful to briefly consider pluralism's relationship to relativism. To escape calls of relativism is to show that a dogma exists within a pluralistic framework (dogma, here being used in the sense explained above: dogma as explicit enunciation. To explicitly enunciate is to call for a position above another position). The Cross-Dialectics framework can be used to review the 'pluralism as relativism' misconception. (Relativism seeing any interpretation as good as any other and therefore espousing self-justification, as any interpretation justifies itself, ie. the opposite of Dialectical-Forms and Cross-Dialectics). Cross-Dialectics at the fifth stage (see Figure 2.1) proposes a three-dimensional hierarchy composed of competing dialectics (this then comes into fruition in the sixth stage). The more powerful dialectics offer themselves for discourse, in the sense that any interpretation of Cross-Dialectics at stage six will be dominated by a broad Nietzschean 'will to power'. This power of the dialectic is not a relativistic notion, but a notion of

the differentiation of power, a differentiation that shows itself in privileging determinacy over indeterminacy, totality over fragmentation, pluralism over relativism. The 'will to power' calls forth form, and that form in this case is the structural consistency of the Architecture. The 'will to power' is that dogma which explicitly shapes the Architecture in the fourth epistemological level.

In discussing 'will to power' as this dogma of pluralism we must relate it to a more general discussion of Architectural 'indeterminacies'. Issues such as interdeterminacy and fragmentation comprise the first two examples of Hassan's (1986) Catena of postmodern "indeterminacies" (indeterminacy lodged in immanence). In order to finish this section's treatment of Pluralism, it may be useful to look at two examples of Hassan's Catena: Hybridization, and Irony (see the second stage for a more extensive treatment of this word and its consequences for Systems Thinking). Hybridization as defined by Hassan is a 'mutant replication of genres' which de-defines and deforms cultural genres allowing equivocal modes of literal representation (restricting 'literal' here to 'use of words to organise the Architecture'). Hybridization in this sense is very loosely related to a Cross-Generics that extends to give a different concept of 'tradition' within the general framework of Pluralism:

> "...continuity and discontinuity, high and low culture, mingle not to imitate but to expand the past in the present. In that plural present, all styles are dialectically available in an interplay between the Now and the Not Now, the Same and the Other." (Hassan, 1986, p.506)

Hybridization as a dialectic of historical elements (following Heidegger's equitemporality), is an important concept within pluralism. Historical elements command historical significance, and the notions of 'dogma' and 'ideology' within pluralism enable an exacting study.

The second example in Hassan's Catena is irony. Irony is created when and where paradigmatic boundaries are not strict enough (this strictness being the interest of questioning for one of the Generical-Forms in the Cross-Generics). Irony is turned to in the absense of a 'cardinal paradigm' (in the form of dialogue, play, self-reflection), irony assumes multivalency and indeterminacy (as a seventh stage Cross-Dialectics) and aspires toward the clarity of absence. This is an absence that is created through a lack of a 'cardinal paradigm' (a distinct pattern of terminological consistency), a lack of valency (syntactical relationship between verb and dependents), and a lack of determinancy (comprehensive, logically consistent system of causal laws). The clarity of absense is needed to document the absense and to offer possibilities to complement the absence (for example, through Derrida's notion of differance). The clarity of absense starts by suggesting that:

> "The concept of centred structure is in fact the concept of a play based on a fundamental ground, a play constituted on the basis of a fundamental immobility and a reassuring certitude, which itself is beyond the reach of play." (Derrida, 1978, p.279)

If there is no centre (ie that cannot be reached by play) then, there is no centre in present being, it is not fixed. If the centre is not fixed, there will be infinite sign substitutions, and language invades the universal problematic. Infinite sign substitutions that continually reach the centre of discourse when simultaneously realising that there is no centre, and this desire for signs to reach the centre explains their infinite attempt at substitution (of whatever existed previously). Everything becomes discourse, a play on words, an infinite play (Derrida, 1978). This is the challenge to a pluralism that seeks determinacy, accuracy, and structural consistency. (This challenge becomes more exacting in the second stage). For the Architecture to meet this challenge it must recognise its severity. This recognition is accorded in all levels of the Architecture (as highlighted in this sub-section), and yet the Architecture maintains a structural consistency throughout. This is the operation of the fourth epistemological level, Pluralism, within the Architecture.

2.2.5 The second structural side

The second structural side has now been presented. The progress from Dialectical-Forms to Cross-Dialectics to Cross-Generics to Pluralism has been highlighted, and its structural consistency commented on. This sub-section provides a summary of this progress and the consequential structural consistency.

In order to summarise effectively the second side is shown as a tabulation, and the important words are highlighted within it (see Table 2.3).

Dialectical-Forms are based upon an understandable (the Platonic intelligible) tension (the Hegelian Dialectic) through oppositional thinking (providing different notions of 'dialectic', other than the Platonic and Hegelian). Cross-Dialectics is a seven stage development (three Dialectical-Forms being Crossed in two propositions) as a competition for space (the three Dialectical-Forms represent the three spatial dimensions) that includes a temporal dimension (the fourth dimension as recognising the 'time scale' of competing Dialectical-Forms). Cross-Generics advocates oppositional thinking as Generical-Forms (from the Dialectical-Forms), when these classifications compete for space (from the Cross-Dialectics). Pluralism is seen as an organising attitude that disallows no one subject (organising Cross-Generics in its inter-disciplinary (inter-subjective) role) to be self-sustaining (organising Cross-Dialectics in its three dimensionally sustained framework) or self-jus-

tifying (organising Dialectical-Forms to replace the notion of 'self' with the notion of 'competitive opposites' with an understandable tension). This is the second structural side to the Architecture of Critical Systems Thinking.

Table 2.3 The second structural side

Epistemological Levels
Dialectical-Forms (understandable tension through oppositional thinking)
Cross-Dialectics (seven stage development as a competition for space : three dimensional plus temporal)
Cross-Generics (Generical-Forms as oppositional thinking, classifications in a competition for space)
Pluralism (An organising attitude : disallowing no 'one subject' (CG) no 'self-sustaining subject' (CD) and no 'self-justifying subject' (DF))

2.3 THE INTER-RELATIONSHIP OF 2.1 AND 2.2: THE ARCHITECTURE

This final section will inter-relate sections 2.1 and 2.2 in producing the Architecture of Critical Systems Thinking. Section 2.1 is the first structural side: the main debates in Critical Systems Thinking. Section 2.2 is the second structural side: the four epistemological levels. In combining these two structural sides the structure of the Architecture is revealed. The three main debates combine with the four epistemological levels to give twelve cells. This section will describe these cells and consider how these cells are structured.

Table 2.4 below shows the Architecture as the combination of the two structural sides. The twelve cells are the effect of this combination. The twelve cells are (from top left to bottom right):

(i) Dialectical-Forms - Margins

(ii) Dialectical-Forms - Fiction

(iii) Dialectical-Forms - Will

(iv) Cross-Dialectics - Margins

(v) Cross-Dialectics - Fiction

(vi) Cross-Dialectics - Will

(vii) Cross-Generics - Margins

(viii) Cross-Generics - Fiction

(ix) Cross-Generics - Will

(x) Pluralism - Margins

(xi) Pluralism - Fiction

(xii) Pluralism - Will

The three debates act as 'domains of activity' for the four epistemological levels. For example, Cross-Dialectics - Fiction will look at 'fictional debates' within Critical Systems Thinking and apply the seven stage process. There exist (at least) four interpretations within each debate, these interpretations are comparable by using the Architecture to simply compare cells.

Each of these twelve cells is structured according to the structure of the constitutive structural sides. Structured in the sense of 'orientation' to a particular issue. The orientation refers to the epistemological level as seen through whatever debate is applied to it. For example, the orientation of the Pluralism - Margins cell will orientate Pluralism to be responsive to the temporal and structural scales of intellectual debate (see sub-section 2.1.1 for clarification of these phrases).

There exist similarities in the progression of each structural side. The progression of Margins to Will saw a 'response to intellectual debate initiated' (Margins); an 'example of a marginalised debate' (Fiction); and the 'interests behind marginalised debates' (Will). This progression can be clarified by the following series: initiation; example; motivation. We can now compare this progression to the second structural side. We saw: 'understandable tension' (Dialectical-Forms); 'temporalised three dimensions of understandable tension'

(Cross-Dialectic); 'Classification of these dimensions' (Cross-Generics); and 'Organising attitude' (Pluralism). This second progression can be clarified by the following series: initiation; sophistication; classification; organisation. Similarities exist. An initiation is required and given in both structural sides. Where we see 'example' we see 'sophistication' and 'classification'. An example helps to clarify in classifying (in this case the classification is 'fiction') and making the initiation more sophisticated (in this case the marginal debate becomes more sophisticated in its fictional exemplification). Where we finish with 'motivation' we finish with 'organisation'. The motivation to develop Pluralism is given in its desire to deal with more complexity through more highly organised means. In this very rudimentary manner we can begin to show how the two structural sides progress in similar ways. This progression will be further highlighted in chapters three (the 'progression as process', as opposed to 'progression as structure' as shown in this chapter) and four (where the contents of the cells will be dealt with).

This brief section comes to an end after its description of each cell and its consideration of the structure of each cell. The constitutive structures of the previous two sections has allowed for a brief concluding section which serves to introduce the Architecture in preparation for the following chapters.

Table 2.4 The Architecture of Critical Systems Thinking

Debates Epistemological levels	Margins (M)	Fiction (F)	Will (W)
Dialectical-Forms (DF)	(DF-M)	(DF-F)	(DF-W)
Cross-Dialectics (CD)	(CD-M)	(CD-F)	(CD-W)
Cross-Generics (CG)	(CG-M)	(CG-F)	(CG-W)
Pluralism (P)	(P-M)	(P-F)	(P-W)

CHAPTER THREE: PROCESS

INTRODUCTION

In uncovering two dimensions to the Architecture of Critical Systems Thinking (structural longevity and relational modification), it becomes the task of this chapter to concentrate upon the second dimension: relational modification. Chapter two developed the notion of structural longevity, and this chapter now exists as a physical support for following chapters. The structural longevity can be seen in the Architecture with its two structural sides and twelve cells. Relational modification cannot *itself* be seen, it can only be seen as it relates to the structural longevity of the Architecture. Relational modification is the approach that generates utility from the Architecture. Relational modification gives meaning to the Architecture.

Relational modification becomes the process of the Architecture. At a generalised level the process of the Architecture operates across from the four epistemological levels to the three positions. The epistemological levels open up the three positions for critical analysis starting from the relative simplicity of the Dialectical-Forms and resting with the enhanced complexity of Pluralism. Each epistemological critique proceeds up through the structural hierarchy by understanding and using the previous critique(s). This process of continued

understanding of previous epistemological critiques is essential, since it is synonymous with the requirement for structural consistency. And, in fact, here we can see a clear relationship between chapters 2 and 3. Chapter 2 demands *structural consistency*. Chapter 3 demands *continued understanding*. These prescriptions evidence the symbiotic nature of the relationship between the two chapters. It is essential, therefore, to read these two chapters as if they are complements to each other. To read only one of the chapters is insufficient to merit an understanding of the complexity of the Architecture.

The process of continued understanding must be critical because it complements the structural critique. It is this critical process that is the interest of chapter 3. An interest that needs to be clearly stated from the beginning in order to complement the structural complexity (as shown in chapter 2) of the Architecture. A process that depends upon a high level of structural consistency in order to make sense of the three positions. The three positions being: 'Margins'; 'Fiction'; and 'Will'.

The process of critique flows from top left to bottom right. Each position constitutes each process. The critique flows from the Dialectical-Forms to Pluralism, this flow aids comprehension of each position. The flow is primarily vertical, thereby sustaining the structural consistency of chapter 2. There are, however, possibilities for secondary horizontal flows across positions. Such flows can be used to compare the effects of the vertical critique upon each of the three positions. This combination of vertical and horizontal flows is necessary in order to understand firstly the positions themselves, and secondly the relationships between positions. The nature of relational modification acts in such a

combination of the vertical and horizontal flows, a combination that becomes the process of the Architecture. The flows can be seen in this way: the vertical flow (in following the structural consistency of the Architecture) offers a detailed understanding of the particular position adopted; while, the horizontal flow (in supplementing and ensuring the structural consistency of the Architecture) offers an understanding of the processes as they critique each position. It is this combination of vertical and horizontal flows that ensures *continued understanding* throughout the Architecture.

This third chapter has three sections: 3.1, 3.2, and 3.3. Section 3.1 focuses on the primary flow of the Architecture, the vertical flow from Dialectical-Forms to Pluralism. Section 3.2 focuses on the secondary flow of the Architecture, the horizontal flow from Margins to Will. Section 3.3 focuses on the combination of these two flows as they manifest themselves as the main theme of this chapter: the demand for *continued understanding*.

3.1: THE VERTICAL FLOW

The primary flow of the Architecture is from Dialectical-Forms to Pluralism. There exist three primary flows, existing as exemplifications of this flow. These three exemplifications are Margins, Fiction and Will. However, these exemplifications can only be reached by the horizontal flow, which follows in section 3.2. The relationship between the exemplifications, therefore, can be seen as secondary to the primary flow. The primary flow gives a detailed understanding

of each debate as it passes from the Dialectical-Forms to the Cross-Dialectics to the Cross-Generics to Pluralism. The primary flow exists to understand each debate according to the issues raised by the second structural side. This flow is shown below in table 3.1 .

As we can see from the table, there are three primary flows. The Margins primary flow, the Fiction primary flow, and the Will primary flow. Each of these primary flows seeks to detail an understanding according to its context. Three contexts give three detailed understandings. In each of the three contexts the beginning is to be found in the Dialectical-Forms. The large 'arrows' represent the 'end' of each flow. In each of the three contexts the end is in Pluralism. As mentioned above, the connection between these three primary flows is supplied by the secondary horizontal flow.

3.1.1 Marginal vertical flows

The primary flow sustains the power of the Architecture through its detailed understanding of every position within the highlighted debate. Taking the marginal debate as an example, the primary flow adheres to the structural consistency, and through this consistency lies the incidence of power. The relationship between the primary flow and the structural consistency lies in this ability to achieve a detailed understanding of every position. The marginal debate applies to the epistemological levels in succession, the process carries the meanings of all relevant understandings forward to all positions. Meanings

change according to context, the marginal context pervades the first primary flow such that all conceptions of the epistemological levels are seen through a marginal context: the primary flow dictates the process of understanding but this process of understanding is meaningless without the dictates of the marginal context. These dictates have been given a marginalised meaning that appeals to the structure portrayed in the first chapter. This meaning responds to the structural and temporal scales of any intellectual debate, giving meaning to the Architecture through its ability to proceed from Dialectical-Forms through to Pluralism. The meaning of 'margins' as it appeals to these epistemological levels in the primary flow gives a context for each level. Dialectical-Forms is given a context of 'Margins' opposed to 'Core'. Cross-Dialectics details the complexity of the Dialectical-Forms, by giving meaning to the words 'margins' and 'core'. The development of meaning continues in Cross-Generics where 'Margins' and 'Core' are classified (usually the case that classifications already exist, and that it becomes the task of Cross-Generics to uncover these classifications, for example, Keat and Urry's (1975) classifications of 'functionalism' and 'structuralism' as pre-existing classifications that await further developments) as competing disciplines of thought (to give a Systems Thinking example: Jackson's (1991) Hard Systems Thinking 'core' and other (soft and critical) Systems Thinking 'margin'). Pluralism then treats margins to a plurality of meanings through its organisation of the three preceding contexts. Such organisation results in another meaning of margins, a meaning that gives margins particular 'ends' to particular discourses. 'Ends' that become understandable throughout the entire marginal discourse, where the ends are given by the 'applicability of certain Dialectical-Forms' or 'the accountability of certain Generical-Forms' in the levels themselves. But once we reach the fourth level,

we then begin to organise and recognise those ends. Those ends become significant, those ends are attributable to meaning. A Dialectical-Form has a meaning (in its understanding of marginalisation). In a similar manner, a Cross-Dialectic has a meaning. Pluralism sees these meanings and organises them as if in a marginalised context (responding to the structural and temporal scales). The primary flow offers this meaning to the reader in the first context, a detailed meaning that is structurally consistent (obeying the logic of the first chapter) and marginal in orientation.

3.1.2 Fictional vertical flows

The primary flow is now given a second context: the fictional context. The fictional context is an example of the marginal context. The fictional context, brings fact to fiction and fiction to fact with the Dialectical-Form. The Dialectical-Form is given a fictional meaning, the primary process produces this fictional meaning. The Dialectical-Form is to be questioned as to its significance, its correspondence to the 'real and factual' world, its general factual position. The Dialectical-Form is driven by this fictional meaning, firstly to aid understanding of the Fact-Fiction debate, and secondly, as it is caught within the relational modificating position of the Architectural process, it is forced to show its factual existence. Forced to do this, the structural longevity of the first chapter is re-presented, in that structural longevity is seen as an appeal to the factuality of our Architectural representations. This potential is then questioned according to the debates that the Dialectical-Forms uncover. This action within the second

context of the primary flow is evidence of the level of seriousness that the Architecture wishes to attain. The meaning is taken seriously, and the incidence of fiction is taken seriously.

The Cross-Dialectic goes through a similar process. Its 'reality' is tested by the Dialectical-Forms that constitute it. Tested according to the Dialectical-Forms that are organised into a working framework by the Cross-Dialectic itself. This action shows the level of detailed understanding of each position. The detail is such that the epistemological levels are involved within the debate. The relational modification of this chapter seeks to question the on-going relationships that exist between the epistemological levels and the main debates. The epistemological levels modify upon impact with the debates, where, in the fictional case the turn towards reality as a fictional creation comes to the fore in a Cross-Dialectical fashion. The Cross-Dialectic is raised as an entity, with dimensions, with relevance to methodological thinking, applications are sought, strengths and weaknesses are witnessed according to various theoretical positions, and the outcome of this process is a questioning at every stage of 'fact-finding', where every stage corresponds to a dimension within the Cross-Dialectic of Fiction itself. This correspondence is shown as the 'means to question the fictionality of the Cross-Dialectic'. This is Relational modification as applied within the second primary flow. The Cross-Dialectic means something different than it did before this modification. The modification has produced another meaning, a fictional meaning.

Classifications of 'fiction' and 'fact' are shown. Each classification is looked at from each other's position: fact looks at fiction, fiction looks at fact. It is the

nature of classifications that enables them to appear different from other classifications, and it is this process of classification that necessarily becomes the interest of this vertical flow. These classifications are then brought together for the means of Cross-Generics. Meanings are confirmed and de-confirmed, questioned and defended. Relational modification begins with 'Cross-Generic' as a 'fact' within the prescriptions of the Architecture. This factual beginning becomes a fictional interpretation as the Cross-Generic is taken through all the elements of its construction that are taken 'seriously' by the reader and the writer (examples here are the 'seriousness' of current working practices, current renumeration schemes, current organisational decision-making procedures), where each example can be seen as an organisational (deliberately a generical word for a Generical-Form) construction. These constructions are related to the 'fact-fiction' classifications, and Cross-Generics becomes involved within the general dialogue. Relational modification along fictional lines occurs with Cross-Generics as it continually prepares itself to question the 'fictional' nature of 'factual' constructions.

Pluralism considers all these relational modifications and offers a meaning to the fictional discourse that has arisen. Pluralism acting here as an organising attitude that produces meaning in a fictional context through the operations of the three previous epistemological levels. Pluralism calls an 'end' to these previous relationships that modified the three previous epistemological levels. This end secures a composite meaning to the whole Architecture with reference to the debate concerning fiction. This meaning then may proceed in an iterative manner to further enunciations upon the epistemological levels, the iterative approach that will be the interest of section 3.3.

3.1.3 Willed vertical flows

Dialectical-Forms call upon epistemological notions that enable an understandable tension to be exercised between two terms. Those epistemological notions could be exemplified by 'will to power' and 'will to know' (After Nietzsche (1924) and further considered by Foucault (1980)). 'Will to power' is the more negative explanation of marginal knowledges, while 'will to know' can be seen as the more positive explanation. The negative explanation emphasises the epistemological categorisation of power in dictating knowledge statements and networks. The positive explanation emphasises the overwhelming desire to know about our world as an epistemological categorisation. These two categorisations in their mutual opposition offer themselves for dialectical consideration. The dialogue within such a Dialectical-Form is never exhausted (for the very simple reason that 'exhaustion' is promoted by 'will to power' in others, and that 'to be exhausted' is to fail to respond to the 'will to power', and as 'will to know' knows this paradox of being at once promoted and ignored, it is able to create and sustain an understandable tension within the Dialectical-Form) as it continues by challenging the motivation of the Dialectical-Form. How are the Dialectical-Forms willed into a recognisable form? The 'will to power' of the Dialectical-Forms shall modify its relation with the debate concerning will by entering into the debate concerning its 'will to know'. The means to organise a Dialectical-Form has a 'will' in these two forms, as without a 'will' a recognisable form would be an impossibility (here the will creates the form in making it

recognisable, or distinguishable from existing forms). We must seek to understand this will through the Dialectical-Forms that the Dialectical-Forms have created. Relational modification shall never cease in this case.

The relational modification of Cross-Dialectics is an enhanced questioning of its motivation to be represented as an epistemological device for debate formulation. What is its motivation? Why does it wish to formulate such a debate? To question the 'will' of the Cross-Dialectic is to modify its relationship within the Architecture, to give the Cross-Dialectic a 'will' context. The will is that which cannot be identified, but only seen through a structural effect (for example as current organisational practices). To question the will of the Cross-Dialectic is to seek out its structural determinants. The effects of which are the seven stages and the four dimensions (see figure 2.1). The will to compose such an edifice is the will to control the four dimensions through a detailed understanding. To witness this is to witness the beginning of the process of the primary flow in its third context as referred to in the Cross-Dialectic.

Classifications of 'determinism' and 'free will' surface as examples within the primary flow. The flow then turns to the means that classified these examples and begins with: Explain the grouping of these two classifications? Why is there a will to group in this manner? When does a class exist and when does it cease to exist? Such questions seek an interpretation of the will that brought Cross-Generics to be an epistemological device. This interpretation relates to the structural consistency of the first chapter, and the construction of the Cross-Generic cannot escape this in any probing of the derivation of the will that created it. The Cross-Generic conforms to the logic of this structural consistency

(through the continuations from Dialectical-Forms and Cross-Dialectics) and it must be a component of the will that created it. Classifications are seen as vitally important in a society that privileges the 'boundary' over the 'content' (a fine example here being the 'legal boundaries' that dictate the content of actions as either legal or illegal). This privilege surfaces as one interpretation of the will that created Cross-Generics. This process of surfacing modifies the relationship that Cross-Generics has within the Architecture, as it at once clarifies the relationship with it and distorts the relationship with it (clarification needs distortion in order to lift 'that which is being clarified' away from 'that which is not being clarified', as to clarify is to clarify one thing at the expense of another thing, and as one cannot clarify in any other way one is forced to distort the relationship that exists between 'that which is being clarified' and 'that which is not being clarified'). This clarifying act is the relational modification of the Cross-Generic, explaining relational modification to the rest of the Architecture.

The Pluralism concerning 'will' attempts to organise that which passes before it. This 'will' is a well-centred will to power. To organise is to place into a convenient organic whole, with organs that supply from within. Pluralism is that organic whole as it responds to the need to be organised. Pluralism is recursive in the manner in which it allows wholes to form within wholes. These wholes are seen as ends within the three preceding epistemological levels. These wholes show how the 'will debate' has processurally modified the relationship between the epistemological levels and the Architecture. To understand how the Architecture responds to relational modification is to understand the existence of these wholes within the Architecture. The primary flow details this understanding. This flow is shown below.

Table 3.1 The three vertical flows

Debates Epistemological levels	Margins	Fiction	Will
Dialectical-Forms			
Cross-Dialectics			
Cross-Generics			
Pluralism			

3.2: THE HORIZONTAL FLOW

The secondary flow exists from Margins to Will. The secondary flow is the horizontal flow. It is a flow with four exemplifications: Dialectically-Formed; Cross-Dialectical; Cross-Generical; and Pluralistic. This flow proceeds by attempting to understand the primary process. This understanding comes as critique, critique to maintain the Architecture as a means to continually understand, and to understand by structural consistency. The horizontal flow is sec-

ondary to the vertical flow because it supports its role, the horizontal flow is only able to compare debates, debates that have developed from the Dialectically-Formed to the Pluralistic. The horizontal flow offers a perspective to compare these developments as they show themselves in three exemplifications. This flow can be seen in the table below, Table 3.2.

As we can see, there are four examples of the horizontal flow. They are: Dialectically-Formed; Cross-Dialectical; Cross-Generical; and Pluralistic. Each example challenges the primary flow in different ways. The Dialectically-Formed preferring competitive opposites, while the Pluralistic prefers to organise these challenges (from the three preceding exemplifications of the horizontal flow) into a more competent force. The beginning of the flow is with 'margins', and the end of the flow is with 'will' (where the end of the flow is again represented by arrows). We shall now consider the four examples of the horizontal flow in succession.

3.2.1 Dialectically-Formed horizontal flows

In relating to the primary flow, this secondary flow crosses the three main debates. As the primary flow relates to each debate the epistemological level is relationally modified, now the secondary flow relates to the epistemological levels and it is the debates that will be relationally modified. Relational modification shall be managed through a Dialectical-Form. The debate will modify according to the interests of the Dialectical-Form. As the marginal debates represent those debates that respond to the structural and temporal scales, then we must dialectically oppose these debates with debates that fail to respond to these two scales. Those that fail to respond are called 'core' debates. The marginal debates will be understood using the core debates. To do this is to understand the primary flow, as the primary flow modified the epistemological levels according to the interests of the main debates. We must now understand the interests of the main debates through utilisation of the epistemological levels. Responsiveness across two Dialectical-Forms surfaces as a first epistemological level understanding. To respond to intellectual debates in a variety of manners serves to relate 'margins' to 'core'. The core arguments serve previous core arguments, and by definition, they must be responsive to the historical conditions that sustain those previous core arguments. In dialectical contrast, marginal arguments respond to the most recent developments in any discipline (for example, the development of Critical Theory within Systems Theory), they respond to the features that change the nature of core arguments. This secondary flow serves to understand the primary flow by questioning its scope.

Fiction becomes its other in Dialectical-Forms. It becomes fact. Fact challenges fiction by questioning the scope of fiction. Fact stands as the ability to repeat. Facts are repeatable, they are not temporarily determined, facts can be demonstrated at any time (with obvious consideration to the factors which give rise to this fact, for example, the fact that I am writing this can be repeated: the fact that I am writing this can be repeated ...). Facts can be isolated. Fact derives from the Latin *facêre* 'to do'. To do something is to show an ability to isolate that something. To do something is to resolve by action. To talk of an action is to make that act factual. Fiction by dialectical contrast is not repeatable, fiction is temporarily determined, fiction cannot be demonstrated only understood within the act of 'separating worlds'. By separating worlds, there must be a recognition that the fictional world is not the world that others agree with, since fictional worlds are created in isolation by creative minds. Their act of creation is possible because they differentiate worlds (the world that 'is' and the world that they promote). The act of creation is, therefore, built upon lack of agreement. To create a world in fictional terms is to show its temporal determination (temporary because of the exact conditions that led to the fictional creation). The Dialectical-Form draws the Fact to the Fiction, questioning the primary process, and thereby demanding continued understanding.

Will as a Dialectical-Form in the secondary flow exemplifies as 'free will' and 'determinism'. The will is either 'free to decide' or 'has no options'. The notion of will as given in the first structural side is shown as 'will to power' as an ability to consider questions of 'power' and its relationship with 'knowledge'. Does will to power observe the dialectical constraints of the 'free will' / 'determinism' debate? It must if it is to be considered as dialectically operational.

And by dialectically operational it is then potent within the Architecture. The secondary flow tests the applicability of each debate to the mechanisms of the Architecture.

3.2.2 Cross-Dialectical horizontal flows

The applicability of the three main debates now takes on a four dimensional appearance. To question the applicability of the margins debate is to question by using the primary flow (an understanding of the primary flow is implicitly assumed in any use). The margins debate questioned the utility of the Cross-Dialectic, now the Cross-Dialectic is used to question the margins debate. The margins debate becomes core in its dialectical opposite, this can be crossed with the hard systems thinking / soft systems thinking Dialectical-Form (see Checkland, 1975), and to complete the three spatial dimensions a modernity / postmodernity (with its application to systems thinking) Dialectical-Form can be applied. The Cross-Dialectic questions the potential for the 'margins' debate in its attempt to instigate debate across these three dialogical dimensions. If sufficient debate is raised (and by being 'sufficient' is being able to satiate the intellectual appetites of theorists within a certain community or discipline at a certain time) then the margins debate can be seen as relevant to the concerns of the Architecture.

Fiction follows a similar four dimensional investigation. Three dimensions are developed using the primary flow plus the temporal dimension. Such dimensions could be: Fact / Fiction; novel / analysis; and resolution / proliferation (it must be stressed here that examples are offered only to enhance an understanding of the potential for an Architecture of CST, as further examples can be developed by further understandings). Each of these three Dialectical-Forms suggests a re-working of the fact/fiction dialectic. The first is the clearest. The second looks at the 'output' from both of the working forms (an analysis being a well structured argument that posits and affirms a main hypothesis), the novel as fiction, the analysis as fact. The third looks at the treatment of complexity, fact wishes to resolve and thereby reduce complexity, fiction wishes to create complexity and thereby proliferate complexity. These three Dialectical-Forms when crossed raise common issues, issues of concern for all systems thinkers. If however, these issues fail to instigate a debate, fail to respond to any polemic, then 'fiction' fails to be operational within the Architecture, and the search for a further 'debate' continues. (It must be noted that the first and secondary flows inform each other at different times, therefore, the search for further debates is always an Architectural concern).

Will as a Cross-Dialectic must also appeal to systems thinkers. Issues within a verification of 'will' as a viable prospect for Architectural study could be: will to power - will to know; Foucaulvian notions of power - Habermasian notions of power; and power - knowledge. All three of these Dialectical-Forms employ notions of will beginning and determined by the fundamental will to power. The relevance of this concept to the systems community is partially established (through the writings of Flood (1990a)) and therefore, the prospects

for Architectural relevance look promising (see also Midgley (1992) for a revealing study of power). The secondary flow has highlighted this promise in the primary flow in its understanding of the 'Architecture as process'.

3.2.3 Cross-Generical horizontal flows

The Cross-Generics of 'margins' in the secondary flow looks to the applicability of the marginal debate to the Architecture in a disciplinary fashion. Disciplines that correspond to the 'margins/core' debate could be, as an example, Systems thinking / Management science. Management science is the core discipline in Management theory, Systems thinking exists as a marginal discipline. Systems thinking exists as responsive to the structural and temporal scales, while Management science is more responsive to the conservation of Management science. Management science has developed as the 'logical way to solve management problems', and the interests of management science seek to increase the use of 'logic' (as a one-dimensional tool) within managerial problem contexts. Again, we can begin to see the relevance of margins in the Cross-Generical guise to the Architecture. This relevance supports the value of the primary flow, and thereby reinforces the structural consistency of the Architecture.

Fiction becomes (as an example) Literature and Science in its Cross-Generical guise. The applicability (the choice here of verification relates to the general concerns of integration of useful concepts within the community (in this case the

systems community) at large) of fiction serves to highlight its potential within the Architecture. Literature as a discipline studies, for example, metaphor and analogy. Science studies organic pathologies and physical growth. All four of these studies within these two disciplines are of particular interest to systems thinkers. In fact Flood and Jackson (1991) use metaphor and analogy to consider the incidence of these scientific studies. They uncover the organic metaphor as referring to 'pathologies' within the organisation, and as referring to organisational growth. The potential for fiction in its Cross-Generical guise, therefore, looks promising also.

Cross-Generics questions will to provide two disciplinary classifications, disciplinary classifications that must obey a logic that displays Dialectical-Forms as competitive opposites, and shows Cross-Dialectics as competing for space. A suggestion could be: Psychology and Quantum Mechanics. These are most certainly competitive opposites (in that Psychology (in the Langian sense of the word) centres on the uncertainty of human behaviour, and Quantum Mechanics (in its traditional sense of the word) centres on the certainty of proportional units of energy). Langian Psychology studies the motivations of man through an explicit recognition of 'will to power'. Quantum mechanics builds models that describe the state of man (as proportional quantities) but fail to consider the 'will to power' (precisely because it cannot be quantified). Two opposites showing two different opinions upon the value of 'will to power'. For the will debate to be taken seriously within Systems thinking, it must tackle these extreme positions, thereby showing an ability to relate to the concerns of the huge spectrum of

systems thinkers. If this can be achieved (and it will not be achieved with anything less than the full commitment of systems thinkers) then will can serve as a vital element within the Architecture of Critical Systems Thinking.

3.2.4 Pluralistic horizontal flows

The application of the pluralistic horizontal flows upon the three main debates is the last sub-section. The pluralistic application serves as an organising attitude that organises the three preceding epistemological levels into a competent entity. This competent entity does not allow one subject (by using Cross-Generics) to be self-sustaining (by using Cross-Dialectics) or to be self-justifying (by using Dialectical-Forms) (see chapter two for the introduction of this idea). This competent entity then relates to the three main debates as a secondary flow understanding the primary flow.

Margins is not one 'subject' as it applies to a type of political force that suppresses some potentially radical intellectual activity in favour of a more conservative intellectual activity. The subject is not solitary but applies to a range of intellectual activity. We can suggest, therefore, that Cross-Generics can be applied through Pluralism in a marginal debate, in that Cross-Generics recognises the inability of a subject to act in a solitary manner. Margins is not self-sustaining as it fights to defeat those subjects that claim to be self-sustaining (the core acting to conserve themselves only). Margins fights the core activities. The core activities attempt to separate (again see chapter two for a development of this notion)

themselves from the marginal activities in an attempt to conserve efforts in a unitary dimension. We can realise, therefore, that marginal activity responds to Pluralism in this Cross-Dialectical fashion. Margins is not self-justifying as it responds to the temporal and structural scales. In responding to these scales justification becomes an issue of irrelevance, since to justify (in the sense attached to the notion of self-justification) is to appeal to a set of codes that are atemporal, codes that exist as independent from the notion of self. As margins responds to the temporal scale it does not seek self-justification, and thereby responds to Pluralism as Dialectical-Form in the secondary flow.

Fiction is not one 'subject' as it is a way of organising knowledge. Knowledge can be organised by following fictional 'rules', for example, correct use of irony, metaphor, synecdoche. Fiction is not a unitary subject, but a method of creating different subjects (Literature, criticism of Literature, Poetry). Fiction, therefore, can be applied to the Architecture as it responds to Pluralism as Cross-Generics in the secondary flow. Fiction is not self-sustaining as it creates worlds that are aware of their own limitations, worlds that require other worlds in order to sustain themselves. Fiction responds to the Cross-Dialectical version of Pluralism in the secondary flow, and is therefore able to be considered within the Architecture. Fiction is not self-justifying. Fiction is used in the historio-graphic metafictional sense (see chapter four). This sense implies a fiction that uses history, science and philosophy as serious components within their fiction (fiction does not simply 'spring' from the minds of overly-imaginative authors, rather it seeks to seriously consider historical, scientific, and philosophical

issues). Justification of the fiction surrounds its pluralistic use of ideas from these disciplines. In this sense, Fiction obeys the Pluralism as Dialectical-Form in the secondary flow, and is admitted for further inspection within the Architecture.

Will is not one 'subject' but a motivation behind the desire to monopolise subjects (the will to power surfacing as an imperialistic urge). Will shows its willingness to be considered within a Cross-Generics by its generation of Generical-Forms that respond to this version of Pluralism in the secondary flow. Will is not self-sustaining as it requires the plurality of its derivations (most notably the 'will to truth') in order to show the strength of the concept and its potential for serious application. Will in this regard is consistent with a Cross-Dialectical version of Pluralism in the secondary flow. Will is not self-justifying as the notion of the self is displaced thoroughly by the multiplicity of 'selves' that the will acts through. The self becomes subservient to the will, as the will acts to create and recreate the notion of self through the notion of 'will to power'. This lack of self-justification as an attack upon the notion of 'self' is considered to be a serious response to the Dialectical-Forms as Pluralism in the secondary flow (This promotes the Acuity, see chapter eight (8.2) for a continuation of this discussion of the identity of the 'self' as it relates to the ArCST). To this extent, therefore, Will can be considered further within the Architecture of Critical Systems Thinking.

Let us now tabulate this second section in order to represent the four horizontal flows.

Table 3.2 The four horizontal flows

Debates Epistemological levels	Margins	Fiction	Will
Dialectical-Forms	→		→
Cross-Dialectics	→		→
Cross-Generics	→		→
Pluralism	→		→

3.3: THE DEMAND FOR CONTINUED UNDERSTANDING

The demand for continued understanding must be seen as the over-riding logic of this third chapter. It compares and contrasts with the over-riding logic of structural consistency in the second chapter. Continued understanding develops as the horizontal and vertical flows are brought together. This combi-

nation of the two flows is best represented in a tabulated form. As in the two previous sections, tables were presented as summaries of the main flow being discussed. These two tabulations (3.1 and 3.2) are now combined to form this third tabulation: ' 3.3 Continued understanding '. The horizontal and vertical flows are simply presented. The 'dots' again representing the 'beginning' of the process, and the 'arrows' representing the 'end' of the process. As reasoned earlier, in both the beginning of this chapter and all of the second chapter, the direction of the flows is necessarily from left to right (horizontal) and from top to bottom (vertical). Structural consistency requires this directional flow. In order for the logic of the third chapter to be commensurable with the logic of the second chapter, this direction must be followed. This is for the following reasons: firstly, the epistemological levels develop in complexity from the Dialectical-Forms to Pluralism (therefore, the vertical flow respects this development by aiding its formation), and secondly, the main debates develop from an initiation of a problematic (the existence of 'marginal' discourses) to a sophisticated exemplification ('fictional' discourses) to an understanding of the motivations behind it ('will' discourses)(therefore, the horizontal flow respects this development by aiding its formation).

Continued understanding is a composite of the detailed understanding of the primary flow and an understanding of this primary flow in the secondary flow. The primary flow seeks to develop and understand the mechanisms of the epistemological levels through the perspective of each main debate. This helps to clarify the relationships between the first and second structural sides, and in doing this gives a detailed understanding of each position in the Architecture (all of the twelve cells), though these cells are necessarily considered as dominated

by the 'process' of investigation rather than their structural position (this is the main difference between the chapters two and three). The secondary flow seeks to understand this primary flow by considering the potential for each debate within the Architecture. This potential can only be considered with reference to the 'measurements' already at hand within the Architecture. These measurements are the epistemological levels in the secondary flow. This secondary flow shows how the main debates can respond to the demands of the epistemological levels. The levels operate to ask how fiction, for example, can show itself as a Cross-Dialectic, and in showing itself, how does it proceed to challenge Systems Thinkers in general. If Systems Thinkers are challenged by the formulations of these main debates, then we can see a potential for the Architecture within systems thinking. The demand for continued understanding becomes a test for the potential utility of the Architecture in Systems Thinking.

In the primary flow we achieved a relational modification of the epistemological levels. In the secondary flow we achieved a relational modification of the main debates. This relational modification is the second Architectural meaning achieved by the first chapter (the first Architectural meaning being 'structural longevity'). This meaning comes alive in this chapter: firstly with regard to the epistemological levels, and secondly with regard to the main debates. Relational modification is seen as a form of continued understanding within this processural context. Each of the structural sides modifies itself in relation to the other structural side. In the primary flow, the epistemological levels are modified according to the priorities of the main debates. The epistemological levels are presented as operating within the 'interests' of the main debates (the interests of the main debates are the characteristics that give the debates meaning

to any participant), as they strengthen the causes of these debates, and in so doing permit a more sophisticated understanding of the Architecture. The main debates are modified according to the mechanisms of the epistemological levels. The epistemological levels demand that each debate must be of relevance to the systems community, and it does this by relating each debate within the epistemological context of the four levels. If the debate is shown to satisfy the interests of this community, then the Architecture is proposed as intellectually viable with the use of the marginal debates. In both these flows (the primary and the secondary) we witness the relational modification of both structural sides to each other. This relational modification strengthens the overall position of the Architecture within Systems thinking, as it questions the validity of each structural side according to the priorities of the other structural side. This interesting investigation of the incidence of relational modification within the Architecture serves to show how the Architecture is to proceed in its 'critical maintenance'. This critical maintenance responds to the systems community (in changing the debates in response to the findings of the secondary flow) and to the direct interests of the participants (in changing the epistemological levels in response to the findings of the primary flow). To summarise thus far: relational modification (in its primary and secondary flows) promotes continued understanding which then allows for a critical maintenance (responding to the community and its participants) of the Architecture.

In order to bring this chapter to a close we can begin to discuss the interests of the second and third chapters in a more general sense. The third chapter is the 'semantic' to the 'syntactic' chapter two. The 'grammar' of the Architecture is established in the second chapter. This grammar becomes a logical necessity

through the structural consistency, a structural consistency that is established as the logic of the second chapter when the two structural sides are brought together. This structural consistency is the grammar of the Architecture. The meaning from this grammar is established from the processes that develop from the structure. This meaning is developed in the third chapter. This meaning becomes the 'semantics' of the Architecture.

The structure is seen as dominant, however. As the structure (the arrangement of the epistemological levels and the organisation of the main debates) determines the meaning (as the process *within* the structure). The syntactic determines the semantic, but of course, the syntactic without the semantic is meaningless. Let us further consider the relationship between the 'syntactic' and the 'semantic' in order to clarify its significance within the Architecture. The syntactic:

> "... qualities of form... are qualities such as well-formedness ... One intuitively feels about the syntactic aspects of form that they lie close to the surface, and therefore they do not provoke the creation of multidimensional cognitive structures." (Hofstadter, 1982, p.582)

According to Hofstadter, the syntactic is relatively simplistic when compared to the semantic qualities of form.

> "... "semantic" properties are connected to open-ended searches because, in an important sense, an object's *meaning*

is not localised within the object itself ... there are always aspects of its meaning which will remain hidden arbitrarily long." (Hofstadter, 1982, p.582, my emphasis)

The semantic is the potentially infinite class, whereas the syntactic is the finite class. The syntactic resides close to the surface of the object, while the semantic is not localised within the object. The syntactic is uni-dimensional, while the semantic is multidimensional. It would appear, therefore, that the semantic must dictate the syntactic, if we were to follow Hofstadter's analysis. This is the opposite of the proposition established above with regard to the Architecture. We must, therefore, further consider the relationship between the syntactic and the semantic. The syntactic can be seen as the 'system of language', and the semantic as a 'personalised gesture'. We begin again:

"We want to say "Meaning is surely essentially a mental process, a process of consciousness and life, not a dead matter."But what will give such a thing the specific character of what goes on?" (Wittgenstein, 1990, p.148)

The specific character is the 'personalised gesture'. The semantic gesture that positions a hand over a table is a gesture that the table is not high enough for the hand. But the hand is not the 'wish', as it expresses nothing:

"However, if I imagine the expression of a wish as the act of wishing, the problem appears solved, because the

> system of language seems to provide me with a medium in which the proposition is no longer dead." (Wittgenstein, 1990, p.149)

Instead of seeing the 'gesture' as an isolated semantic, we can see the 'gesture' as an act, as an act similar to other acts. This similarity becomes meaningful (a different definition of semantic) in terms of a system of language (syntactic). This can be seen as the 'prefiguring' of the gesture, a prefiguring that is an impossibility because the gesture as a wish fails to be a wish as soon as the wish is prefigured in satiation. This satiation is provided by the system of language. The satiation of the semantic is provided by the syntactic. In this sense, the syntactic determines the semantic, as it portrays a series of semantic gestures within the overall syntactic structure, the syntactic is where the semantic resides, to consider the variety of semantic situations one must refer to the syntactic that is to the everyday syntactic, the syntactic that organises the discussion of the semantic. The Architecture proposes such a distribution between the syntactic and the semantic, and we can suggest, therefore, that Wittgenstein also highlights the necessity of this priority within the Architecture. Suffice to suggest that the relationship between the semantic and the syntactic has been considered to a sufficient detail for this chapter, and the structural consistency (of chapter two) is considered to be a determinant of the continued understanding (of chapter three).

Having established the notion of continued understanding alongside the primary and secondary flows we have achieved the main purpose of this concluding section. In the process of doing this we have highlighted the critical

maintenance of the Architecture and the importance of relational modification, though the importance of relational modification (in this, the first stage of the thesis) is seen as being dictated by the structural consistency of the first chapter. This important distinction, between the purposes of the second and third chapters, was considered as a dialogue between the 'syntactic' and the 'semantic', two competing priorities were shown and the syntactic priority was re-established within the Architecture.

CONCLUSION

We have achieved three main objectives in this brief chapter. Firstly, the establishment of the importance of vertical flows within the Architecture. Secondly, the establishment of the importance of horizontal flows within the Architecture. And thirdly, the importance of combining these two flows to form a 'continued understanding'. This third objective becomes the logic of the third chapter. The Architecture of Critical Systems Thinking must adhere to a process of continued understanding (which is directed by the structural consistency).

The first objective operated relational modification upon the epistemological levels. It did this with the interest of the main debates. The epistemological levels have to show themselves as supportive of the main debates, supportive in the sense of 'allowing the polemic to be heard'. This support is the aspect of relational modification that refers to the epistemological levels. The epistemological levels respond to the challenge offered by the main debates by modifying their rela-

tionship with the main debates. This relational modification shows that the Architecture is intra-responsive to the current polemical debates. This intra-responsiveness adds to the general flexibility of the Architecture and allows for structural consistency to be adhered to.

The second objective operated relational modification upon the main debates. It did this by applying the mechanisms of the epistemological levels upon the main debates. The main debates have to show themselves as responsive to the intellectual concerns of the systems community. This concern is governed by the application of the epistemological levels upon the main debates. The main test is the test for Pluralism. If the debates are shown to be pluralistic in orientation, then they can be promoted for further consideration within the Architecture. This test modifies the claims of the debates, and this modification serves to understand the primary flow. As this modification relates to the modification in the primary flow, the secondary flow is able to understand the primary flow because of the modification that crosses the modification in the primary flow (see table 3.3). This crossing enables each modification of the epistemological levels to be considered within the modification of the main debates. The secondary understands the primary, and the primary understands the detailed positions.

The third objective combines these two flows. Continued understanding is the result, the dominant logic of this third chapter. Continued understanding operates mainly within the Architecture as a process. It is complicit with the over-riding logic of structural consistency. Structural consistency provides the stability for the continued understanding to operate. Continued understanding seeks to enter into a questioning of the structural consistency, but is only able to

do this if the logic of structural consistency is obeyed, this again re-iterates the pre-dominance of the logic of the second chapter. Having established the basic structure and process of the Architecture of Critical Systems Thinking, we are now able to add detail to our construction, and apply it in a useful sense. The relationship between the second and third chapters must be carried forward to the fourth chapter and the fifth chapters. The fourth chapter adds content to these two logics, and the fifth chapter applies the competence of the Architecture (as established in chapters two to four) to five current and relevant Systems Thinkers.

Table 3.3 Continued understanding

Debates Epistemological levels	Margins	Fiction	Will
Dialectical-Forms			
Cross-Dialectics			
Cross-Generics			
Pluralism			

CHAPTER FOUR: CONTENT

INTRODUCTION

The content of the Architecture can be seen as a combination of chapters two and three. A combination that is driven by the process and represented by the structure. As stated in chapter three, the process is guided by vertical and horizontal flows; while in chapter two, the structure is an Architecture of three intersecting main debates and four epistemological levels. The content is a reading of this Architecture from the second chapter along the two lines of flow from the third chapter. The two lines of flow (the vertical and the horizontal) cover all the twelve cells in the Architecture. However, as the two series of lines travel in orthogonally opposite routes, they only meet once. This statement needs some clarification. The two series of flows, the horizontal and the vertical, consist of four and three examples respectively. Each one of these examples only crosses the orthogonally opposite example once. For example, the vertical flow in the fictional range only crosses the horizontal flow in the Dialectical-Form once, the Cross-Dialectic once, the Cross-Generic once, and the Pluralism once. The vertical and horizontal only meet once within the Architecture. These solitary meetings come as a consequence of both the structure of the Architecture and the process of the Architecture. These solitary meetings are a response to the structural consistency and the continued understanding of the Architecture. These

solitary meetings are the effect of orthogonal opposites. The orthogonal opposites meet at the centre of each cell in the matrix. By following these two series of lines, therefore, it is possible to meet at the centre of each cell. This meeting becomes the initiation of the content.

When the two series of lines meet in the centre of each matrix, there is a reaction. It is a reaction that may be able to fill the cell with content or may not. The success of the reaction is dependent upon the relative strengths of the vertical and horizontal flows. If either flow is too strong for the other flow, then the ensuing reaction will be minimal and will fail to cause any filling of the cell. The relativity of the strengths of the vertical and horizontal flows is a response to an equal 'continued understanding' of the overall Architecture. However, if the strengths of the two opposing flows are relatively well matched, then the ensuing reaction will prove substantial enough to fill the cell. If, therefore, we take a look at the twelve cells in Table 4.1, we can see that in some cases, the reaction proved to be insubstantial. In these cases, the content suffers. There are, of course, compensations, because the content of these particular cells become 'satellites of critique'. These cells become satellites in that they are able to circulate the contented cells through the lines of communication provided in the Architecture. The 'lines of communication' refer to the horizontal and vertical flows that exist between the twelve cells. For example, cell three (please make reference to the Table, 4.1, where, from top left to bottom right, cell one is Dialectical-Forms - Margins and cell twelve is Pluralism - Will), a satellite cell is able to 'communicate' with cell two via the horizontal flow, and with cell six via the vertical flow. This communication is vital as we shall see throughout this chapter. We state at this stage that the will to critique of the satellite cells operates to com-

pensate for the overpowering of the vertical upon the horizontal flow within the ArCST. Therefore, the satellite cells operate along the horizontal lines of flow in order to increase the activity along this flow. This explains why cell three must only 'communicate' with cell two. These satellite cells are naturally attracted to the contented cells, because they wish for content. The 'will to critique' for each satellite cell is a reflection of the 'lack of content' of that cell. Critique then becomes a means to install instability in stable contented cells. It is this attraction that stimulates the need to critique within each satellite cell. The desire for content in each satellite cell empowers a critique of that very content. We must remember, that the satellites of critique, however, are naturally restricted to immediate neighbouring cells on the horizontal line of flow. They are only able to critique contented cells that share the same cell border. A border that can only be crossed using the horizontal flows that already exist.

We are now able to visualise two species of content: firstly, the contented cell; and secondly, the satellite cell. The first species is the result of a successful reaction between two relatively equally matched lines of flow, the vertical flow matching the horizontal flow, where the force of the horizontal flow was sufficiently strong to enable a reaction with and from the vertical flow. The second species is the result of an unsuccessful reaction between two relatively unequally matched lines of flow. Where the force of the horizontal flow was not strong enough to enable a substantial reaction with and from the vertical flow. It must be remembered here that it is the vertical flow that is the primary flow, and that all satellite cells can be referred to the vertical flow for a justification of their lack of content (an overbearing vertical flow causing problems of content).

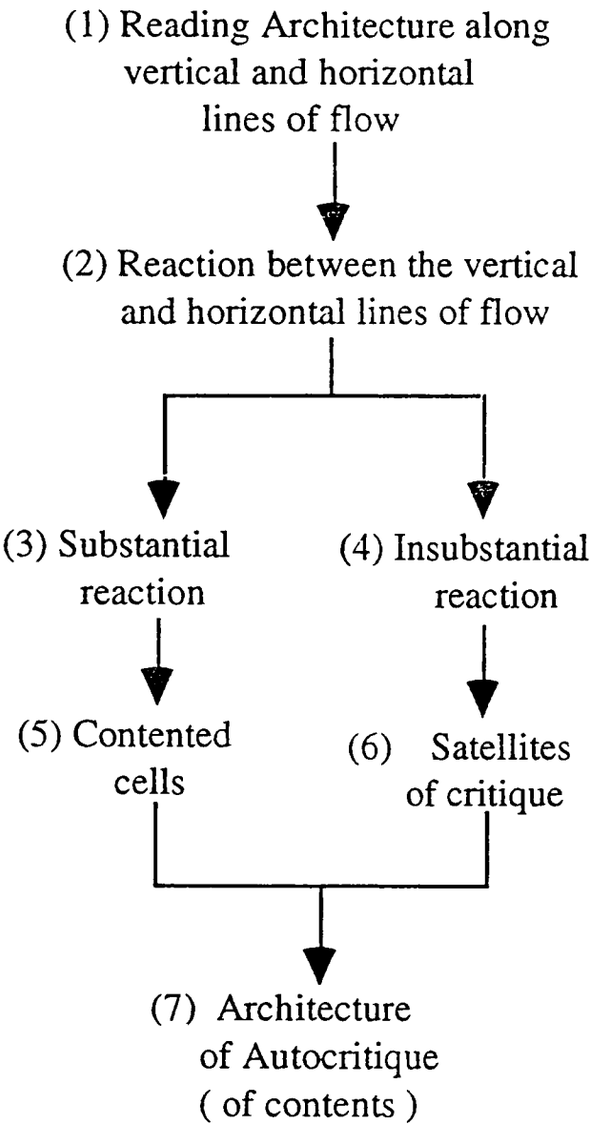
We can also see two distinct reactions: substantial and insubstantial. The substantial reaction develops from a clear recognition of the mutual importance of detailed information and its detailed critique. The subsequent definition of 'substantial' is critical information, information that creates a space (in its exacting definition) while being critical of the space that it occupies. The insubstantial reaction develops from neglect of the mutual importance of detailed information and its detailed critique. In this sense, 'insubstantial' can be read as uncritical information, information that creates a space but loses itself in its uncritical appreciation of that space. The space becomes vacuous since the value of the space is not appreciated. Uncritical space becomes a constant torment. A torment that begins to dominate the cell, the cell is forced to become a satellite, attracted to content in that its own lack of content promotes the 'will to critique' in others. The 'will to critique' does not operate within the satellite cell, but operates towards the contented cells. This is an example of the uncritical becoming critical of others, being critical of others may help the others but it adds nothing to the needs of the satellite cell. This uncritical information is aware that the creation of space is a powerful capability. However, it is not aware that the space needs to be critically contained. It is this notion of critically containing space that enables a location to be identified. Insubstantial, therefore, implies a lack of identity. The insubstantial wishes to be identifiable, and criticises the notion of identity in cells that possess a critical identity (this is the 'will to critique' operating on others, one constitution of the 'Architecture of Autocritique').

These two species, created by these two reactions generate an **'Architecture of Autocritique'**. It is autocritical in the way that it applies within the Architecture (as a combination of the structure and the process of the Architecture) through

the creation of a deficiency of Architectural content. It is the imbalance between chapters two and three, the process that develops the potential for an 'Architecture of Autocritique'. This imbalance then figures as a deficiency of content. And it is this deficiency (visualised as satellites of critique) that enables critique to occur as part of the development of the Architecture. The satellites of critique serve as the critical elements within the 'Architecture of Autocritique'. The satellites of critique respond by critiquing the 'contented cells'. This inherent critique serves as autocritique within an **'Architecture of Autocritique'**. The word 'autocritique' means self-criticism, since 'auto' derives from the Greek *autos* meaning 'self'. The 'self' in this case is identified as the Architecture of Critical Systems Thinking. It follows that an 'Architecture of Autocritique' is critical of the establishment of Architecture itself.

Having given a brief consideration of the manner in which the Architecture achieves a contented and non-contented state, we are now in a position to summarise the previous paragraphs in a diagrammatical manner:

Figure 4.1 The Architecture of Autocritique



Having established an introductory idea of the contents of the Architecture we must now enter into the detail of the Architecture. This detail is the consideration of the twelve cells. This consideration will register the incidence of contented cells and cells of critique, and will continue by seeing how the satellites of critique respond to the neighbouring contented cells. Accordingly, this chapter is composed of twelve sub-sections which respond to the twelve cells.

4.1 DIALECTICAL-FORMS - MARGINS

The aim of this section is to demonstrate how Dialectical-Forms relate to the paper "Extremities Enriching Mainstream Critical systems Thinking", Wooliston, (1990). The ideas expressed in this paper shall be given the title of 'Margins'. The most potent, and perhaps most abstract, play on Dialectical-Forms in 'Margins ' exists between 'power' and 'knowledge'. This argument highlights the value of adopting counter-positions within Critical Systems Thinking. The paper

> "proposed that we temporarily abandon the mainstream of critical systems theory, adopting a postmodern position with the hope of revealing rationalities at the extremities [or our preference for the word 'margins'] of modern thought." (Wooliston, 1990, p.76)

These rationalities could be found through using a framework of Habermasian 'knowledge-constitutive interests' and Foucaulvian 'interpretive analytics'. Habermas and Foucault have opposing views regarding the relationship between Power and Knowledge. Their ideas are used to incite a debate concerning Power and Knowledge. The relationship between power and knowledge, therefore, shall be an example of a Dialectical-Form. And we are able to emphasise the marginal discourse concerning Power and Knowledge because the Foucaulvian project seeks out these 'margins':

> "... in order that I may substitute the problem of domination and subjugation for that of sovereignty and obedience ... there were a certain number of methodological precautions that seemed requisite to its pursuit. In the very first place, it seemed important to accept that the analysis in question should not concern itself with the regulated and legitimate forms of power in their central locations, with the general mechanisms through which they operate, and the continual effects of these. On the contrary, it should be *concerned with power at its extremities*, in its ultimate destinations, with those points where it becomes capillary, that is, in its more regional and local forms and institutions." (Foucault, 1980, p.96, my emphasis)

Here we can clearly see that Foucault's first (of five) methodological principle(s) seeks power at its extremities, in its localities. This shows the intentions of this first cell, but in order to further clarify these intentions it seems

necessary, at this stage, to give a very brief introduction to the work of Foucault and Habermas. Foucault's work will be considered first, followed by the work of Habermas.

Interpretive analytics is a phrase given to Foucault's work by Dreyfus and Rabinow (1982), incorporating both Foucault's Archaeological and Genealogical phases. These phases have some similarities (Burrell, 1988, p.229), in that both reject totalising historiographies, both search for ruptures and discontinuities, both decentre the subject (Cook, 1987, however, would argue that Foucault's last three volumes of the 'History of Sexuality' propose a fundamental conception of the self, and thereby reiterating the importance of the self he centres the subject), and both criticise human progress and Enlightenment.

The differences, however, are more revealing. First, the Archaeological method searches for deep regularities unknown to and uncontrollable by the individual, while Genealogy looks for singular (ie unregular) superficial events. Second, Archaeology uses a modernist (traditional) critique of institutions, while Genealogy is more arbitrary using localised techniques to seek out small details (what could plausibly be termed a post-modernist critique). Third, Archaeology excavates, turning 'inside out' from depth, thus advocating a form of depth hermeneutics. Genealogy opposes depth hermeneutics, considering the accidents, contradictions and events beyond human control as more revealing.

The differences show that Foucault's Genealogical project seems to show more promise for our marginal activities, as its emphasis upon the more localised techniques responds to the concern to study 'power at its extremities'. For the

benefit of debate, therefore, an emphasis upon Foucault's Genealogical phase shall be contrasted with the more universal Habermasian knowledge-constitutive interests. Before this, a short introduction to Habermas is required.

Habermas (1984) looks toward the 'language-pragmatic' as a liberating rational, as the most contemporary enunciation of the 'enlightenment project'. It is a rationale that relates to a communicative rationalisation of society based upon a pluralistic (Flood, 1990b) base of knowledge-constitutive interests (also see Oliga, 1988, for a direct relationship between the Habermasian interpretation of the enlightenment project and the establishment of a 'Critical' Systems Thinking). Habermas addresses the generalisability of norms with the hope of making value systems transparent, and allowing the force of the better argument to enable an oppression-free democracy (Ulrich, 1989). The Habermasian programme calls for a radicalisation of the critique of knowledge in the reproduction of social life and on the objective conditions which historically bind the subject of knowledge (McCarthy, 1978). A critique between empiricism and transcendentalism, aiming his inquiry at a transcendental ego that must work and interact in a material structure.

Following this extremely brief introduction to the complex work of Habermas and Foucault we are now able to enter into a debate concerning power and knowledge. Flood's (1990a) third chapter of 'Liberating Systems Theory' deals with these differences and disputes within a critical systems framework, and it is from here that our argument naturally continues. Flood outlines four specific counter-angles. First, Foucault's use of power as both transcendental and descriptive, and therefore possibly contradictory. Second, a fundamental dif-

ference between Foucault and Habermas over the conception of power. Third, Habermas's regard of Genealogy as relativistic and crypto-normative. Fourth, Habermas's historical reconstruction of a priori structures, contradicting Foucault's discursive practices acting as an historical a priori. Space allows for only the first counter-angle to be considered (though through an inter-relationship with the three other counter-angles).

Habermas finds Foucault's conception of power contradictory. Foucault empirically describes power and at the same time places power in a transcendental framework. Foucault sees little problem with Habermas's conception of contradiction; Foucault would describe power as functioning behind a veil of objectivity that offers epistemological developments to neutralise problems that arise through prior political contexts (Boyne, 1990). In this dual sense power is seen as empirical (working to neutralise) and transcendental (working through prior political contexts). This dual nature of power is untenable for Habermas since Habermas conceptualises power as pre-linguistic. Power frameworks work to restrict knowledges forming, they are pre-linguistic. Habermas would argue that we are able to overcome the negative influences of power through the sovereignty of an ideal speech situation. An ideal speech situation must be strived for in order to limit the destructive capabilities of power. Power is exercised through restricting discursive-will formation at the institutional level and Power disallows an adequate knowledge of limiting conditions and societal and functional imperatives (Habermas 1976, p.113).

Foucault (in the case above) and Habermas (more generally) see power as restricting knowledge networks, however, their methods are very distinct.

Foucault considers power and knowledge to be inseparable; without localised power networks epistemology would cease to exist. Power supports knowledge, power investigates knowledge, power protects knowledge, power becomes knowledge. For example, in order to treat insanity, the Doctors needed to objectify, humanise and medicalise, which requires a concealment (or a well-reasoned protection) of the recent history of mental studies (Boyne, 1990). In this Foucaulvian sense, some knowledges are released at the expense of others: there are linguistic constraints to any understanding of power-knowledge relationships. The manner in which we organise knowledge can be seen as a linguistic constraint upon the potential development of knowledge. And what is marginalised in this Dialectical-Form of power and knowledge is the concealed knowledges and the power of linguistic constraints.

This explanation of power as an epistemological category is unacceptable for Habermas. Habermas must reject this categorisation, as to accept it would be to accept a linguistic rationality intimately related to power, and this would contradict the thesis of power being pre-linguistic. Habermas cannot accept this linguistic understanding of power, instead, he must attempt to understand how power affects nature in its pre-linguistic constitution.

> "The normal congruency between linguistic symbols [is distorted by the pre-linguistic power] ... so that actions and expressions belie what is said." (Thompson, 1985, p.94).

The Habermasian conception of power as pre-linguistic and the Foucaulvian conception of power as intrinsically linguistic is a major reason as to Habermas's

dislike of Foucault's dual usage of power. If this dialectic of power-knowledge is to be further developed, then it is suggested that contrary notions of power be tolerated and brought within the broad dialectical system. Tolerance breeds discussion. Discussion should be aimed towards the assumptions of the theoreticians under debate, for example, how does Foucault's assumptions of the role that language plays affect his discourse with Habermas? In this way Dialectical-Forms can generate a fruitful debate, and their application to marginalised debates can be reinforced.

This first cell considered the notion of 'margins' through a power-knowledge debate. The marginal position is adopted by Foucaulvian conceptions of power-knowledge relationships. Foucault's epistemological consideration of power must necessarily be marginalised by Habermas's pre-linguistic notion of power. The works of Habermas and Foucault (with particular reference to power-knowledge relationships) exemplify the Dialectical-Form in the 'Margins'. This is a contented cell, and bears no border upon a satellite cell.

4.2 DIALECTICAL-FORMS - FICTION

The argument 'Critical Systems Thinking: Real Fiction' (Wooliston, 1991a) is built upon a dialectic between late and traditional modernity. Let us now give explanations of late-, and traditional-, modernities in their literary contexts. Wilde's (1981) two performative distinctions of irony shall be used to demonstrate the relationships between these two forms of modernity. Two forms

of irony relate to two forms of modernity. The two forms of irony are: mediative and disjunctive. The first thing to do is to give a definition of 'irony'. The second thing to do is to relate the two forms of modernity to the works of three significant writers of fiction: Forster, Woolf, and Compton-Burnett. These three authors represent the movement from traditional modernity to late modernity. And the third thing to do is to relate these two forms to the two forms of irony.

We can begin our definition of irony on a general scale, with reference to Wilde:

> "For Wilde, disorder is contained by that all-purpose new critical device, the principle of irony, that term which, encompassing technique and cast of mind simultaneously, allows for the articulation of opposing attitudes and contradictory literary forms together". (Connor, 1989, p. 114 - 115)

In this definition we can discern elements of the method of Socratic dialogue in using irony to establish the unheard opposite of any situation. This maintains the interest in the Dialectical-Form, and places it within the fictional context. Wilde, however, takes irony further than Connor suggests in the above quote. Wilde achieves this by establishing the need to go beyond irony as a mere contrast between reality and appearance (and thereby perpetuating the ontological separation of mind and body (discussed in 4.3 and 4.12)) (Wilde, 1981,

p. 4), Wilde develops a more sophisticated dialectic (more sophisticated than the traditional reality-appearance dialectic) between disparity and creative alternatives:

> "what it [the formulation of irony] does, in denying fixed, essential realities and thus, too, illusory appearances, is to allow the coexistence of two mental structures or levels (which in mediate irony [discussed below] are perhaps one): an intuitive grasp of disparity (the ironic) and a secondary, frequently more self-conscious way of coping with disparity by creating alternatives (the anironic [also discussed below]) to it". (p. 31)

This dialectic between the ironic (disparity) and the anironic (the creation of alternatives) is the base upon which Wilde develops three strands of irony: mediative; disjunctive; and suspensive. These three strands roughly correlate to: traditional modernism; late modernism; and postmodernism. What follows, is an explanation of this correlation through the literary works of Forster, Woolf and Compton-Burnett. Forster, in using mediative irony, is considered to be a traditional modernist. Woolf, in using disjunctive irony, is seen as challenging the boundaries between traditional and late modernism. Compton-Burnett, in her use of disjunctive irony, is seen as essentially a late modernist. (The use of suspensive irony and the notions implicit in post-modernity are examined in section 4.5 Cross-Dialectics and Fiction, because the needs of this section can be satiated with the complexities of the dialectic between traditional modernity and late modernity).

Let us begin with Forster's mediative irony. Wilde sees mediative irony as representing a

> "... world [that] is perceived as deviating or lapsed from some pre-existent norm, the aironic [not an opposition to irony, but a complement] offers a contrasting societal or at least earthly vision of integration and connection, harmony and coherence: paradise regained and made reasonably or imaginatively terrestrial" (1981, p. 30)

The irony allows the perception from the pre-existent norm, and the anirony offers an alternative harmony to the one perceived. This form of irony, mediative, is evidenced in the work of Forster (1963):

> "A man does not talk to himself quite truly-not even to himself; the happiness or misery that he secretly feels proceed from causes that he cannot quite explain, because as soon as he raises them to the level of the explicable they lose their native quality. The novelist has a real pull here. He can show the subconscious short-circuting straight into action". (p. 81)

Forster, here attempting to mediate between the subconscious (depth) and the active (surface), is optimistic with regards to the 'pull' (the stimulation of the movement from the depth to the surface) of the novelist, setting up an irony of 'causes that he cannot quite explain' and an anirony of 'native' or

'happiness' explained; the anirony complementing the irony in suggesting the possibility of regaining 'paradise', and the irony allowing the novelist to mediate between the depths and the surface. The depths where the majority of emotions lie, and the surface where they sometimes show. Both the depths and the surface can be compared to an iceberg. The relationship between irony and anirony allows for the quarter showing to be matched with the "...three-quarters hidden like an iceberg ... [through a] ... process of complication, crisis, and solution". (Forster, 1963, p. 82). Such a process can be clearly demonstrated in this short quote:

> "... there are in the novel two forces: human beings and a bundle of various things not human beings, and that it is the novelist's business to adjust these two forces and conciliate their claims." (Forster, 1963, p. 99)

The complication is the two forces (brought into focus by irony), the crisis is the adjustment (relating irony to anirony), and the solution is the conciliation (between irony and anirony). Forster's mediative irony provides "a reality of a kind we can never get in daily life" (p. 44) through this process of uncovering the hidden three-quarters of the iceberg, and holds up the possibility of obtaining a 'paradise' of 'perfect knowledge':

> "... perfect knowledge is an illusion. But in the novel we can know people perfectly, and, apart from the general pleasure of reading, we can find here a compensation for their dimness in life". (Forster, 1963, p. 62)

The anironic creation from the ironic conditions that Forster sees is the mediative relationship that must present itself if we (in our 'dimness') are ever able to raise ourselves to the heights of perfect knowledge. Forster concedes that this is an illusion, but he also suggests that illusions can be made possible. Such illusions of perfect knowledge are not sustained in the work of another traditional modernist writer, Virginia Woolf. Woolf does not use a mediative irony in order to probe the possibilities of anironic and ironic synthesis as Forster does, but uses a disjunctive form of irony that seeks to control disconnections through an equal poise of opposites as her narrative form. Woolf's irony is

> "... more autonomous [than mediative], it projects the doubleness that characterises it as a trope into a lateral form, a disjunctive form, which creates in turn those attitudes and perspectives - distance and detachment, for example - that we associate with irony as a strategy of non-involvement or disillusion or defense." (Wilde, 1981, p. 28 - 29)

Woolf's version of traditional modernism proposes a more elusive and fluid conception of truth than Forster's version. Both Forster and Woolf still take issue with the same epistemology of the hidden (Wilde, 1981, p. 107), but Woolf requires disjunctive irony in order to deal with the increased complexity of the characters involved. The characters are more isolated from the appearance that reality affords them. This increased isolation forces the novelist to a more profound level of investigation, a more disjunctive level. The tracking down of a character's unity requires more sophisticated methods, but Woolf shares with

Forster an underlying belief that at the core a character remains intact, a belief that the arduous journey is worthwhile. We can exemplify these ideas of disjunctive irony through an analysis of Woolf's *Jacob's room* (1929).

Reading our way through *Jacob's room* we discover a lingering sense of despair, a continual strain to reveal the reality through a penetration beyond phenomena:

> "... [Jacob's] bucket was half-full of rain-water; and the opal-shelled crab slowly circled round the bottom, trying with its weakly legs to climb the steep side; trying again and falling back, and trying again and again". (p. 19)

It seems that we must try without regress to go beyond our immediate inadequate environment, we must strive, penetrate, as the only truth is the truth revealed through depth analysis. We begin our lives as transparent creatures "... and then the cloud thickens. All history backs our pane of glass. To escape is in vain". (p. 78) All we are able to do is read the half-sentences that reveal themselves through a cloudiness of history "... but these half-sentences are like flags set on tops of buildings to the observer of external sights down below" (p. 79). We must see these flags as indicators of hidden truths, initiators of depth analysis. The flags are the first indicators of what should be studied, they open up the possibility of further analysis. We must learn, also, that such indicators may be false indicators (as no appearances can be trusted):

"Her face was assuredly not soft, sensual, or lecherous, but hard, wise, wholesome rather, signifying in a room full of sophisticated people the flesh and blood of life. She would tell a lie, though, as soon as the truth". (p. 85)

This description of Mrs Pascoe shows how Woolf is able to describe a character that, because of her 'hard, wise and wholesome' appearance seems more likely to be full of truth than not. The notion of 'wholesome' in traditional modernism would normally refer only to the truth being spoken; and to be 'hard' is to talk direct, direct truths void of any sentimental or value laden interpretations; and to be 'wise' is to know what the truth is, to respect that truth, and to only utter that truth. This, however, is not the case, this 'wholesome' character is just as likely to lie than tell the truth, the hardness is a cover and the wiseness misunderstood. We have misunderstood, something stands between us and this description of reliability. This 'something' is the disjunctive irony of Woolf as it relates to traditional modernism. This would suggest that even in a 'wholesome' character we cannot rely upon an enunciation of truth: truth requires further penetration than the 'wholesome' phenomena on show, it requires a profound knowledge of disjunctive irony. But can we reach a point where the 'wholesome' character <u>can</u> be relied upon? This possibility is given in the notion of 'aesthetic closure'.

Though Woolf advocates continual depth analysis, there exists a point where analysis seems to stop, but in stopping, the conscience continues to be disturbed (Friedman, 1966). This point is 'aesthetic closure', but not resolution

(as in Forster's mediative irony). Aesthetic closure is necessary in that it substitutes for a resolution. In the increased complexity of disjunctive irony, all that can be offered is aesthetic closure:

> "Only to prevent us from being submerged by chaos, nature and society between them have arranged a system of classification which is simplicity itself ..."
> (Woolf, 1929, p. 110)

But to find this 'simplicity' we must endure a bombardment of complexity. This simplicity is the offering of the author, as the author offers an interpretation of classification systems. We are defended from the chaos that disjunctive irony shows us by a means to (aesthetically) close the bombardment of complexity. This is quite the reverse of Compton-Burnett's use of disjunctive irony. In Compton-Burnett's 'Manservant and Maidservant' (1959) the only truth that we have is the truth that appears to us. If a system of classification appears to us, then that also constitutes 'reality', if reality is chaotic, then that system of classification is also chaotic, its appearance is chaotic, it is just that we are not reading its appearance correctly. There is no penetration beyond reality, it is more a case of reading appearances correctly. Truth does not equate with depth, truth equates with the visible, the trick is not to see more deeply but more differently and therefore more accurately:

" 'Is that fire smoking?" said Horace Lamb

'Yes, it appears to be, my dear boy'.

'I am not asking what it appears to be doing.
I asked if it was smoking'.

'Appearances are not held to be a clue to the truth',
said his cousin. 'But we seem to have no other'."

(Compton-Burnett, 1959, p.5)

No anirony is offered in Compton-Burnett's work, only an irony that clarifies the richness of surface (Wilde, 1981, p. 119). For Compton-Burnett there is smoke without fire (p. 12), there is surface without depth, the richness of surface is the richness of interpretation, she dwells upon linguistic contradictions rather than the complexities of characters. The 'depth' for Compton-Burnett is another dimension of the 'surface'. Her characters are not concerned with depth but with the complexities of interpretation. What is important is the range of interpretations that her characters are able to read. Against Woolf's 'well-made' characters, we have in Compton-Burnett changeable, illusory, fraudulent and unpredictable characters; characters that challenge modernism's rage for order (Wilde, 1981, p. 123). Compton-Burnett, is an exponent of late-modernism, distinct from the traditional modernisms of

both Forster and Woolf. Late-modernism is seen as a precursor for post-modernism, an area of thought that is given extensive treatment in the following sections in this chapter, the next chapter, and the whole of the second stage.

We are, now, able to see a competing dialectic between late and traditional modernity that seeks to redefine the meaning of discourse within the works of all the authors concerned. In later sections we shall develop and clarify the dialectic between fact and fiction, a dialectic that may beg the question 'Is Critical Systems Thinking real fiction?'. The result of this whole fictional context within the Architecture attempts to respond to this question by relating social theorists to writers of fiction; thereby specifying the dialectic between fact and fiction.

An example is offered. Let us choose 'Traditional-Modernism'. 'Traditional Modernism' considers fiction to be "... of a kind we can never get in daily life" (Forster, 1963, p.44); and reality to be discoverable in depth analysis. Reality is holistic, complex, natural and social. Virginia Woolf and Hans-Georg Gadamer represent fictional and factual exponents, respectively, of traditional-modernism. With Woolf's 'aesthetic closure' we compare Gadamer's (1975) 'immanent unity of meaning.' In this comparison we can demonstrate a human will to 'transcend' the impossibility of unity in order to reveal 'aesthetic closure' and a 'prejudgement of completeness.' This crude example of a fictional-factual dialectic offers the possibility to further deconstruct authors from both the disciplines of fact and fiction. We shall develop such communication between the worlds of fact and fiction later in this chapter. However, it is suffice to note that in this section we have developed a Dialectical-Form between Traditional-Modernism and Late-Modernism. This Dialectical-Form was instigated with

the appliance of two forms of irony, irony that relates only to the fictional context at the moment, but we shall extend its relationship to the factual context in later sections.

This cell is a contented cell, showing an ability to balance the vertical flow and the horizontal flow. The redefinition of the second structural side permitted a similar redefinition of the first structural side, and the fictional content thereby matched the Dialectical-Form.

4.3 DIALECTICAL-FORMS - WILL

This subsection builds a dialectic between pluralism and dualism. Pluralism, for the purposes of this section, may be defined as an attempt to replace the traditional view of science with a more literary appreciation of competing vocabularies (see chapter two, section 2.2.4 for a more extensive treatment). Vocabularies represent the contingency of everyday language, while the Dualistic Metaphysical pretensions lead to classifications of correct and incorrect vocabularies. Vocabularies offer the possibility of interpreting interpretations rather than interpreting things. Pluralism respects that 'things' do not exist in isolation, but exist as 'interpretations'; 'things' have to exist as interpretations before they can be classified for intellectual discourse. The 'thing' is not a proximity to the act of isolationing phenomena, but a pretence that isolation can force a meaningful classification for intellectual discourse. Dualism centres the interpretation of things over any other form of interpretation (this stemming from

the separation of perception and reality, of the interpreter and the thing). In this sense, Dualism wishes to study the 'thing' in its 'native' environment, an environment that allows the 'thing' to be gradually loosened from the ravages of interpretation. Interpretation, for Dualism, is the act of perception, but we must free ourselves from this act as Descartes believes:

> " I could not help judging that what I understood was true; not that I was coerced into holding this judgement because of some external force, but because a great inclination of my will followed from a great light in the intellect - so much so that the more spontaneously and freely I believed it, the less I was indifferent to it ... for it is manifest by the light of nature that the intellect's perception must always precede the will's being determined." (1641, p.59-60)

For Descartes, the intellect determines the will, and that this intellect allows free and spontaneous thinking, a free and spontaneous thinking that generates "... objective reality .... " (Descartes, 1641, p.40)(This does not follow from the chronological scheme that has been proposed by Descartes, but rather it can be suggested that elements of the third meditation (this directly above quote) necessarily follow from elements of the fourth meditation (the larger quote above)). Objective reality is the content of a 'true' idea, one that follows from the 'great light of the intellect'. This reality contrasts with 'formal reality'. Formal reality is the object existing in its own right, in its native environment, independent from perception. These realities must be able to exist independently, according to the manner in which Descartes defines them. Two realities exist:

the known (as objective reality) and the knowable (as formal reality). To know the knowable we must respect these two realities. And the question of the will becomes secondary, placed within these two realities, conveniently driven by a God-given force that bestows the will upon the Cartesian investigator of falsities. The will comes after the intellect, the intellect that seeks objective reality. The intellect, therefore, is able to contain the will within this two dimensional design of reality (the objective and the formal). This, therefore, is the first Form within the Dialectical-Form, the Form that shows the 'will' in its Dualistic framework. We must now consider the 'will' in its pluralistic framework, and thereby create a Dialectical-Form of the will in its Dualistic and Pluralistic moments.

Vocabularies, in interpreting interpretations consider 'things' to be unable to stand on their own (extrinsically), rather 'things' exist in a 'cloud' of interpretations, and it is these interpretations that allow a constitution of the 'thing' (intrinsically, thereby following the categories of the Dialectical-Forms, see the second chapter). In order to begin a critique of Dualism at an epistemological level, we need to challenge its ontology, and in this sense bringing ontological questions into an epistemological debate allows for a dialectic of Dualism and Pluralism to be taken seriously. The assumptions of Dualism need to be questioned. These assumptions include the ontological separation of mind from body and the epistemological separation of subject from object. A reason why these assumptions have not been questioned within Cartesian Dualism is because Dualism espouses extrinsic relationships. Relating two things in an extrinsic relationship does not change them, since they do not refer to each other, neither when they are being defined, nor acted upon (Israel, 1979). Such extrinsic relationships pervade the Cartesian notion of two separate notions of reality: the

objective and the formal. The formal does not refer to the objective, or the objective to the formal. In order to challenge this epistemological restriction (that restricts reference between these two Cartesian realities) we need to consider the ontological developments that generate the epistemological prejudices. In such prejudices Dualism maintains a 'sovereignty of the object', where the assumptions for the existence of the subject are not called in for debate. The object merely relates to other objects, as the expression of doubt can never extend to the object that generates the doubt: the 'I'. Fuenmayor (1989) considers this to be Descartes falling into his own Dualist trap, in that the negative exposes the positive dogmatism. The ontological development concerning the apriori constitution of the self forces itself into an implicit epistemological assumption that knowledge has the form and truth of the mathematical project (Fuenmayor, 1989). The ontology generating the epistemological prejudice. This ontological generation generates two dimensions of truth: firstly, the correspondence of thing to intellect; and secondly, the correspondence of intellect to thing (Fuenmayor, 1991, p.478). The first dimension is one of genuineness, a thing is genuine. The second dimension is one of refutability, the intellect forms a proposition, proposing a state for the thing. The intellect emerges from matter to investigate external truths. The ontology of a unity of objects requires a unity of epistemology: one thing has one truth. Interpretations are reduced to things, things that exist as universal and unified truths.

One of the major concerns of Dualism is to maintain the coherence of the object and through this coherence 'language' is kept at a safe distance from 'reality'. Reality consists of the physical world and language merely 'corresponds' to the observer. Language is inert, it can be reduced to singularities for

the purpose of maintaining the two dimensions of truth. There are, of course, obvious problems with this bifurication of reality. For example, how can we explain the meaning of correct, when correct is presupposed in all explanations? Reality can offer no solutions to this riddle, because any contact with reality requires mediation, and any mediation is neither correct or incorrect, if it alludes to correctness it fails to mediate. Mediation is a process between forms of representation. If correctness is considered then representation is at issue not the mediation; an attempt to restrict mediation is an attempt to force representation. Mediation allows representation. Representation disallows mediation. Dualism can be considered as an attempt to force representation through disallowing mediation. The Dualistic mentality aims to objectify through representation. It does this through upholding the independence of the object and the independence of the perceiver. This Dualistic notion of independence offers solutions, in the sense that solutions exist independently of problem contexts. The 'correctness' of solutions is a reflection upon their independent status, to be 'correct' is to be independent of the impurities of inter-relationships. In Pluralism, there are no solutions, merely rules to be obeyed that suggest that some statements are more logically compelling than other statements (Israel, 1979). What is not suggested is a monistic reduction of reality to language or language to natural phenomena. But if not dualism, or monism, then what? Following the scheme set out in the second chapter, a dialectical rationality allows reality and language to form a totality advocating tolerance of difference. There are three points to be made: language and reality are different; language is about reality as well as being reality; knowledge of language is knowledge of reality. Language and reality,

therefore, require each other within a totality of difference (this dialectic shall be explained under a different issue later on in this thesis, see section 4.11 for example).

In this cell the 'will' is over-run with considerations of the presence of Dialectical-Forms between Dualism and Pluralism. The re-definitions of the second structural side, therefore, dictate the re-definitions of the first structural side. This imbalance causes a satellite cell to develop, content is sacrificed, but is used to critique the other cells. Such critique points in the direction of the contented cells that border this cell within the Dialectical-Form stage: cell two (4.2). Critique of the second cell questions the structure of the Dialectical-Form. The Dialectical-Form in section 4.2 is between Traditional Modernism and Late Modernism. The abundance of the re-definition of the Dialectical-Form in this section shows us that Traditional modernism does not oppose Late modernism in the way that Dualism opposes Pluralism. Traditional modernism seeks and shows the possibilities for the resolution of the active and the profound within the novelist's work, though there exist two forms in this first form: one form that allows the novelist to resolve (Forster's), and another that shows that aesthetic closure forces resolution but this is not real resolution (Woolf's). Late modernism cannot see the need for closure since such an aperture is the creation of the author in the first place (there is nothing beyond what we can see). This is a complex Dialectical-Form, where there exists not only three varieties of modernism (Traditional Forster, Traditional Woolf, and Late Compton-Burnett) but three types of irony (Forster's mediative, Woolf's disjunctive, and Compton-Burnett's disjunctive) and the hidden motive of a social context for the fictional creations. The complexities, however, do not immediately help the causes of this

Dialectical-Form (they may promote a Cross-Dialectic), they in fact work against these causes since the Form takes on many pluralistic forms (notably the modernist, ironical and social forms). This section in its satellite role would hold the previous section down to one Dialectical-Form, restriction to opposing tensions. The clearest opposition is between Forster's mediative irony and Compton-Burnett's disjunctive irony as the former seeks and finds resolution while the latter does not accept that such a resolution is required, and consequently offers no resolution. This satellite cell has begun to critique the contented cell.

4.4 CROSS-DIALECTICS - MARGINS

A Cross-Dialectics that explicitly allows the power of the transient generates the necessary critique of power/knowledge relationships and therefore extends Critical Systems Thinking beyond the normative implications of Traditional Systems Thinking. This extension leads us to points of marginality. For these points of marginality to be taken seriously they need to be adopted by a dialectical rationality, (an ironical imagination (see section 4.2, and chapters ten and eleven)) as a dialectical rationality allows for traditionally disallowed knowledges to be opposed to traditionally allowed knowledges. The Dialectical rationality that is constantly iterated throughout this thesis penetrates the whole Architecture, and its reiteration in the Cross-Dialectic comes in three dimensions. Three dimensions of Dialectical-Forms, representing three spatial dimensions, are the foundations for the Cross-Dialectic. This section builds three such dimensions in a marginal context.

In the "Margins ... " (Wooliston 1990) argument an example of a marginalised manner of thinking within mainstream systems thinking is the study of schizophrenia. Schizophrenia takes on many interpretations when applied to Systems Thinking, its medical categorisation is not the only interpretation of this complex condition, as many writers have developed their understanding of the condition to include, for example, the constant need for precision within the sciences:

> " Freud describes the fate that awaits a closed use of language: schizophrenia, a distortion of language in which the word presentation of the object completely eliminates its thing-presentation, in which there is nothing but a closed system of signifieds." (Lyotard, 1989, p.79)

Such a Lyotardian development of a Freudian understanding of schizophrenia develops a forceful attack upon the rationality of science that is radically different from the medical notion of schizophrenia that sees it as "... a chronic illness with a high relapse rate." (Barrelet *et al*, 1990, p.357) and then continues to assess the predictability of relapse "... by means of a multivariate analysis ... " (p.359), the epitome of the constant need for precision within the sciences. In our introductory understanding of schizophrenia we can witness a large range of available literature positing contradictory epistemologies. It is the task of this section to relate such contradictory methodologies within this Cross-Dialectics of marginalised discourses.

The initial process of Cross-Dialectics opens up a dialectic of self and body (using Laing's (1960) *Divided Self*). This initial process considers the

ontological insecurity that exists when the self is divorced from the body. An enlightened psychiatric profession would work on an understanding of this dialectic. It is maybe helpful to, firstly, demonstrate an unenlightened approach that comes from an ontologically static position. Schizophrenia is defined as a

> "... label applied to a group of disorders characterised by severe personality disorganisations, distortion of reality, and an inability to function in daily life." (Atkinson et al, 1987, p.511).

The unenlightened approach seeks order to the disorders and attempts to see no further than one functional view of reality, a static ontological position. By contrast, the enlightened approach seeks a dialectical understanding of the patient's context. The patient's context can in fact be related to the unenlightened approach as it is by Laing:

> " The most serious objection to the technical vocabulary currently used to describe psychiatric patients is that it consists of words which split man up verbally in a way which is analogous to the existential splits we have to describe here." (1960, p.19)

We are now beginning to see the complexities of studying schizophrenia, firstly the difficulty of an explanation of the phenomena, and secondly the

possible schizophrenic implications of such an explanation. Let us follow Laing, in his enlightened existential approach, in our attempts to understand through the use of a dialectical approach. The following is offered by Laing:

> " A certain amount of the incomprehensibility of a schizophrenic's speech and action becomes intelligible if we remember that there is the basic split in his being carried over from the schizoid state. The individual's being is cleft in two, producing a disembodied self and a body that is a thing that the self looks at, regarding it at times as though it were just another thing in the world." (1960, p.162)

Here we see the first Dialectical-Form between self and body. The schizoid state is one of divorce between self and body, the self can see the body as it sees isolated objects. The self is unable to feel its body, there is no identity with the body, the body is not considered to be vital to the self, in some cases the self kills the body. This first Dialectical-Form between self and body holds some potential for understanding the schizoid state, and opens up the second dimension within the Cross-Dialectic, again we must refer to Laing in the relationship between the first and second dimensions. The sense of identity of the self that is lacking in the schizoid state not only relates to the body of the patient, but (and perhaps this relationship to a large extent promotes the development of the schizoid state in vulnerable cases) also importantly to 'others':

> " ... since, *the sense of identity requires the existence of another by whom one is known*; " (Laing, 1960, p.139)

The other exists in a dialectical relationship with the self, in that the other is able to qualify the identity of the self. The other is seen as essentially objective, and this objectivity can help to preserve the 'inner' self as it builds a dialectical relationship that restricts objectification of this inner self, the body and the self remain as an identity because of the dialectical relationship between the self and the other: in this sense each other preserves the other as the other preserves the self (this is seen as distinct from Plato's congenial relationship, where neither self is wanting the other since they belong to the same class, Laing (p.92) sees this situation as potentially dangerous for the schizoid state since if neither self is wanting the other, then the identity of the self is liable to be questioned).

The dialectic between the self and the other can be positioned in a direct relationship that has strong psychological relevance to the schizoid state. A fine example is offered by Deleuze and Guattari (1983) who develop a dialectic around the father-child question. This dialectic allows the primacy of the child in conventional psychiatry to be called into question. This question develops from the schizophrenogenic family as an important factor developing from the schizoid individual. The schizophrenogenic family houses, or at least tries to house, the infinite regression between father and child: the father must have been a child, who must have had a father who must have been a child. Blame is the vehicle that attempts to rest this infinite regression in that the unenlightened approach (see above) fails to see the infinity of regression and only sees a heightened potential for the apportioning of blame. The father must be in 'control' (a precise scientific word that must be upheld and constantly praised) of the child. To lose control is a symptom of the father-child relationship, and as the father controls this relationship, the father is to blame (or at least the father becomes

the next interest for the investigation of the schizoid state). Again we witness an enlightened and an unenlightened approach to the understanding of the father-child relationship. The unenlightened seeks results, conclusions, someone to blame for the schizoid state (and in this special case that 'someone' need not be a personality). The enlightened approach sees that alleviation of the schizoid state as it applies to the father-child relationship is through an understanding of the 'social investments' (as Deleuze and Guattari call them) that perpetuate the schizoid condition. The latter approach offers three 'unavoidable conclusions': firstly, that the Paranoiac father Oedipalises the son (Oedipus, son of Laius, son of Labdacus ...), it must be remembered here that Oedipus unknowingly married his mother Jocasta, and also unknowingly murdered his father Laius; unknowingly because Jocasta and Laius had tried to murder Oedipus as a baby and thought that they had succeeded (Roche, 1958, p.21). Secondly, that regression is categorical and absolute in that sexuality is separated from reproduction, and that all reproduction is at the service of sexuality. Thirdly, the social field determines the communications within and from the family. The complexities of these three unavoidable conclusions cannot be seriously considered here. However, the schizoid state in the second dimension opens up the potential to investigate Oedipal relationships (developing from the Freudian context), relationships of sexuality and social relationships. This third consideration becomes the third dimension within the Cross-Dialectic, the Dialectical-Form between family and society.

In considering the dialectical relationship between family and society further questions develop in different ways, for example, the familial infinite regression (primacy of the child) reveals a naturalistic tendency in psychiatry to

unify *homo natura* and *homo historia* (as we historically retrace our past our more natural characteristics are evidenced, to such an extent that our familial relationships are able to be ignored completely, this represents the reduction of history to nature, a reduction required by the unenlightened approach). In questioning this naturalistic tendency a further dialectic between family and society (in the psychiatric case) could be proposed, where societal relations are able to critique the naturalistic definitions at the familial level. Societal relations take on a Foucaulvian line in the work of Cooper (1978) (who has worked extensively with Laing), when he discusses the 'non-existence' of schizophrenia (p.153-163). The societal relationships dictate the existence of schizophrenia, and Cooper's 'non-existence' refers to " ... actual non-establishment of a disease-entity in the ordinary medical-nosological sense ..." (p.154). This ordinary sense refers to the unenlightened approach, where the medical establishment wishes to give schizophrenia a 'disease-entity', to reduce a social phenomena to a medical phenomena. The unenlightened acts in a repressive manner through the family, and unknowingly the family supports the medical repression (mainly through its presentation of schizophrenogenic examples to the medical diagnostic system):

> " The diagnostic act in psychiatry is thus by no means a medical action as ordinarily understood; rather it is a micro-political intervention that mediates, just as the family also mediates, the subtle repressive violence that characterises the macro-system of a repressive society." (Cooper, 1978, p.158)

The diagnostic act relates to the wanting to establish a 'disease-entity' for schizophrenic patients, a social relationship with the family that affects those within the family and the self of the members. To contrast this disease-entity repressive system Cooper refers to Bateson's (1972, p.206-7) 'double-bind' theory where Bateson attempts to shift emphasis away from the mechanistic organic 'disease-entity' to the micro-social interactional approach (p.156). The double-bind is a social situation " ... in which no matter what a person does, he "can't win"... [and he] may develop schizophrenic symptoms." (Bateson, 1972, p.201). This social situation is designated 'mind-imperialism' by Cooper. An individual in attempting to assert his autonomy is challenged by the familial 'obedience-structure' and if he continues in his assertions he will be labelled as schizophrenic:

> " ... *precisely because he is trying to assert his autonomous existence against a system of mind-imperialism* that is mediated to him by the collusive closed system of his family and conventional psychiatry, as well as by all the other mediating systems." (p.157)

The relationship between the family and society seeks to nominate the patient as schizophrenic. This relationship is seen as collusive and repressive by Cooper as "... we are dealing with a social situation in which a person has had the schizophrenic label attached." (p.159). Again, to counteract this repression a dialectical rationality (p.157) is required which shows the observer as participant and highlights the hypothesis that

"*... the method of studying the field of madness must itself be involved in that madness.*" (p.157)

The social conditions that collude with the familial relationships can be seen as participants in the schizophrenic double-bind investigation, and as participants they are necessarily viewed as being involved in that madness that we call schizophrenia. This then is the third dimension, the Dialectical-Form between family and society.

We can, therefore, witness how dialectics build upon and around other dialectics. The initial self-body dialectic of Laingian schizophrenia could be the primary dialectic. The father-child dialectic is able to cross with the primary dialectic and promote discourse and thereby constitute the secondary dialectic, that leads to a further Cross-Dialectic of family and society. In the example above, therefore, we can see three dimensions of dialectical reasoning at work. It is a contention of this paper that Cross-Dialectics offer a framework for fruitful dialogue, where competition within and across dialectics creates continual dialogue. Schizophrenia can be studied at these three different levels, and at each level the influence of the other two levels will be witnessed.

This cell is a contented-cell showing an ability to balance the Margins debate with the Cross-Dialectic, and it is not influenced by a Satellite cell, only by the constitution of the second and third chapters.

4.5 CROSS-DIALECTICS - FICTION

"Critical Systems Thinking: Real Fiction?" (Wooliston, 1991a, a paper which asserts the 'reality of fiction', see section 2.1.2 for an explanation) is built upon competing dialectics. The first dialectic raises the ability to question the relevance of fictional narrative within Critical Systems thinking. This arises when traditional-modernity forms a dialectic with late-modernity (see section 4.2). This dialectic competes with a second dialectic, between ultra-modernists and post-modernists in an attempt to create a more specific fictional context. This second dialectic centres concepts of fiction firmly within the notion of Critical Systems Thinking, enabling the notion of 'fiction' to be taken seriously within an essentially 'non-fictional' discipline. In effect the question of fictional intent within Critical Systems Thinking has moved from the confines of the modernity debate with Critical Systems Thinking (for example Jackson (1991), Flood (1990a)) to a more specific treatment of fiction with regard to two opposing genres (ie. ultra- and post-modernity). In this way, fiction is given more credence in relationship to Critical Systems Thinking.

It is in this hope, of fictional forms being taken seriously as ideological concepts, that authors of fiction are related to authors of sociological texts (see 4.2 for a summary of this dialectic). It must be noted, however, that this dialectic is only able to operate if there is seen to be a tension with the two previous dialectics ((traditional-modernity - late-modernity) and (post-modernity - ultra-modernity)).

The first Dialectical-Form has already been established in section 4.2, and consequently re-established in section 4.3. Offering an understanding of two dimensions within the modernist genre, these two dimensions enable a more precise understanding of the second Dialectical-Form: between post-modernity and ultra-modernity. This dialectic will be introduced using the work of Hutcheon (1988,1989). An ultra-modernist approach would seek to bound discourse completely within the structures of imaginative control. The term is used by Hutcheon (1988) to represent writers of the 'French new novel' (*nouveau roman*). Such writers, for example Sukenick, Federman, invent their own reality through positioning the artist as supremo, and privileging themselves unconditional artistic freedom. The artist is supremo precisely because the reality created allows unconditional artistic freedom as everything occurs in the artist's imagination. Reality is the artist's imagination. Federman calls this reality *Surfiction.*

> " ... the only fiction that still means something today is that kind of fiction that tries to explore the possibilities of fiction that constantly renews our faith in man's imagination and not in man's distorted vision of reality - that reveals man's irrationality rather than man's rationality. This I call SURFICTION. However, not because it imitates reality, but because it exposes the fictionality of reality." (Federman, 1975, p.7)

No meaning pre-exists language as language creates meaning as it develops. To write is to produce meaning, and again, the supreme writer is the artist, the artist is the supreme creator of meaning. When the ultra-modernist artist creates

meaning he does it to abolish the notion that reality is truth. As there are no truths external to fiction, life and fiction are no longer distinguishable, therefore the author and reader are given an equal footing.

In contrast to Ultra-modernism, Post-modernism would angle the discourse at the reality of itself as a constitutive element within modernism. Postmodernism posits a multivarious reality where reality is forced into discourse, and text and world share similar problematics. Postmodernism, as one would expect from this introductory passage is not 'one' thing that can be readily understood and critiqued, it is many things, a response to the many contexts that permit intellectual construction. McHale (1987, p.4) provides the reader with a flavour of the diversity of postmodernism:

> "... there is John Barth's postmodernism, the literature of replenishment; Charles Norman's postmodernism, the literature of an inflationary economy; Jean-François Lyotard's postmodernism, a general condition of knowledge in the contemporary informational régime; Ihad Hassan's postmodernism, a stage on the road to spiritual unification of mankind; and so on."

Postmodernism cannot be seen as a new paradigm (in the Kuhnian sense, see chapter eleven for a more detailed discussion of paradigms), as it works from within existing paradigms (Hutcheon, 1988). It works to clarify its own assumptions, no master narrative is posited (cf. Lyotard, 1984), the sovereignty of the subject is questioned (cf. Foucault, 1977), power is not seen as a unitary

concept (cf. Foucault, 1977), questions rather than answers are offered, post-modernism as problematic rather than a concept (cf. Burgin, 1986), from an epistemological dominant (modernism) to an ontological dominant (cf. McGrath, 1987), continuous questioning, a critical unrest (Russell, 1981), presenting the unpresentable (cf. Lyotard, 1984), the postmodernist spirit lies coiled within the modernistic spirit (cf. Hassan, 1982). All of these problematics come under a postmodernist orientation.

To relate Ultra-modernism to Post-modernism is to show that the author can be at once supremo (Ultra-modernist) and non-existent (Post-modernist). This dialectical relationship permits questions of authorship to be seen across these two wide spectrums. If we follow Federman, we believe that the author creates his own reality and the meaning of 'author' has been created by the author. If we follow Derrida, we believe that the author is the centre of a work and a centre that has no fixed locus. In the postmodernist problematic the author can never rest at the centre, since the centre is a kind of non-locus where an infinite number of signifiers come into effect, language pervades, and the centre is never absolutely present. The notion of authority becomes more significant when related to conditions that are not predominantly fictional and this leads us onto the third Dialectical-Form.

The third Dialectical-Form compares authors of fiction and sociological authors. The preceding two Dialectical-Forms have considered four classes of modernism, we shall now take the last, postmodernism, and consider its sociology and its fiction. The sociology of postmodernism can be represented by Foucault,

while its fiction can be represented by Rushdie. Foucault (1991) in his *archaeological* investigations attempts to describe historical and social archives. Five rules (p.59-60) are relevant to Foucault's archaeology:

(1) What is *sayable*? Limits, forms, for descriptive science and literary formulation.

(2) What is *conserved*? Limits, forms, rituals, publicities, reusability.

(3) What is *memorised*? Limits, forms, validity, relationships between present and past statements.

(4) What is *reactivated*? Limits, forms, reconstitutions, interpretations, systems of appreciation.

(5) What is *appropriated*? Limits, forms, access to discourse, control of discourse.

The archaeology is not concerned with the origin of discourse, but its exteriority, what is commented upon. The discourse says, conserves, memorises, reacts, and can be appropriated in the manner in which it does this. Rushdie has appropriated a discourse concerning the history of Pakistan. In *Shame* (1983) the country being written about is not quite Pakistan, but what could be called an 'off-centre' Pakistan (Hutcheon, 1989), *memorising* certain things and forgetting others. History constructs its objects, the Pakistan of forty years ago is

the Pakistan of today because it is today that we *reactivate* the form that existed then, and it is only through the forms that are *conserved* that we are able to *appropriate* and say the *sayable*. In Rushdie's *Midnight's Children* (1981) the self-reflexivity of the text points in two directions (Hutcheon, 1989), the first direction shows events presented in the narrative, and the second dimension shows the art of this narrative. The incidence of these two directions shows that narration and interpretation cannot be separated, as the reader is always aware that what is being narrated cannot escape its interpreted nature, in this sense Rushdie's work appropriates sociological discourse as it questions the validity of what is presented in asking: how can the author (be it classified fact or fiction) escape the art of narration? Multiple plots, interrupting parentheses serve to disrupt the linear-sequential, patriarchal, unitary nature of history. History does not exist in a unitary form awaiting the pressing of an historical code in order to enter into a different epoch. History

> " ... is a kind of fiction in which we live and hope to survive, and fiction is a kind of speculative history ... by which the available data for the composition is seen to be greater and more various in its sources than the historian supposes." (Doctorow, 1983, p.25)

The historical features of fiction, the things that give meaning to a text such as *Midnight's Children* interrelate with the fictional features of history, the features that only allow some sections of history to be conserved and accessed and memorised. This latter feature is relevant when *Saleem* (in *Midnight's Children*) receives an injury to his head, he loses his memory, and as narrator

begins to erase the multiplicity that existed previously and replace it with a doubting narration. Every utterance is unsure, dates, places, people become confused. This split in Saleem's head symbolises Pakistan's political split, and the healing of his head the political unification. The fiction becomes historical, as the narrator cannot escape current problematics. The relationships between Foucault's and Rushdie's projects have been highlighted in the text, and we can begin to see the relevance that fiction and sociology (in this case a historical sociology) have for each other.

In summary, the first dialectic creates the potential of using fictional devices within Critical Systems Thinking (given in section 4.2 and critiqued in section 4.3); the second dialectic gives credence to post-modernity's use of fictional devices; and the third dialectic draws out comparisons with a post-modernist author of fiction and a postmodernist sociological author. All three dialectical forms are creating discourses inter-dependently, all three asserting that fictional devices should be taken seriously within Critical Systems Thinking.

This cell is contented as the Cross-Dialectic has shown to be highly relevant to the fictional debate, the following section however is unable to evidence such contentment.

4.6 CROSS-DIALECTICS - WILL

Cross-dialectics in "Will and Representation of Paradigmatic Commensurability" (Wooliston, 1991b) is given a theoretical framework which begins with Foucaulvian notions that

> "... theory does not express, translate, or serve to apply practice. But it is local and regional ... not totalising ...[and] it is not to 'awaken consciousness' that we struggle ... but to sap power ... it is an activity conducted alongside those who struggle for power, and not their illumination from a safe distance". (Foucault, 1977, p. 208)

Power and its relationship with knowledge is, therefore, given centre stage. The relationship between theory and practice is not an application of an isolated phenomena, but a desire to control. The hierarchical nature (though dynamic and therefore always temporaneously bound) of Cross-Dialectics is used to question the inflexibility of other hierarchical organisations. Inflexibility breeds from the 'positivistic' aspects of hierarchy. These aspects include security, control, communication and performativity, and their inflexibility can be evidenced through a highly 'practical' account of 'Matching an Organisation's Planning and Control System to its Environment' (Cowen and Middaugh, 1990). In this account, the authors build two models in an attempt to formulate a better commitment to corporate strategy, "... to get management committed to a cor-

porate strategy and implement it with vigour and effectiveness." (p.69). The aim is to avoid short-term operational priorities upsetting longer-term concerns. The two models represent a Planning and Control System (PCS) structure and a PCS process. The PCS structure is triangular, three sides representing: Strategy formulation (ensuring goals to be achieved); Operational planning and Control processes (implement short term plans and controls ensuring proper implementation); and Executive Compensation (rewards for superior performance consistent with organisational goals/strategies). The PCS process is rectangular (four of them) and affects the structure. In this process, there are 'design considerations' of Management style, Corporate culture, Corporate mission and goals, and Organisational structure. There are also 'process considerations' of purpose defined, internal consistency, and appropriate level of complexity; and management perceptions of relevant goals, criteria of assessment and reward systems. These two sets of considerations must involve conceptions of Dynamism, Heterogeneity, Hostility, and Technology (all Environmental concerns).

This account is a case for a positivistic hierarchy of concerns, beginning with the organisational structure, and ending with individual goals. The whole aim of the account is be sympathetic with the concerns of the individual workers, but as long as they are congruent with the organisational goals. How then, do the aspects of security, control, communication and performativity relate to this paper? Security relates to all organisational members being "... self-directed and strive[ing] to make decisions in the corporate interest" (p.74). The sense of security derives from the sense of enhancing the corporate interest. Control is a major concern in this paper, since the authors wish to control short term priorities in an attempt to maintain a 'properly' implemented long term strategy. Con-

trolling "...the cognitive and perceptual limits of the decision makers" (p.71), controlling employees "... to be directed to make decisions in the corporate interest" (p.74), and controlling "... basic principles ... [to] create a more consistent organisational climate" (p.74). Communication is vital: "The purpose and end result of the strategic planning process is an articulation of the courses of action management will follow in the long run to ensure the organisation's goals are accomplished" (p.70). The emphasis is upon managerial decision-making (as opposed to 'other' decision-making) and (highly inflexible) 'long term' planning. Performativity is given a more definite form through its relationship with the reward process: "... for any performance-based incentive system to work, the affected managers must understand the relationship between performance and rewards". Any 'soft' relationship leads to managers perceiving "... little relationship between their performance and the rewards given. Instead they often perceive that rewards are a function of their relationship with their superior or the financial performance of the organisation" (p.81). The inflexibility of the relationship between performance and rewards is a further indication of the general positivistic notions of hierarchy.

The four dimensions of security, control, communication, and performativity have all been related to a positivistic account, that exemplified conventional (and thereby, inflexible) notions of their use in a 'practical' manner (at a large industrial products firm). These conventional notions must be compared with the Cross-Dialectical approach advocated throughout this paper. A Cross-Dialectical approach that would not isolate control from communication or isolate individual performance from organisational performance, a livelier dialectic between the individual and the organisation would be proposed, where

mediation rather than regulation (of the individual within the organisation) would be the concern. Further limitations which Cross-Dialectics must guard against include a distrust of innovations (innovations must be critiqued through a series of interdependent dialectics eg. technological advancement - technological alienation); a distrust of the irreducibility of the 'other' (in focusing upon an issue the 'other' of the issue is always neglected. It is neglected because the other can never be reduced. Functionalists such as Blau (1974) and Parsons (1952) aim to reduce the 'other' through simple systematic division. This act represents a distrust of the irreducibility of the 'other'. The 'other' simply becomes something to be guarded against, an anomaly, an indiscretion, a mistake), and a simplification of power/knowledge relationships. Blau and Parsons differentiate in order to control. Blau (1974) uses deductive theory in order to give lower level propositions a strength that conforms to all propositions. This allows a differentiation between deduced components that engenders more efficient forms of administration. Parsons (1952) differentiates into motivational, cultural, and symbolic in order to create a 'concrete action system' (p. 36 - 45). If the necessary hierarchical nature of Cross-Dialectics is to avoid an 'Absolutist' (Jackson and Willmott, 1987) status, then the issues raised above must be taken seriously.

If such issues of power/knowledge relationships are taken seriously, then there is some hope for a Cross-Dialectical science to move towards a 'non-absolutist' science. Jackson and Willmot (1987) define a non-absolutist science as seeing dualism as irremediably indeterminate; as wanting a more social process of pluralism; as deriving authority from 'significant others'; and as seeing

the status of scientific knowledge as not just open to epistemological ideas, but ideological, political and moral ideas also. It is with these general prescriptions of Cross-Dialectics that we are able to re-formulate its objectives.

We can see that this section makes no attempt to co-ordinate the framework of the Cross-Dialectic with the 'Will' debate. The force of the vertical flow is shown to be too strong for the horizontal flow. The re-definition of Cross-Dialectics has required that a power-knowledge reformulation dominates any notion of 'will to power'. The Cross-Dialectic itself operates in three dimensions. The first dimension operates at a positivistic level in a practical context. The second dimension operates at a Functionalist level. And the third dimension advocates a non-absolutist science. The first dimension uses the objectives of the Cross-Dialectic to open up the positivistic content of a traditional and commonplace management theory. The Cross-Dialectic can relate the results of such an exercise to the two other dimensions. The second dimension similarly relates the work of Parsons and Blau to a Functionalist position that fails to respond to the demands of the Cross-Dialectic (most notably a simplification of power - knowledge relationships). The third dimension would relate the two previous positions (the positivistic and the functionalist) to an 'Absolutist' position that requires the opposition of a 'non-absolutist' science. This is tentatively given and the third dimension can be constructed.

During these three stages many Dialectical-Forms emerge, though they appear unguided by the dominant debate: the 'Will' debate. This lack of guidance given by the will debate in this section forces the cell to become a satellite cell. The satellite cell then forces a 'will to critique' of cell 4.5, the Cross-Dialectic -

Fiction cell. The critique centres on the nature of the Cross-Dialectic in this contented cell. To recall, the Cross-Dialectic consists of the Traditional-modernist - Late-modernist Dialectical-Form; the Post-modernist - Ultra-modernist Dialectical-Form; and the Fiction - Sociology Dialectical-Form (please refer to the concluding remarks of cell 4.5 to save reiteration of the main points). This critique demands that firstly the Dialectical-Forms must be more sharply formulated (the first Dialectical-Form is considered in section 4.2), and secondly that the relationships between the Dialectical-Forms be highlighted with regard to the first critique. The second Dialectical-Form requires formulation of opposing tensions - the definition of the author is sufficient - as more examples are required. The third Dialectical-Form is well balanced but the opposition needs to be expressed further. In the desire to establish a rapport between fiction and sociology the opposing tensions within this third Dialectical-Form has been neglected with regard to the second critique. The second Dialectical-Form should capitalise upon the 'modernist' commonality with the first Dialectical-Form. The whole modernist project should be highlighted and the four developments (Traditional, Late, Ultra, and Post) related accordingly. The third Dialectical-Form should highlight the existence of fictional and sociological (if at all) discourses in the two other dimensions, this would help as a response to the first critique in that an opposing tension would be given more space (as the Traditional, Late, and Ultra are restricted to literary forms of modernism). The utility of this satellite cell has now been shown as an ability to augment the efforts of the bordered contented cell.

4.7 CROSS-GENERICS - MARGINS

It is never easy to say 'oh yes, that's a biological concern' or 'yes, I think that's a linguistic issue'; or maybe its too easy, too easy to categorise. This is why it seems hollow to suggest, for example, that Habermas is just a sociologist. Does Habermas not deal with linguists such as Austin and Searle, hermeneuticians such as Gadamer, and psychoanalysts such as Freud? In which case, is Habermas just or mostly a sociologist, or indeed a complex combination of various ways of thought. I prefer the latter definition, however, with regard to Habermasian knowledge-constitutive interests, this seems to be predominantly a sociological message. A sociological message that combines the messages of linguistics, hermeneutics, and psychoanalysis. The knowledge-constitutive interests consider the epistemology of such disciplines in order to show that "... there is no single mould into which all knowledge can be compressed." (Giddens, 1990, p.127). These interests show sociologically how we relate to knowledge. There exist three aspects of human society: Labour, Interaction, and Domination. These three aspects accord with three disciplines of study: Empirical-analytic; Historical-hermeneutic; and Critical Theory. These three disciplines of study relate to the three knowledge-constitutive interests: technical; practical; and emancipatory. Habermas's Cross-Generic between psychoanalysis and hermeneutics initiates the development of three societal aspects. Psychoanalysis interprets the dreamwork, and realises the limits to what can be expressed when repressions block access to the unconsciousness. This repressive force is analogous to the domination of the language of the empirical-analytic sciences, in that in the natural sciences it is the 'individual' that is acted upon, whereas

psychoanalysis is attempting to create the conditions for an autonomous individual, one that can control his own destiny. Psychoanalysis continues to probe these repressive forces, and if successful, an analogy can be drawn between the patient's actions and the language of the historical-hermeneutic sciences, as now the patient is able to control the repressive forces that previously restricted communication. This change from the empirical-analytic to the historical-hermeneutic constitutes a change of behaviour which becomes analogous with Critical Theory. Therefore, we can see that psychoanalysis can be compared to critical theory. This complex process began with an initial Cross-Generic between psychoanalysis and hermeneutics, expanded to the empirical sciences in order to consider the existence of repressive forces, and finally returned to hermeneutics with a different perspective upon the role of psychoanalysis: psychoanalysis allows for a critical hermeneutics "... as a type of depth hermeneutics which incorporates explanation [empirical-analytical sciences] and understanding [historical-hermeneutic sciences] into a science orientated toward methodical self-reflection." (Thompson, 1985, p.83).

What, then, are the issues being related to in 'Margins'? 'Margins' is an epistemological attempt to show how we sociologically maintain normative systems through knowledge networks. An example of an epistemology of psychology is given to indicate how closely the margins of thought and critical thinking are inter-related. In this example we can see a process at work: the way in which we do things collectively (sociology), the way in which we make sense of this (philosophy), and the way in which we attempt to emancipate ourselves form this collective and (non-)sensical repression (psychology). The way in which we organise knowledge is proposed through a Habermasian knowledge

constitutive-interest framework interacting with a Foucaulvian notion of interpretive analytics (as discussed in 4.1); this could be called the philosophical generical-form, as the way in which we attempt to make sense of anything is determined by power-knowledge relationships . The way in which we collectively wish to organise such knowledge is in many senses a sociological wish; this could be called the sociological generical-form, to exemplify this sociological wish we can maintain our relationship with Foucault and consult section 4.5, where the work of Foucault is related to the work of Rushdie. This sociological Generical-Form represents the collective will to organise, in organisational life knowledge becomes another tool for efficient allocation. Crossing this sociological generic with a psychological generic demonstrates how psychology (represented in this case by Laing (1960), Deleuze and Guattari (1983) and Littlewood (1990), please consult section 4.4) will not tolerate an efficient allocation of knowledge, as efficiency treats the individual as a tool to be empirically exploited. Such empirical exploitations lead to the psychological 'self' through schizophrenia experiencing 'thought disorder' (Rochester and Martin, 1979). The psychological Generical-Form challenges the interests of the philosophical and sociological Generical-Forms at source, since the psychological generical-form (through the work of Cooper, 1978 for example) challenges the appellation of schizophrenia as 'thought disorder'. 'Thought disorder' implies the solitary malfunctioning of a schizoid individual. Such a labelling assumes the primacy of cognition over discourse. This assumption then enables the psychoanalysis to deal with one, solitary, subject, because it is only this subject, in his solitary 'thought disorder' who is mentally ill. As we have discussed previously, this isolation of the schizoid patient fails to deal with the sociological complexities of the schizophrenic phenomena. In order to show a

greater willingness to deal with such complexities we must rename schizophrenia (previously named 'thought disorder') as 'language disorder', since the disorder of schizophrenia is an inability to maintain situational contexts through dialogue. The disorder (and perhaps this label requires some attention also) is not within the 'consciousness' of the subject, but within the subject's ability to communicate, and the ability to communicate becomes an order of language (this, however, is not to replace the 'sovereignty of consciousness' with the 'sovereignty of language' but to recognise that the schizoid subject is a sociological subject that is identified through language and communicates using language, and it must be through language that this disorder is tackled), where the schizoid subject uses a radically different dialogue that uses a different frame of reference that requires a different approach when attempting to understand it. A Citation of Jakobson demonstrates the importance of dialogue " ... to tell a story outside the frame of a dialogue, and without being interrupted, is for many natives an utterly artificial situation ...." (1964, p. 163). Here the empirical enforcement of psychology creates the frame and the interruptions, interruptions that search for 'thought disorder' rather than 'language disorder'. In this psychological genre, therefore, we can appreciate the need for dialogue (language, communication) alongside the need for (the study of) disorder (through schizophrenia). The sociological efficient allocation of knowledge, is in the schizophrenic case, thrown into a state of disorder through the invention of knowledge as language. In this example, therefore, we can see a process at work: the way in which we do things collectively (sociology), the way in which we make sense of this (philosophy), and the way in which this is thrown into (temporary) disorder for the interests of the

emancipation of the subject (psychology). These three generics cross and generate interesting debate across all three classifications as well as in each classification.

There seems little need within systems thinking to further develop a thesis upon the benefits of 'Cross-Generics', as many examples make such a thesis redundant. For example Nodoushani's 'What Systems Thinking can learn from History' (1991) springs to mind as a recent example, while the plurality of systems disciplines would not be here without the foresight of von Bertalanffy's 'General Systems Theory', and the many changes to its structure.

This section is a contented cell, showing an ability to formulate a marginal debate (a consideration of the repressed subject, as marginalised individual) within the Cross-generic framework. Competing Generical-Forms have been shown (Philosophy - Sociology - Psychoanalysis) within a marginal context (the study of schizophrenia).

4.8 CROSS-GENERICS - FICTION

Are we able to stand between literature and science and question the status of each? Is Cross-generics an option? Porush (1988) in his paper 'Cybernetic Fiction and Postmodern Science' believes so. Porush suggests that literature can question the status of science:

> "Two related scientific developments have conspired to give literature the power to contest science's supremacy as an epistemological force, and on science's own terms." (p.373)

The two related scientific developments are the rise of cybernetics and the postmodern paradigm in science parallelling the literary one. In Weiner's *The Human Use of Human Beings* (1954) we can view cybernetics as a science that assumes that everything can be modelled in a system of information (an attempt to return science to a neo-classical position of clarity, mechanism, by the abolition of human organic incompleteness). In postmodern science we can note a similar 'point of departure': a privileging of a self-conscious observer/scientist, and therefore a composer of narratives; and a stressing of the paradoxical power of structures of information and codes (Porush, 1988, p. 377). Paradoxical, as postmodern science considers codes to be cultural artefacts, therefore, incomplete and inconsistent (and therefore bound by narrative forms,

and in this sense information and codes become the self-conscious agent, the self-conscious agent is closely inter-related to the paradoxical codes and information).

Following Postmodern science we can consider cybernetics as "the quintessential science of narrativity, if you accept that any exchange of information creates a narrative" (Porush, 1988, p.379). The self-conscious agent centres the narrative, while the information and codes provide the narrative forms. This self-conscious agent can as easily be a scientist or a fiction writer. If a fiction writer, then we can exemplify the narratives of such cybernetic fiction writers as Calvino or Pynchon. In Cybernetic fiction we can see a battleground between human and artificial intelligence (Porush, 1985). Cybernetic fiction through employing cybernetic principles is able to transcend the 'servo-mechanistic' system of artificial intelligence and reveal the 'irreducible otherness' of human intelligence. This is a clear example of the manner in which literature is able to contest science's supremacy as an epistemological force. In this way, the self-conscious agent through the incompleteness of narrative forms favours the 'irreducible' others of further human (narrative) forms. For example, in Calvino's 'Invisible Cities' (1974) Kublai Khan wishes to reduce the conquests of his empire to a game of chess (to a Baudrillardian simulation (1983): a system of artificial intelligence). But this secondary simulation (literary codes to geometric codes; the primary simulation being from the verbal accounts of Marco Polo's (imagined) visits to the kingdoms of Kublai Khan to the literary codes of the Kublai Khan) showed the empire to be invisible through its inability to be evidenced (Harris, 1990):

> "By disembodying his conquests to reduce them to the essential, Kublai had arrived at the extreme operation: the definitive conquest, of which the empire's multiform treasures were only illusory envelopes. It was reduced to a square of planed wood: nothingness ..."
> (Calvino, 1974, p. 123)

Through the use of the canons of cybernetic thinking, Calvino has been able to demonstrate the immense limitations of artificial intelligence, in the sense that artificial intelligence attempts to create its own world, separate from the 'organic incompleteness' of human life. This attempt is valid only in its own terms (as anything that exists is valid on its own terms), however, its 'secluded completeness' isolates it to such an extent as to make it invisible to 'human intelligence'. The measure of artificiality is forced to an extreme position of artificiality which is shown to lack meaning: without meaning the artificial is ignored, it becomes nothing, it becomes a 'square of planed wood: nothingness ...'.

Calvino continues his cross-generics between science (artificial intelligence) and literature (human intelligence), where in 'Cybernetics and Ghosts' (1990), he incites a relationship between degrees of limitation of choice (phrases, behaviour) and a complexity of the rules of language. Leading to its extreme case where an extreme poverty of ideas leads us to an all-embracing code of rules (a system of artificial intelligence, where the artificial boundaries restrict the human creativity, the rules dictate what can be discovered, what can be remembered, what can be accessed, what can be said, what constitutes knowl-

edge). In *Invisible cities*, this poverty of ideas led Khan to reduce everything to a game of chess. It may be revealing to suggest, therefore, that Cybernetic fiction in using Cybernetic principles has been able to "... demonstrate its superiority of scientific narratives as an epistemological force". (Porush, 1988, p.380). The system of artificial intelligence becomes the cybernetic project in its scientific guise, and this organising system is shown to be vulnerable to 'all-embracing codes' that inevitably lead to human creative poverty. In this sense the author is not merely a conduit for genius but a device to probe unreachable linguistic combinations:

> "The struggle of literature is in fact a struggle to escape from the confines of language [as another artificial language]; it stretches out from the utmost limits of what can be said; what stirs literature is the call and attraction of what is not in the dictionary" (Calvino, 1990, p. 234)

It is here that we are witnessing the victory of the human over the artificial, the literary over the scientific. In this victory postmodern science is more enriched than postmodern literature, since the self-conscious scientist in being made aware of the incompleteness of his narrative forms is allowed both a greater scope in 'scientific discoveries', and an incentive to create more inter-active forms of intelligence absorbing devices (simultaneously recognising its dangers with regard to creativity). The interests, however and the confines of language are maintained between and within the disciplines of science and literature, but an unlikely candidate such as cybernetics has shown that science and fiction can

enrich each other's epistemologies. If cybernetics can be taken seriously as a fictional form then surely science is open to far more sophisticated inter-relationships with literature.

This contented cell permitted the Cross-Generic framework to develop the fictional context in a serious manner, thereby showing the balancing of vertical and horizontal flows.

4.9 CROSS-GENERICS - WILL

An intrinsic inter-relationship between art and philosophy is developed in 'Will...', Wooliston, (1991b). The inter-relationship proposed exists as 'forms of representation.' It is felt that artists are sometimes able to represent philosophically complex arguments within one artistic representation. We must, however, develop a clear understanding of the two 'Wills' that are significant within this debate. We are forced to recognise the importance of this because of the dominance of the vertical flows in the two previous considerations in the 'will' debate (sections 4.3 and 4.6 consequently operating as satellite cells). The first will develops from the philosophical Generical-Form and is called 'will to knowledge'. The second will develops from the artistic generical-form and is called 'will to appearance'. The will to knowledge is a demand for certainty (Nietzsche, 1887, section 2) which develops into the 'cause-effect' system of knowledge, as the cause resolves (makes certain) the effect. To know fully the cause, in all its complexity (remembering not to confuse the effect with the cause,

thought to be one of the *Four Great Errors* (Nietzsche, 1990, p.57) of thought) is an ability to know the effect. But is the will to knowledge, in this necessary development of the 'cause-effect' system, necessarily a system of truth?

> "... the law of causation is a belief so thoroughly acquired by practice and so completely assimilated, that to disbelieve in it would mean the ruin of our kind. But is it therefore true? " (Nietzsche, 1924, p.497)

For philosophers the will to knowledge comes as an enforced self-control, note the third Maxim and Arrow of Nietzsche (1990, p.33): " To live alone one must be an animal or a god - says Aristotle. There is a third case: one must be both - a *philosopher*.". All truth comes to us through an enforced self-control, we will find no truths by chance, as by chance they offer no credence for the cause and effect system. We contrast this enforced self-control with the abandonment of self-control for the artist. Such abandonment registers as a morally inferior position with regard to the philosopher's moralistic enforced self-control.

> " In regard to knowledge of truths, the artist possesses a weaker morality than the thinker; he does not wish to be deprived of the glittering, profound interpretations of life and guards against simple and sober methods and results. ... [He upholds] the fantastic, mythical, uncertain, extreme ... he thus considers the perpetuation of his mode of creation

more important than scientific devotion to the true in any form, however plainly this may appear." (Nietzsche, 1886a, section 146)

The artist glorifies in his fantastical and mythical inventions as art is the "... cult of the untrue..." (Nietzsche, 1887, section 107) in manifest opposition to the philosophical will to knowledge. For the philosopher the truth is found in that which is most difficult to apprehend (Nietzsche, 1886b, section 26), that which is most distant from his personality. The contrast with the artist is again exacting since the artist revels in the " ... good will to appearance ... " (Nietzsche, 1887, section 107), that which is most easily to hand, that which most readily corresponds to his position and his persuasions, his personality. The cult of the untrue is the cult of glorification, glorification of personalities, of heroes, of gods. To make this glorification easier to swallow it is made aesthetically pleasing "... we are given eye and hand, and above all a good conscience, to *enable* us to make of ourselves such a phenomena ..." (Nietzsche, 1887, section 27), this is the practice that art admires, the eye and the hand of the artist working in contrast to the mind and vision of the philosopher.

In this introduction to the sensibilities of the artist and the motivations of the philosopher we set up a Generical-Form, a competing tension between the classifications of Art and Philosophy. They contrast in many ways and the 'will' debate shows this most markedly in the phraseology of the two wills, the artistic 'will to appearance' and the philosophical 'will to knowledge'. Armed with these two distinct notions we can propose a Cross-Generics between philosophy and art.

The Cross-Generic must first of all be charged with two views within each discipline that require some clarification within the other discipline. From the philosophical discipline we are concerned with the grounding of a theory, and its opposite, groundlessness. From the artistic discipline we are interested with a similar notion, though, following on from the definitions given above, the notion is to represent so that the eye and the hand can follow the aesthetic (I need here to rely upon the reader to consult the relevant texts in order to benefit from this Cross-Generic). The relevant philosopher in this discussion is no philosopher in particular, rather the concern that philosophers share that a particular theory should be grounded in an 'island of certainty'. Examples of such philosopher's who seek 'islands of certainty' include Gadamer's totality as textual reference in the 'hermeneutic circle' (1975); Kuhn's 'normal science' (1970a); and Habermas's 'communicative competence' (1970). The islands of certainty are ideals, things that are worked towards, things that we must retain some confidence in, things of constancy. The relevant artist is Escher.

We can present philosophically complex arguments within one artistic representation, and this is essentially the case for this Cross-Generic. This is felt to be the case with Escher's 'Relativity' (1953) (lithograph to be found in Hofstadter, (1982)). 'Relatively' has no ground (it would defy gravity if gravity was relevant in the act of representation). There is no point at which you can say 'oh yes, it develops from here upwards'. This is one of the paradoxes of relativity, it demonstrates hierarchical notions outside of being hierarchical itself. (Escher achieves something similar in 'Order and Chaos' (1950)(see Hofstadter, (1982)) where order reflects chaos and cannot exist without chaos, but order cannot be chaos. In this sense order and chaos form a 'unity of difference', in

that both order and chaos require each other (the unity) but they require each other in radically different ways (of difference)). Relativity shows various people 'ascending' and 'descending' stairs. Looking parallel to the lithograph we see two people 'ascending' and two people 'descending' at the expense of five people appearing to be neither 'ascending' or 'descending', because our notion of ascending and descending usually operates in one dimension, the vertical dimension, and Escher's lithograph offers a relativity of dimensions. If we tilt our head ninety degrees to the right we catch one person 'ascending' at the expense of ... if we tilt our head ninety degrees to the left of the parallel we see one person 'ascending' and two persons 'descending' at the expense of .... The expense in each case is the uni-dimensional perception of ascension and descension. Escher's 'Relativity' is, therefore, a representation of contradiction and asks 'what is it that we are ascending to?' Depending upon your view you see ascendancy or descendancy or a state of chaos. Can the staircases, therefore, be assumed to be 'islands of certainty' as Hofstadter (1982) suggests? Only in that they defer presence (of other 'islands of certainty'; in that in order to create an order, a certainty, they must displace other 'islands of certainty'. If this is the mechanism of signification, then the staircases always fail to be 'islands of certainty' because they show that previous 'islands of certainty' were uncertain, because they were replaced by more certain 'islands of certainty'. The islands do not signify certainty, but a monopolisation of space in the name of certainty. This monopolisation is explained by the context of relativity that Escher portrays. A context that is relevant in any theory of signification), and in deferring presence they signify uncertainty.

It is hoped that this interplay of art and philosophy has offered a useful interpretation of the groundlessness of philosophy. Groundlessness in the sense that all unities are held together through complex opposing tensions (in this case the Generical-Form of Art and Philosophy), and that any attempt to 'ground' any theory will inevitably lead to a distrust of the irreducibility of the 'other' (to 'ground' in the sense of constructing a systematic theory of the nature of man and society through an *apriori* structure (exemplified by the three philosophers above with their 'islands of certainty'); and the 'other' in this sense refers to that entity outside of the focus of any debate/activity/performance, an entity that holds together the point of focus by being outside the point of focus). Cross-Generics must fight against any attempt to reduce the nature of man and society to a series of rules and must also fight any distrust of the irreducibility of the 'other'. This fight is evidenced in this entire thesis.

This is a contented cell. The competing generical-forms have been explained, and the 'will' debate has been sufficiently considered within the Cross-Generic framework. The vertical and horizontal flows have been shown, therefore, to be balanced.

4.10 PLURALISM - MARGINS

The 'Margins' (Wooliston, 1990) argument assumes a pluralistic notion of power/knowledge relationships. The treatment of power/knowledge relationships within the thesis necessarily questions the unity of interpretations that

are forced through when comparing the work of two authors (in this case Foucault and Habermas). For this reason, the work of both authors is treated as an on going dialectic, resolution is possibly forced at the 'conclusion' stage of the paper. The main resolution from the 'Margins' argument was the opening of four 'binary positions' (see section 4.1), the meta-binary position being that of Foucault's and Habermas's conceptions of 'power'. The issue surfaces as a debate concerning modernism and postmodernism, which is currently seen as relevant within Critical Systems Thinking (see, for example, Jackson (1991), Flood (1990a), though Jackson refers more to Lyotard than Foucault for his understanding of postmodernism) and represents a pluralistic attitude that needs to be maintained.

This cell shows an inability to allow margins to be debated within a pluralistic framework. The vertical flow dictates the horizontal flow. The pluralistic framework, in defeating the claims of the margins debate, forces this cell to become a satellite cell. As this cell borders the contented cell 4.11, it can operate its will to critique upon it. There exists one main critique of section 4.11: it could attempt to clarify the definition of pluralism within this fictional context. The definition of pluralism from chapter two suggests that one subject (thus employing Cross-Generics) cannot be self-sustaining (thus employing Cross-Dialectics) or self-justifying (thus employing Dialectical-Forms). Reference is made throughout to these three frameworks, however, the whole section would benefit from a clarification of their relationship with Pluralism through this previously employed definition.

4.11 PLURALISM - FICTION

The search for Margins in the attempt to suspend the mainstream within a discipline requires a 'call and attraction of what is not in the dictionary' (Refer to Section 4.8, 'Calvino debate'). What is not in the dictionary is what is not talked about, this is what the search within the Margins calls for. Here we can see a pluralistic relationship between 'Margins' and 'Fiction'. We can use the model of fiction, the forms, ideas used in fictional discourse, to search for new words for the 'Critical Systems Thinking dictionary'. As the dictionary develops (along with our conscious over-dependence upon language) so the cry for a pluralist intent develops that must learn

> "how to talk about isomorphic concepts between disciplines and yet do full justice to the distinct [historiographic] tonalities and values that these concepts have when they are embedded in different sites. The double gesture of recognising global structures and yet valorising local sites is...both necessary and inevitable." (Hayles, 1988, p.321)

As it is with Foucault's Archaeology (1970) that sees individuals not constituting culture, but culture constituting individuals. What follows, is that different cultural sites manifest similar principles of organisation. Similar organisational tropes appear in grammar, biology, political theory, and psy-

chology (Hayles, 1988, p. 312). Foucault recognises the structure and depicts the localised site. Eco (1989) recognises the organisational structure in writing forms:

> "Writing a novel is a cosmological matter...you must first of all construct a world, furnished as much as possible, down to the slightest details...the words will practically come on their own" (p.20-24)

Eco's recognition of the detail of the localised site relates to the 'cosmological matter' of writing a novel. The imagination asks for detail and in that detail a new world is created. The organisational constraints, however, are all important:

> "It is necessary to create constraints, in order to invent freely...in fiction, the surrounding world provides the constraint. This has nothing to do with realism (even if it explains also realism). A completely unreal world can be constructed." (p.25)

The 'unreal world' is not a tenable proposition within conventional Philosophy, a Philosophy obsessed with a Heideggerian 'metaphysics of presense' that uses epistemology to tell us how 'objective' things are, and that uses philology to tell us how well our words 'hook on to the world' (Rorty, 1982, p.132-4). Rorty looks toward Frege's 'first philosophy' of semantics rather than his epistemology and Russell's confusion of epistemological and semantic concerns; and names this 'physicalistic semantics'. The Pluralism Fiction is not

recognised in physicalistic semantics. Physicalistic semantics offers an 'ideal causal explanation of linguistic behaviour' that decides whether terms are 'right' or 'wrong' (a determinism embedded within a 'cardinal paradigm' that focuses on platonic essenses to register correctness beyond mind and matter). All we have is a theory of nature that we must correspond with, a modern day counterpart of 'atoms and the void'. This monistic 'Physicalistic semantics' has no time for intricate relationships between the world of social creation (fiction) and the world of social creation (sociology for example). Physicalistic semantics demands that words should correspond directly to what they name in the world of objects. If either the word or the world object is lacking, then no meaning is accorded in the 'cardinal paradigm'. This paradigm does not accept pluralism in fictional forms, fictional forms that show that everything that is created must have an element of fiction within it. This paradigm does not accept that one fictional form (for example literature) can correspond to another fictional form (for example sociology). And this paradigm does not accept that this paradigm is a fictional form itself (as it has been consciously created to represent reality).

Social creation can be seen as a continual assimilation of ordinary historical forms of communication (Waugh, 1984). Waugh calls this 'social creation' 'metafiction'. Metafiction is a form of fictional writing that self-consciously and systematically develops a dialectic around fiction and reality. Critiques consider their own method of construction, their structures of narrative fiction, and look at the possible fictionality of the world outside the fictional text. Waugh's 'metafiction', therefore, can be seen as an explicit pluralistic intent to go beyond banal distinctions of fiction and reality and open up a serious discourse between 'what we can call fiction' and 'what we can call

reality'. A discourse that has been attempted throughout this thesis. An example of such a discourse is encouraged by Bahktin (1989) who considers the representation of 'heteroglossia' in fiction through Dickens's 'Little Dorrit' (heteroglossia is a word requiring explanation (*glossa* from the Greek 'a word requiring explanation') in another context (*heteros* from the Greek 'other')). Bahktin also finds in the work of Dickens certain forms of 'hybrid construction' (as in Hassan's (1986) sense earlier, in chapter three). A hybrid construction "... is an utterance that belongs, by its grammatical (syntactic) and compositioned markers, to a single speaker, but that actually contains mixed within it two utterances, two speech manners, two styles, two 'languages', two semantic and axiological belief systems" (Bahktin, 1989, p. 205). The hybrid construction relates to the heteroglossia in that the two languages uttered require explanation in the 'other' of the two contexts. As an example, a chemical notion of the acidity of a particular substance may be developed in a fictional sense (or the many poisons used in Eco's (1984) *The Name of the Rose*), or a chemical text may refer to a fictional notion such as the presence of a further element within the Periodic Table. Whatever the context, the evidence of the crossing of the generics is given in a single speaker. The utterance of this speaker evidences a hybrid construction, where one word belongs to two languages, two belief systems, and therefore, this one word has contradictory meanings (where the fictional context gives one meaning, and the chemical context gives a contradictory meaning), contradictory meanings that must be tolerated through a Derridean 'loss of centre'. The centre is the single speaker, and we have lost the singularity of that speaker when he begins to speak in two languages. Here literary openness possesses exciting philosophical dimensions where a continual opening up of the assumptions of discourse (the main assumption being of a centred authority

to textual construction) and a continual re-interpretation of the language of discourse generates the possibilities for more discriminating and precise forms of communication (Richards (1929) in Hartman, 1985, p.183). But, we must remember that the centre merely represents the contradictory nature of language, language across different generic forms, the centre is merely a convenient meeting place for the signification of the contradictory nature of language. Within an isolationist context the single speaker is all that is heard, speaking in only one context; while in a pluralist context the single speaker represents utterances of a contradictory nature, speaking in two contexts. Pluralism, in order to contextualise these contradictory utterances must consider generic forms such as fiction and reality, and generate a Cross-Dialectics that centres this debate:

> "Every utterance participates in the 'unitary language' (in its centripetal forces and tendencies) and at the same time partakes of social and historical heteroglossia (the centrifugal, stratifying forces)." (Bahktin, 1989, p. 199).

Such a notion of heteroglossia operates in this section, where fiction has been considered in a pluralistic sense. Heteroglossia is a word with fictional beginnings (from the literary theorist Bahktin) but with necessary pluralistic continuations (to philosophy, sociology, systems thinking). We can therefore see the contented nature of this cell: the fictional debate has been given sufficient space within this pluralistic context.

4.12 PLURALISM - WILL

This final section will attempt to open up a debate between dualism and pluralism (to be continued in the second stage, most notably in chapter eleven), evidencing the incidence of will in both cases. First of all, let us define the two terms. Dualism represents:

> "...the hold on our imagination of Descarte's having distanced his mind from his body, claiming to inhabit his body as does a pilot his ship, together with the suspicion created by advances in genetics and neurophysiology that what pilots our ship is nothing like minds and our continued failure to model minds..." (Wiseman, 1989, p.2)

Dualism, therefore, is a separation of mind from body (ontological) and a consequential separation of subject from object (epistemological).

Pluralism, by contrast, can be seen as an interest in

> "open, multiple forms which bear in their torsions the very imprint of the contradictions they lay bare."
> (Eagleton, 1976, p.161).

This definition of pluralism complements Bleich's definition of pluralism and Hassan's use of pluralism to demonstrate hybridisation and irony (see the second chapter's definition of pluralism).

Two authors are considered particularly relevant in shaping a debate between dualism and pluralism: Rorty (1989); and Bernstein (1985).

Rorty (1989) seeks to replace the traditional view of science with a more literary and conversational approach. The traditional view of science attempts to 'express the real nature of the self', to find a real correspondence between subject and object, and the "temptation to look for criteria is a species of the more general temptation to think of the world, or the human self, as possessing an intrinsic nature, an essence." (Rorty, 1989, p.6). Traditional science attempts to recover the essential through a deterministic need to objectify.

The traditionalist core self holds beliefs that are criticisable in that they fail to correspond to reality. Belief and desires (subject) on one side while reality (object) exists on the other side, and a network is required to integrate them. We can see Rorty's view of traditional science relating very closely to Cartesian dualism explained earlier. How then does Rorty begin to challenge traditional science?

Firstly, 'mind' is replaced by 'language' as the medium in which desires/beliefs are constructed. This is not a simple replacement, as language is not merely an entity between self and non-human reality (as this would perpetuate the dualist Attitude) allowing us to use language to reach deep truths, to show

what lies outside the self: "We need to get off this seesaw" (Rorty, 1989, p.11). A seesaw that hits subjectivity on the rebound from objectivity. A seesaw that asks questions regarding the contradictory nature of our beliefs (how does language relate to thought?; how does value relate to fact?). Assumptions behind this seesaw include: dispensability of all vocabularies, reducibility of all vocabularies, and (therefore) a unification of all vocabularies. (To carry the metaphor further, the assumptions behind the seesaw lead to an ever decreasing area of discourse finally achieving a unified fulcrum of knowledge (or an Archimedean point)).

Having got off the seesaw (be it temporarily, in our consideration of language as more revealing than our consideration of mind) we are able to see Davidson (1984) treating vocabularies as tools to be used efficiently. Language becomes a contingency where Davidson treats old metaphors in much the same way as Darwin treats disposed or eroded species. Old metaphors enable new metaphors to take shape. We have no criteria beyond language called 'Fact', we can only compare languages with other languages. Such an idea is further evidenced with the distinction between literal and metaphorical devices. The distinction is not between two sorts of meaning or two sorts of interpretation but between the familiar and the unfamiliar. Continual use leads to a literal familiarisation while new metaphors are busy developing new (unfamiliar) theories. This implies that metaphor's role in language games changes since it does not attempt to convey meaning in a situation; rather, metaphor generates unfamiliar perspectives at the margins of thought. This does not imply, however, that metaphor is unable to play a role in language games: metaphors can be used, they can be used sparingly, and thereby maintain some notion of the unfamiliar

in the familiar, or they can be used habitually, and through this become 'dead metaphors'. 'Dead metaphors' are used unthinkingly, in familiar contexts. Davidson denies

> "...that metaphor does its work by having a special meaning, a specific cognitive content...by having a meaning which results from the interaction of two ideas. A metaphor does its work through other intermediaries." (Davidson, 1984, p.262)

These intermediaries show metaphor as drawing our attention to its lack of finitude: no exhaustive description is possible. Or rather "Seeing as is not seeing that." (Davidson, 1984, p.263) 'Seeing as' is metaphorical while 'seeing that' is the referred phenomenon. Metaphor does not become any closer to 'seeing that' as other intermediaries (metonym, irony, synecdoche, ideology, dogma ...) serve to promote metaphor's inability to escape the rigours of mediation. Metaphor attempts to escape the rigours of language through an appeal to visual phenomena. The platonic primacy of the visible (see the second chapter's definition of Dialectical-Forms) dominates the use of language, and in this sense, if we can visualise the phenomena that we are linguistically constructing, then, in a perverse sense, we are able to become 'closer' to it (this central notion becomes the focus of the second stage). The abstract mechanisms of language have been reified through a desire to visualise (and, therefore, materialise).

Metaphors do not appeal to hidden messages, or hidden truths, they provide a literal statement that prompts a further literal statement. A literal

statement that may propose a Nietzschean 'truth as a mobile army of metaphors'. Truth merely circulating around 'dead' Davidsonian metaphors. Pluralism recognises the immediate limitations of metaphor and recognises them in the context of Dualism, where metaphors of perfection aid the cause of Dualism:

> " I revered our theology, and I desired as much as the next man to go to heaven; but having learned ... that the revealed truths leading to it are beyond our understanding, I would not dare to subject them to my feeble reasonings. And I believed that, in order to undertake the examination of these truths and to succeed in doing so, it was necessary to have some extraordinary assistance from heaven and to be more than a man." (Descartes, 1637, p.8)

The assistance from the metaphor of perfection, for Descartes, enables an achievement of perfect knowledge in his *Discourse on Method.* And this recognition that Cartesian dualism is built upon the notion of achieving perfection is essential to any serious understanding of the Dualistic project. Belief in God (perfect being) opens the way to question imperfections (through systematic use of reasoning powers) in the search for perfection. To attack Cartesian Dualism, is to blaspheme

> "...not to see the scientist (or the philosopher, or the poet, or somebody) as having a priestly function, as putting us in touch with a realm which transcends the human." (Rorty, 1989, p.21).

For Descartes, to search for contexts of Pluralism is to blaspheme: "... since the multiplicity of laws often provides excuses for vices ... " (Descartes, 1637, p.7).

Further disrespectful acts include a definition of consciousness as a disposition to worship corpses of metaphors. Rorty demands that we question our use of old tools (vocabularies, sentences, metaphors, metonym...) and temporarily grasp contingencies of time and chance.

Dualism would counter any pluralistic attack upon its foundations with an accusation of relativism parading as pluralism. If we are unable to appeal to a permanent, ahistorical framework which ultimately allows a determination of the nature of rationality, knowledge, truth ... then are we lost in the undecidability of relativism? Is there more to relativism than a playmate for Platonist and Kantian philosopher's imaginations? In effect is relativism invented in order to be refuted. To what extent should the arguments against relativism be taken seriously? Relativism

> "...is criticised for not having done what philosophers are employed to do: explain why our framework, or culture, or interests, or language, or whatever, is at last on the right track in touch with physical reality, or the moral laws, or the real numbers, or some other sort of object patiently waiting about to be copied." (Rorty, 1982, p.167)

Bernstein (1985) continues the attack upon the Enlightenment project. According to Bernstein, Kant does not question the need for an ahistorical permanent framework, he holds it as an Archimedean point. To question all the Kantian philosophical project is to question philosophy itself: "All those who share this commitment - all those who think that only by taking the transcendental turn and who claim that there is an *apriori* universal and necessary structure of human knowledge - share the objectivist bias". (Bernstein, 1985, p.10). The retort from a pluralistic position is direct.

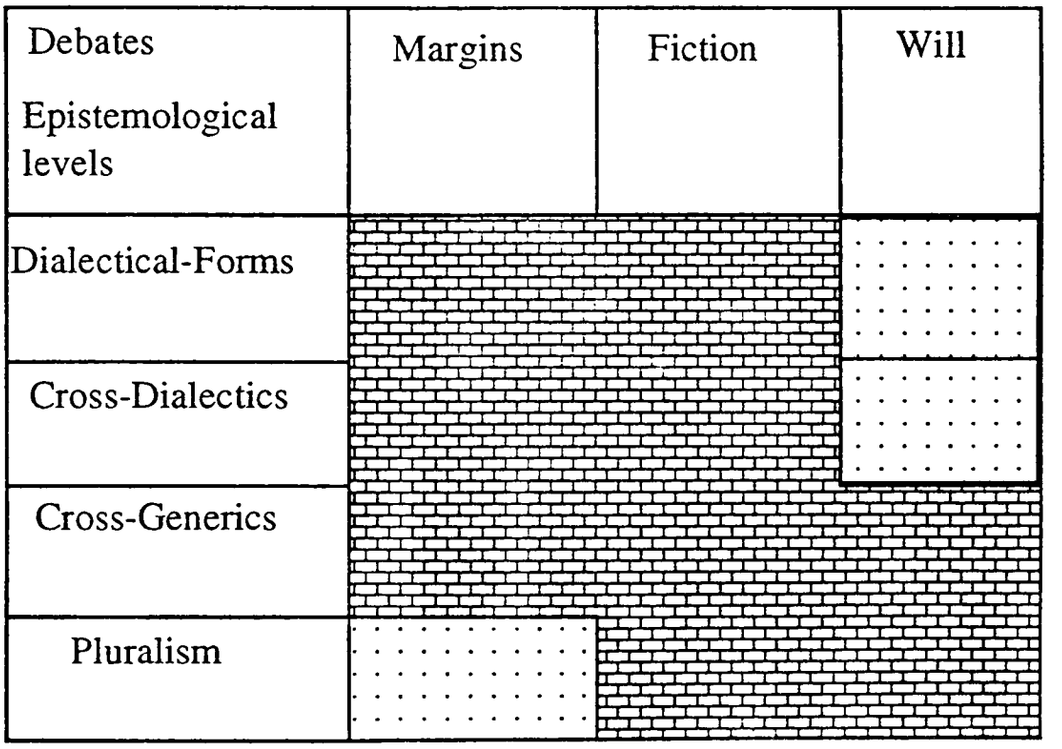
Bernstein as Rorty, sees the 'Cartesian Anxiety' as misleading and any further reconstruction of it as retrogressive. This is implicit in the 'rational-consensual' idea that "all contributions to a given discourse are commensurable" (Bernstein, 1985, p.198).

The Nietzschean argument of simply casting for a vocabulary that agrees with our 'will to power' seems stronger than a casting toward rational consensus. If the will privileges rational consensus then it must privilege methodological closure. The task of the socio-cultural critics should be to open up debate, in the pluralist sense, and to resist 'rational-consensual' closures in favour of 'rational-dissensual' openings. A re-formulation of the 'will' is central to a serious development of pluralism. The Dualistic 'will to perfection' must be critiqued at every available opportunity as its inherent fallacies need to be made apparent to all. The pluralistic 'will to power' recognises the need to understand the complexities of language as a multiple form full of contradictions, and

respects that these contradictions are man-made and will continue to be man-made, and it is the task of man to un-make these contradictions and seek further contradictions in further rationalities.

We can see that this last section of the Architecture is a contented cell. The 'will' debate has been respected throughout through the pluralistic framework. The vertical and horizontal flows have been shown to be balanced.

Table 4.1 Contented cells/Satellite cells



KEY

: contented cells

: satellite cells

Table 4.2 The contents of the Architecture

Debates Epistemological levels	Margins	Fiction	Will
Dialectical-Forms	Power-Knowledge (Habermas-Foucault)	Trad-Mod | Late-Mod	Power of the Dialectical-Form overruns Will debate
Cross-Dialectics	1.Self-Body 2.Father-Child 3.Family-Society	1.Trad-Mod-Late-Mod 2.Ultra-Mod-Post-Mod 3.Fiction-Sociology	1.Positivist 2, Functionalist 3.Non-Absolutist (No coordination with will debate)
Cross-Generics	Sociology | Philosophy | Psychology	Literature | Science	Philosophy | Art
Pluralism	Inability to allow Margins to be debated in Pluralist framework	Social Creation as Fiction as Exemplified in other disciplines	Will of Dualism Attacked from Pluralistic Basis

CONCLUSION

In this fourth chapter, the content of the Architecture has been displayed and discussed. It consists of twelve cells that respond to the structural longevity of the second chapter, and the relational modification of the third chapter. The response to the structural longevity comes as the establishment of detailed concerns within each cell. The response to the relational modification comes as the operation of the vertical and horizontal flows within the structure of the Architecture. The operation of these two flows determines whether or not a particular cell will be contented or not. If the vertical flow dominates the horizontal flow, then an insubstantial reaction occurs. The cell becomes a satellite of critique, and its will to critique operates on bordering cells. Three such cells exist in the Architecture: 4.3, 4.6 and 4.10. Their critiques of their bordering contented cells are shown and the Architecture of Autocritique is established. To take this notion of Autocritique a step further, a continuous dialogue needs to be set up between satellite cells and their bordering contented cells. This continuous dialogue would keep the Architecture contemporary and respondent to the intellectual requirements of the Critical Systems Community. The contents would change according to the inherent 'will to critique' within the Architecture.

In most cases, however, the vertical flow balances with the horizontal flow and contented cells result. These have been detailed in accordance with the requirements of chapters two and three. Requirements of structural longevity:

clear understanding of the relevance of the two structural sides. Requirements of relational modification: the meanings of the two sides changes according to the established content. These requirements have been detailed in the text of this chapter, and we are now in a position to apply the Architecture of Critical Systems Thinking to Systems Thinkers. This becomes the interest of the fifth chapter.

CHAPTER FIVE: SYSTEMS THINKING DEVELOPMENT

There are four movements in this fifth chapter. They are: An initial understanding of each Systems Thinker; The incidence of 'positions' ('Margins', 'Fiction' and 'Will') in the Systems Thinker's work; The use of the '*architecture*' (Dialectical-Forms through to Pluralism) in the Systems Thinker's work; and an enriched understanding of each Systems Thinker (where the second and third movements combine in the fourth movement and lead to an investigation of commensurability).

MOVEMENT ONE: AN INITIAL UNDERSTANDING OF EACH SYSTEMS THINKER

INTRODUCTION

Let us commence with an easy-to-read tabulation of this first movement.

Table 5.1 Initial understanding

Views Author	Theme	Favoured words/phrases	Systems Definition
Beer	-Autonomy -Variety -Disease -Viability	-Self-regulation/ self-organisation -Variety absorbs variety -Mediocrity machine -Exploding complexity	-Group elements, dynamic, coherent -Biological identity -Negentropy
Checkland	-Credibility of SSM	-Messy situations -Real world -Purposeful action -Cyclic learning system -Systemic process	-Emergence -Hierarchy -Communication -Control
Flood	-Liberate and emancipate	-Metaphorical emancipation -Critique -Unities -Adequate epistemology	-Translation -Many forms -Complementarism -Metaphorical guises
Flood and Jackson	-Anti-supermodel thesis -Systematic style -Plurality as strength -Liberation	-Diversity, -Power, -Insightful -Strengths and limitations -emancipation	-Organising capacity -General plus metaphor
Jackson	-Unified approach -Complimentarity -Unearthing of theoretical assumptions -Communicative competence	-Critical methodology -That which must be fought -Aims	-Holism and cognitive systems -as methodology

This chapters constitutes an application of the ideas generated in the three previous chapters. This first movement corresponds most closely to the aims of the first chapter, the Introduction to the Architecture. In this first chapter we offered an initial understanding of the Architecture, in its many meanings, and here we offer an initial understanding of each systems thinker, in their many interpretations. This explains why this is the first movement of this application of the ArCST. In this first movement we are applying the intentions of the introductory chapter to the five systems thinkers. It represents an effort to understand how systems thinking can develop from these ideas. As shown in the table above five main influential systems thinkers have been chosen. They are: Beer, Checkland, Flood, Flood and Jackson, and Jackson. (It must be noted here that the combination of Flood and Jackson constitutes another author. It is recognised that both these authors are considered separately, however, together their interests combine and a different author is formed). The reasons for the inclusion of these five authors rest upon their general and sustained influence within systems thinking. All have published widely, and all continue to be active within their various domains (domains housing each author's particular definition of systems thinking). It is also important to state that together they represent a well balanced spectrum of current systems thinking.

The references used for each of these authors are as follows:

Beer	:	Platform for change (1978);
		Heart of Enterprise (1979);
		Diagnosing the System for organisations (1990)
		Brain of the Firm (1981).
Checkland	:	Systems Thinking, Systems Practice (1981, 1988);
		Soft Systems Thinking in action (with Scholes) (1990).
Flood	:	Liberating Systems Theory (1990a);
Flood and Jackson	:	Creative Problem Solving (1991)
Jackson	:	Systems Methodology for the Management Sciences (1991)

The texts chosen constitute the main arguments of each author.

The main aim of this first movement is to offer an understanding of each Systems Thinker through fundamental questions, such as 'What is the main theme to the author's work?'; 'Which words or phrases repeat themselves most often?'; and 'What is the author's definition of "System"?'. These three questions quickly summarise the intentions of each author in a basic manner. (These intentions and subsequent understandings will be developed in the fourth movement).

5.1.1 BEER

5.1.1.1 Themes

Let us commence with the work of Stafford Beer. Reading from the tabulation above, we can see that the main themes in his work are that of: **Autonomy** (expressed through freedom as 'the freedom remaining to the management on the horizontal axis to manage' (Beer, 1990, p.102)); **Variety** (engineering of, cf. Ashby); **Disease** (at three distinct levels; Man, Culture, and Organisation): and **Viability** (where viability refers to a "... constraint only in terms of minimal cohesion." (Beer, 1979, p.173)). These four themes, in order to be empathetic with the work of Beer, are very much interrelated. They build upon each other and reinforce each other. For example, the **disease** is as a result of an inability to engineer **variety**, we must, therefore, create **viability** for systems, while maintaining **autonomy**, in order to manage the exploding complexity. We can gradually see how these ideas take shape when they are developed in the 'Favourite words/phrases', and 'Systems definition'. They will also become clearer as we work through the four stages in this chapter, in that their meanings shall be reinterpreted through the Architecture constructed in the previous three chapters.

5.1.1.2 Favoured words/phrases

There are many recurring and original words and phrases that Beer puts to work in his texts. The ensuing selection procedure is based upon a need to primarily understand the project of Beer. This can best be achieved by following the main themes set out in the previous paragraph. To this extent, therefore, we must clearly relate the 'Themes' to the favourite words, since it is these themes that dictate and give meaning to these words. The four sets of favourite words/ phrases are: **Self-regulation**, and **Self-organisation**; **Variety absorbs Variety** (from Ashby's Law, and extended in Beer's (1979) first (p.217), second (p.298), and third (p.298) Axioms of Management); the **"Mediocrity machine"** (Beer, 1978, p.286), and **"Man... is threatened by exploding complexity."** (Beer, 1978, p.26); and the **'Ops'** or **'War room'**. Each one of these sets of favourite words/phrases corresponds to a theme. Self-regulation and self-organisation relates to the theme of autonomy in that it "... means the freedom remaining to the management on the horizontal axis to manage." (Beer, 1990, p.102). The freedom to manage refers to the ability of system one (the operation, the doing, and therefore, the 'purpose' of the system) to manage its own affairs: to regulate its own affairs and to organise its own affairs: self-regulation and self-organisation. To be autonomous is to be able to practise self-regulation and self-organisation. This is how the theme relates to the set of favourite words/phrases.

'Variety absorbs Variety' (obviously) refers to Variety. The theme has been expressed in a favoured phrase of Beer, and also in a favoured mode of expression

(that of Axioms). Variety absorbs Variety is the basis for the three Axioms that Beer proposes in 'Heart of Enterprise' (1979). And it is these three Axioms that become the logic of recursion, a logic that is 'essentially Beer' and 'essentially Viable Systems Model'. The logic of recursion becomes the three Axioms of Management. In order to explain this logic it is necessary to show the three Axioms:

The First Axiom of Management

The sum of horizontal variety disposed by
n operational elements
equals
the sum of variety disposed on the six
vertical components of corporate cohesion

The Second Axiom of Management

The variety disposed by System Three resulting
from the operation of the First Axiom
equals
the variety disposed by System Four

The Third Axiom of Management

The variety disposed by System Five

equals

the residual value generated by the

operation of the Second Axiom

The logic of recursion is implicit within these three Axioms. The First Axiom allows for horizontal variety to be absorbed by vertical variety. Such absorption is essential for any operation of the Viable Systems Model because once the vertical has absorbed the horizontal then all considerations of variety engineering can be focused upon the vertical dimension. This is therefore the apriori for the logic of recursion. The logic of recursion can only begin to operate once in the domain of recursion: the vertical domain. The First Axiom allows for the operation of the logic of recursion because it draws variety from the horizontal to the vertical. And here we witness a distinct break within second order Cybernetics (The Cybernetics that involves Management within the problematic. First order Cybernetics purports to objectify the problematic from a distance that allows for observation at the expense of participation). This break lies between horizontal and vertical variety. Quite simply, horizontal variety corresponds to 'real' or 'environmental' variety; while vertical variety corresponds to 'modelled' or 'organisational' variety. And it is only when variety can be viewed within 'organisational' terms that the logic of recursion can begin to operate. This is to say that the logic of recursion is a logic that operates only along the vertical dimension and, therefore, is limited in its understanding of variety. This is the message of the First Axiom.

The Second Axiom, following the establishment of the logic of recursion, builds upon the First. There is an equal disposition of variety between Systems Three and Four: their varieties are matched. This equality of varieties along the vertical domain (in this case between Systems Three and Four) is the logic of recursion. Viability is the response to variety, it is the mastering of variety, and viability is the sole ingredient of recursion. To extend this, we have the logic of recursion as mastering of mastering of variety (the viability contained in viability, see Beer 1979, p.118), where mastering refers to a matching of variety: to master something, in Cybernetic terms (second order of course), is to match it variety for variety. This is the message of the Second Axiom.

The Third Axiom again follows the logic of recursion set down in the First Axiom and operated in the Second Axiom. In this case, however, the logic of recursion comes to some kind of final cursion (using the word 'cursion' not as a strict opposite to 're-cursion' but as a strict opposite to the intention with which recursion is used. Recursion is used as an attempt to 'cure' the organisation of its disease (the disease being bifurcation, see especially Beer, 1978, p.30). The disease as a cursion, a pestilence.). This final cursion is System Five. We prepared the ground for the logic of recursion in our ability to absorb the variety of the environment within the variety of the organisation (Though this could be viewed as a clear paradox, since, by definition, the organisation is limited in its deployment of variety. Limited in that the only means to deploy is by control. Control is the enemy of variety. Organisation is the enemy of variety. Organisation is a controlled response to the problem of variety. On the other hand, the environment has many ways in which it deploys variety (a variety of ways in fact). It deploys it in order to 'outwit' any form of organisation.), this being the

First Axiom; we then continued by showing how the logic could operate within the Viable Systems Model, this being the Second Axiom; and finally we put an end to the logic of recursion by creating a System Five that disposes of any residual variety that could be produced by the operation of the logic of recursion. This is the message of the Third Axiom.

Having related the theme of Variety to the favourite word/phrase 'Variety absorbs Variety', we must move on to the third favourite word/phrase and its corresponding theme. There are two phrases: 'Mediocrity Machine', and 'Man... is threatened by exploding complexity'. These two phrases relate to the theme of disease (or more correctly pathology) in Beer's work. The disease is at once both 'mediocrity' and 'exploding complexity'. However, they are very different aspects of the same thing. Mediocrity is the response to exploding complexity: but both are contained within the disease. Firstly, any thing that does not contain itself (ie. it is explosive) is liable to cause a sense of dis-ease. Secondly, a continued mediocre response fails to respond to the radically different disease-ridden situation, it therefore, in the least, does nothing to change the feeling of dis-ease, and may even add to this feeling because it stands defenceless to the attack of complexity. Mediocrity exasperates dis-ease because it fails to recognise dis-ease. Mediocrity continues to appeal to 'acceptable methods', 'previous solutions' to historically displaced events: mediocrity is retrogressive. And it is this retrogression that exasperates the feeling of dis-ease, and thereby making the exploding complexity (appear) ever more explosive. We can see, therefore, that Mediocrity actually increases the distance between predicted and actual outcomes, and it is the increasing of this distance that causes increasing dis-ease (ease being a state where predicted outcome matches actual outcome, Beer makes

a reference to Buddhism here as a philosophy that attempts to reduce the gap between predicted outcome (wants) and actual outcome (needs), and there are also clear relationships here with the previous favourite words/ phrases: Variety absorbs Variety).

The final favoured word/ phrase is the 'Ops' or 'War room'. The 'Ops' room refers to the Operations room: "If the connotation of that phrase reminds some people of a wartime headquarters, the allusion is quite deliberate... [because] a synoptic view of the whole battle is made plain..." (Beer, 1978, p.447-448). The theme that runs through, and is indeed central, is that of viability. The Ops room is the centre of viability, though, the centre is not fixed, rather it is a 'many-faceted thing' that is both 'elusive and adaptable' (Beer, 1978, p.456). This understanding of 'centre' tells us a lot about the main theme of viability, and of course the Ops room itself. When Beer talks about centre with reference to viability and the Ops room he is implicitly referring to the relationship between 'NOW' and the 'FUTURE'. The centre is now, is (must be) viable. The Ops room creates the future, in creating viability. But also, the Ops room is the centre for viability, therefore the centre is recreated in the Ops room. Now continually creates the future, and now is the only time that we have to recreate the future, therefore, the Ops room, in creating the future is being the centre, is being viable, is being now. The Ops room is one large experiment, it does not forecast (in the sense of extrapolating the now into the present), but rather concentrates "... our power of resolution on the areas in which our decisions appear most unsure or most frightening..." (1978. p.445). It experiments with these unsure and

frightening aspects in order to facilitate understanding of the 'now system' with the hope that the 'future system' will be increasingly viable. This is the way in which viability relates to the Ops room.

5.1.1.3 Systems Definition

In complementing our understanding of the themes that Beer uses, and the favoured words or phrases, we need to consider Beer's definition of 'System'. Such a definition is central to the work of Beer, and in complementing our understanding of 'centre' (as discussed above with reference to 'now' and 'future') we take note that a "... target definition turns out to be elusive. " (Beer, 1979, p.3). This elusive quality of 'System' corresponds to the elusive (and adaptable) quality of centre, therefore, the problems encountered when discovering a centre of an issue are similar to when an attempt is made to define the word 'System'. The word System is central, and therefore highly problematical.

Nevertheless Beer makes many attempts to define System and here is one such attempt: "A System consists of a group of elements dynamically related in time according to some coherent pattern." (1979,p.7). In this definition there are three strict areas of concern: Firstly, the relationship between the whole and its parts; Secondly, the relationship with the first concern and time; and Thirdly, the level of coherence of the second concern. Is this definition sufficient in acting as a complement to the themes and the favoured words or phrases? No. Autonomy

requires a clear understanding of purpose. There will be no Autonomy unless the System of Self-regulation and Self-organisation know what is to be regulated and what is to be organised. According to Beer the observer recognises the purpose in the process of declaring the facts:

> "Once you have declared, as an observer, what the facts are, the nature and purpose of the system observed are entailed." (1979, p.9).

The facts become the purpose, and once the purpose is known Autonomy becomes a possibility. This is not as simplistic as it at first appears. Firstly, who is declaring the facts of the system? Answer: an observer. Secondly, is an observer autonomous? Answer: Yes, according to scientific notions of 'observer impartiality' we can accept that an observer is independent according to his objectivity. Thirdly, autonomous from or within the System? Answer: from the System, since the system is at once being observed. Fourthly, how is it possible that an Autonomous System (1) can exist if it is allocated a purpose from another Autonomous System (2)? Answer: This is how 'fact' relates to 'purpose' relates to 'Autonomy'. Fifthly, does 'fact' destroy 'Autonomy' therefore? Answer: only if the logic of recursion fails to operate between 'observer' and 'that being observed'. Sixthly, are you suggesting that both the 'observer' and 'that being observed' are Viable Systems? Answer: yes, of course. Seventhly, therefore you are also suggesting that the 'observer' contains, and is contained in 'that being observed', since this is the 'Recursive System Theorem' with reference to Viable Systems? Answer: yes, maybe. Eighthly, if the 'observer' is contained in 'that being observed', then how is it possible that the 'observer' can be Autonomous

with regard to 'that being observed'? Answer: oh I see, you are suggesting that Autonomy and Containment are contradictive? This then, is what Beer is referring to when he states that a "target definition turns out to be elusive" (1979, p.3).

We can, however, seek to tackle this elusive quality of System defining when we consider the biological primacy consistent within Beer's work. The following quote signifies this possibility:

> "But while people debate these issues [what constitutes a human being], even concerning their own persons, the biological principle keeps them in self-production: they retain their identity. " (1979, p.409).

In spite of the elusive nature of the System, there exists some form of biological primacy that enables us to recognise this elusive nature. This biological primacy is identity. At some basic, biological level the elusive quality of Systemicity is lost and replaced by a well-centred identity. This is the claim of this quote. This quote, therefore, represents a definition of System, a definition that exists prior to the previous definition of System (as interpreted above). We must recognise both of these definitions of System when we discuss the work of Beer. There also exists a third, and possibly most interesting definition:

> "It is more useful... to use the stereotype called System. It is better to cross that bridge called entropy, and to enter a universe compounded not of bits and pieces but of a ceaseless flow of energy." (1978,p.29).

This definition of System is a response to the over-emphasis upon entropy and Totum-Quantum. Entropy is a measurement of dis-order. Totum-Quantum is the whole consisting of bits and pieces which liberates energy when both disrupted and re-assembled. Beer's definition of System prefers to use information (negentropy) rather than entropy as a life-preserving force, since, the inevitable consequences of entropy, as unity, are nothing. Beer's notion of System works against this 'nothing' in the continual creation of information from dis-order.

5.1.2 CHECKLAND

5.1.2.1 Themes

There is one main theme within the work of Checkland: to show how Soft Systems Thinking (SST), in particular the Soft Systems Methodology (SSM), can become a credible force within the Systems Community. The themes running through his texts, never as direct as this last statement, continually reinforce themselves as intimately related issues within the general scope of Systems Thinking:

> "[T]he focus [of SSM] is on an original set of principles (methodology) which guide action in trying to 'manage' (in the broad sense) real-world problem situations; it is systems-thinking based and is applicable to taking purposeful action to change real situations constructively." (Checkland and Scholes, 1990, p.5)

The theme is methodological. The scene is Systems Thinking. The theme becomes the scene and, in fact attempts to take control of the scene. Let us just briefly study this quote in order to ensure we understand its worked intentions. Taking 'original' in the first place. What are the expectations of 'original'? To create a distinct area within Systems Thinking, away from the 'unoriginal'. To

show that a real (real according here with the sentiments of originality) development has taken place within Systems Thinking. Next, what are the expectations of 'manage'? It is placed in quotes, signifying a meaning requiring further meanings to clarify it. The further meanings are 'in the broad sense'. To 'manage in the broad sense'. The broad sense of management refers to 'everydayness', to 'experience' (in the broad sense):

> "One of the most obvious characteristics of human beings is their readiness to attribute meaning to what they observe and experience." (1990, p.1).

To manage, therefore, is 'to attribute meaning'. Moving on to the next interesting phrase, what are the expectations of 'real-world problem situations'? Meaning is meaningless without a context within which it is able to mean something. Meaning must mean something in a 'real-world problem situation'. Such a situation offers direction and an opportunity to endlessly debate meaning contexts: "SSM is just such a methodology for operating the endless cycle from experience to purposeful action." (1990, p.4). The 'direction' refers to 'purposeful action', and the 'meaning context' refers to 'experience'. The 'real-world problem situation', therefore, becomes operational within SSM. It becomes a feature of SSM in its ability to operate relationships between experience and purposeful action. The next and final interesting phrase: what are the expectations of 'taking purposeful action to change real situations constructively'? SSM has already professed its ability to 'operate the real-world problem situation', the real-world, therefore, becomes a feature of SSM. To change 'real situations' can only be achieved within SSM, because SSM operates the endless cycle between

experience and purposeful action, and, therefore, all changes in the 'real situation' are only possible within the logic that is SSM. The main reason for this is the inescapability from SSM (the manager's attempt to exploit the attractive notions of the hermeneutic circle). Once we begin to discuss experience we cannot fail but to relate it to purposeful action, we are caught in this 'endless cycle'. There are many complications here, for example: how do we experience purposeful action? According to the logic of SSM we can begin by discussing 'experience' or 'purposeful action'. (This is what Checkland is implicitly calling upon when SSM is tasked with the aim "... to create more flexible attitudes towards change..." (1988,p.159)). Experience is given most explicitly in the 'rich picture' and 'feasible and desirable changes'. Purposeful action is given most explicitly in the 'conceptual models' and the 'implementation'. Looking at the position of these stages ((1,6) and (4,7)) shows us that there is no necessary separation between 'experience' and 'purposeful action', they are very much implicated in each other: experience (rich picture) allows for and demands purposeful action (conceptual models) while purposeful action works through experience in an attempt to clarify the problematic situation. And of course, we all possess experience of what constitutes purposeful action, if we didn't have such experience how would it be possible to recognise it? We could, therefore draw-up a rich picture of conceptual modelling (this is what Checkland would refer to as 'mode 2' SSM (see pages 282-283, 1990)). This then is a recognition of the 'endless-cycle trap' which SSM offers to any Systems practitioner. SSM attempts to promote the benefits of being trapped within such a cycle: the most obvious benefit being its power to effect 'purposeful change' in real-world situations. And this is the main theme of Checkland's work.

5.1.2.2 Favoured words/phrases

Favoured words and phrases are used to very good effect in Checkland's work. Their main effect is to support the themes set out in the paragraph above. To generate this effect, and consequently to support the theme, a problematic is needed. A problematic that is general in scope but calls for a specific response:

> "'the problem' is usually perceived as such because of the content details which make it unique, rather than because of the form which makes it general." (Checkland, 1988,p.74)

The response, of course, is SSM. SSM looks into the details and attempts to avoid any unwanted generalities. The details concern this sub-section on favoured words/phrases. These details constitute the features of SSM. But these details must take on a generalised form in order to operate as vehicles of meaning. To begin with SSM "... is an organised way of tackling messy situations in the real world." (1990, p.1). This constitutes a feature of SSM which is needed in order to comprehend the unique details of any case. We see this feature as supporting the theme in its allusion to the 'real world'. The real world was previously seen as an operational construct of SSM, and to this extent becomes a favoured phrase as a matter of course. The repeated allusion to this 'real world' is nothing more than a favoured phrase that conforms with the aforementioned theme. It is worthwhile, here, to pick up on the SSM feature concerning 'organised... messy situations'. The organisation conforms to the theme of "... purposeful action..." (1990, p.2) within the "... operation of a cyclic learning system..." (1990, p.7).

Where organisation becomes a "...systemic process of learning..." (1990, p.15), which is SSM: the theme and the favoured words/phrases become SSM: "SSM does that in a coherent process which is itself an enquiring or learning system.". The operation of the cycle has taken control of SSM and begins to inform SSM of its priorities (this is the second mode dominating the first mode, see the third movement for an analysis of this operation): the learning system learns that it must accept incoherence in order to learn. The continual emphasis upon 'coherent process', 'purposeful action', 'systemic process', shows that SSM as a learning system is aware of the dangers of incoherence, lack of purpose, and lack of systemicity; and this explains why they have become favoured words of Checkland. Their pronunciation is given as a replacement until the 'article' in the 'real-world' makes an appearance. This replacement is represented as "... meaning-bearing..." (1990, p.3) within a purposeful "... human activity system..." (1990, p.24). The human level of consciousness accords meaning as it manages the human activity system. The 'article' is shunned as reification, as a restrictive continuation of Hard Systems Thinking; consciousness and managed meaning dominate in Soft Systems Thinking, they are the real world, they are the favoured words: "... the basic reality lies in our thinking about the world, rather than in the world itself." (1988, p.274). Soft Systems thinking questions "How (do we do it)?"rather than "What (is it that we have to do)?" (1988,p.144; 1990,p.18). The distinction here states that 'the world itself' would be asked 'What is this world?' (the domain of Hard Systems Thinking) and 'our thinking of the world' would be asked 'How do we think this?'. The distinction is around 'the world' (Realism) and 'the thought' (Nominalism).

5.1.2.3 Systems Definition

Checkland, as with his themes and his favoured words/phrases, is very consistent with his definition of 'System'.

> "...[S]ystems thinking is founded upon two pairs of ideas, those of emergence and hierarchy, and communication and control." (Checkland, 1988, p.75).

These need explaining. Firstly emergence, or emergent properties.

> "[A] complex whole may have properties which refer to the whole and are meaningless in terms of the parts which make up the whole." (1990, p.19).

The parts emerge to become wholes, the wholes have properties very different from their parts because they are emergent. Emergence, therefore, relates very closely to hierarchy. The layers in a hierarchy are fundamentally different because each layer possesses a different emergent property. And

> "... maintenance of the hierarchy will entail a set of processes in which there is communication of information for purposes of regulation or control." (1988, p.83).

Communication and control allow the system to respond to changes in the environment. This all sounds very organismic, and indeed it is, as it takes direct reference from the work of a pioneer of systems thinking, Bertalanffy (1940). Bertalanffy's systems thinking considered living, biological organisms; and Checkland recognises this influence in his systems thinking:

> "It is certainly the case that the nature of the ideas control and communication, and their link to emergence and hierarchy are most richly apparent in biological systems." (1988, p.86).

5.1.3 FLOOD

5.1.3.1 Themes

Moving on to the work of Flood we find an altogether different perspective on Systems Thinking. The main theme being 'liberate and critique'. We must, however, extend this theme in order to accommodate the complexity of Flood's work. We are able to suggest three extensions to this main theme: liberate and emancipate; liberate and critique; and complementarity. These three themes represent a well structured process, from the initial liberation (as emancipation) to the second liberation (as critique) to the comparison (as complementarity).

This process must be sympathetic to the aims of Flood as to enter into such a work one must accept the potential for liberation regardless of the ensuing consequences of Flood's efforts. Consequences that necessarily build upon this potential, and in understanding these conseqeunces in line with the potential we are able to clarify the aims as process. Two things: sympathy with the potential; and an understanding of the consequences of this potential. As this process is sympathetic to the general aims and (necessarily) the consequences of Flood's work, we are able to proceed.

The first theme: liberate and emancipate. This theme sets the scene for *Liberating Systems Theory* (1990a) (henceforth, LST):

> "The liberation of systems theory in the sense of more cognitive illumination for the reader or prospective researcher or practitioner." (Flood, 1990a, p.13).

So, to liberate is to offer 'more cognitive illumination'. This cognitive illumination allows the reader, prospective researcher or practitioner to liberate 'systems theory' and to develop 'Liberating Systems' theory. It is this illumination that promotes these two activities. Examples of these two activities (and this is all that can be offered in a book of the nature of LST) include liberation from insularity, liberation from objectivist or subjectivist illusions, liberation from localized subjugations of discourse (the first activity) and liberation from subjugations at work and in social situations (the second activity). These examples come as dimensions of 'LST' which shape the book. Examples that begin the process of liberation.

The second theme is liberate and critique. The process continues where the dimensions are at once shown to the reader or prospective researcher or practitioner are now shown to various forms of critique. Where in the first theme the agent is asked to enter into the spirit of emancipation, now that emancipation is demanded to enter into the spirit of critique. Pages 47 to 50 provide the material for this second theme. To liberate in Flood's terms is to "... release subjugated ideas of discourse". But this is cast as "Foucault's critique...", while "Foucault's critique as oppositional thinking... is of a liberating rationality.". To oppose is to critique (in a conventional use of the word). To release subjugated knowledges is to liberate. The release is the act of liberation that arrives because of the oppositional thinking. This confusion over the process of 'liberate and critique' is important to consider in line with this second theme. It is such a confusion that continues to halt any fruitful relationship between Interpretive Analytics and Knowledge-constitutive interests for the simple reason that Foulcaulvian critique is an act of liberation while Habermasian critique is an act of reconstruction (see for example *Zur Rekonstruktion des historischen Materialismus*, Habermas, 1976). The Foulcaulvian project seeks to seriously search for the foundations and the limits of theory. The Habermasian project seeks to align practical reason with instrumental reason through an emancipated moral change (see *The Theory of Communicative Action*, vol.1, Habermas, 1984). Foucault's critique attempts to liberate the theorist from the oppression of certain truths (dictated by totalizing moral positions). Habermas pushes for a universal pragmatics that seeks to salvage the world through maintaining the possibility for certain truths (for example, 'Attitudes Toward the World' and 'Rationalization Potential of Worldviews' in *The Theory of Communicative Action*). Foucault's critique, therefore, liberates from certain truths. Habermas's critique, therefore, liberates

toward certain truths. The terms remain in a similar order, but, that is the only similarity between these two authors with regard to the second theme. We must propose, therefore, that 'liberate and critique' as a Floodian theme, has no distinct nature (the price that is paid for any serious liberation).

The third theme: complementarity. This theme necessarily comes after 'liberate and emancipate' and 'liberate and critique' because it is tasked with comparisons of the two themes. The "...emancipatory notion of openness and conciliation..." (Flood, 1990a, p.5) is critiqued in a "...complementarist critical theory..." (p.30). The third theme is overwhelmingly Habermasian in orientation. If we were to adopt this sentence:

> "The core of the argument of this book, that makes Liberating Systems Theory an unusually powerful critique, is the meta-unity of Foucault's Interpretive Analytics and Habermas's knowledge-constitutive interests." (p.32)

Then, we must relate the three themes within this 'meta-unity'. The first theme emancipates as cognitive illumination, where the agent is offered the opportunity to illuminate the effects of material conditions and false consciousness. Such illumination is directed at the idea of 'self', where the self realises its own false consciousness and material conditions. The self is upheld as Autonomous. Independent from the repressive forces that seek to increase false consciousness. This self, therefore, is overwhelmingly Habermasian. It is preserved according to this process:

> "A process of self-preservation that has to satisfy the rationality conditions of communicative action becomes dependent on the integrative accomplishments of subjects who coordinate their action via criticizable validity claims." (Habermas, 1984, p.398)

It is sufficient to note that such communicative action is criticizable according to "[t]he utopian perspective of reconciliation and freedom..." (Habermas, 1984, p.398). The self is preserved according to communicative integration. This integration implies reconciliation and autonomy within in order to exercise critique from without.

The second theme relates to liberate and critique in a Foucaulvian sense. This phrase develops from Smart's (1983) *Foucault, Marxism and Critique*. The sense of liberation is explicitly Foucaulvian: "Interpretive Analytics can release rationalities, thus helping to grow diversity." (Flood, 1990a, p.48) because Habermas is identified as a recipient to that release: "Habermas' critical theory... welcomes this diversity." (p.48). The act of liberation is Foucaulvian (second theme) and the act of conciliation is Habermasian (third theme). We discover, overall, that the Floodian themes are dominated by Habermasian notions, and this can only strive to undermine any potential for a 'meta-unity' of Habermasian Knowledge-constitutive interests and Foucaulvian Interpretive Analytics. And this must be considered further if the theme of complementarity is to be taken seriously in Flood's work.

5.1.3.2 Favoured words/phrases

The many Favoured words in Flood's text correspond very closely to the three main themes. There are four main categories corresponding to the three main themes. The four main categories are: metaphorical emancipation; critique; unities; and an adequate epistemology. Metaphorical emancipation corresponds to liberate and emancipate. Critique corresponds to liberate and critique. Unities and an adequate epistemology correspond to complementarity.

Firstly, metaphorical emancipation. Flood introduces *LST* as an "... odyssey [that] has taken...[him] across three paradigmatic continents: positivism (including its neo- and logical positivist regions), interpretivism, and critique." (p.3). Flood left 'intellectual ports' in his 'homeland' of positivism, reached the island (a metaphor lacking in his 'travels') of interpretivism, and finally "... having loaded...[his] intellectual hold." (p.3) landed on the enlightened shores of critique. In this introductory section Flood quickly takes us through his personal emancipation with the use of sailing metaphors. These Favoured words create an atmosphere for the text and predict the importance of metaphorical analysis in Flood's work.

Secondly, critique. Flood favours "The use of critique in seeking out subjugation and liberating discourse..." (p.26). This whole phrase is very important for Flood: potent words used in a very positive fashion. Critique is the powerful adversary of subjugation. Subjugation rests in universals, anti-reflexivity, isolationism, pragmatism, imperialism.... The call for critique, therefore, is loud and long, and

LST responds to the call through "... a critical understanding of rationality." (p.180). This critical understanding requires a 'navigation' through the 'difficult waters' of social metaphysics.

Thirdly, unities. The favoured phrase here being: "we will always work toward unities and oppose universals." (p.23). The words 'unities' and 'universals' require definitions, and these are provided succinctly at the rear of the book. Unities recognise "... the strength of diversity and that differing rationalities which underpin competing paradigms may each, in their own particular way, contribute to our understanding..." (p.218). Universals are "... normally invisibly held and hence easily dominate our thoughts about our existence and being in a totalizing fashion. A state of absolute false consciousness..." (p.218-219). Unities, therefore, surface in the scenario (p.141-161) of complementarity, and universals surface in the scenario of pragmatism (rather than imperialism because the intellectual stance is 'normally invisibly held'). The close relationship between this third Favoured word and the third theme is, therefore, quite clear.

Fourthly, an adequate epistemology. Flood's adequate epistemology features with an idea of legitimation and limitation, in that any adequate epistemology must be able to legitimate a particular rationality or methodology and at the same time show its limitations. The following citation shows this:

> "With an adequate epistemology, developed from Habermas' Knowledge-constitutive interests, we can satisfactorily critique the rationalities teasing out legitimacies and limitations." (p.35)

This Favoured phrase corresponds to complementarity in that any rationality can complement another rationality as long as an adequate epistemology is able to show the limitations and legitimations of each.

5.1.3.3 Systems Definition

There is never one simple definition of a 'system' (disregarding the 'Terms and Concepts' p.203-219) in Flood's *LST*. There are, however, four instances where a definition seems more than possible. These four instances are: translation; many forms; complementarism; and metaphorical guises.

Translation refers to page 94, table 5.3. In this table Flood shows the problems that he faced when he attempted to translate *Dealing with Complexity* (Flood and Carson, 1988) from a functionalist text to an interpretivistic text. For example, the word 'system' can be translated in three different ways: ontologically; epistemologically; and deletion (to remove the word 'system'). Ontologically we have 'thing' or 'situation'; Epistemologically we have 'model' or 'representation'; with deletion we do not have. In this simple exercise we can see that the word 'system' evades a complete definition.

Many forms refers to this citation:

> "... various forms of the concept of 'system' can help us as abstract organising structures to investigate, represent, and intervene in what we make out to be systemic worlds understood through differing rationalities." (p.14).

Once we have translated these forms of 'system' they can be used in many ways to make sense of the systemic worlds that perplex us. The definition of system, therefore, rests with many forms of system, many interpretations, representations.

Complementarism becomes analogous with the notion of system in Flood's text. Complementarism organises different tendencies in order to provide each situation with the most suitable reasoning (p.203). This definition is very similar to the above notion of system: system as an abstract organising structure enabling different rationalities to be understood. We can therefore suggest that 'system' becomes 'complementarism' in *LST*, where "complementarism leads to diversity and strength." (p.27). To replace 'complementarism' with 'system' in the above citation would reinforce the previous definition of system and also show the close relationship between complementarity and system: complementarity seems to be a necessary development from a definition of system.

Metaphorical guises relates very clearly to the metaphorical emancipation as a Favoured word. The metaphorical guises help Flood to deal with the complexity that complementarism entails, and the metaphorical emancipation allows Flood

to take each metaphorical guise seriously. However, where metaphorical emancipation is seen as a Favoured word, the metaphorical guises are seen as definitions of system:

> "We are mainly concerned here with the abstract richness of 'system' in many metaphorical guises as structures for organising our thoughts about social reality." (1990a, p.76)

The metaphorical guises come in six forms: machine; organic; autopoietic; neurocybernetic; culture; and political. The definition of system is as metaphorical guises: we have a metaphorical analogy. This metaphorical analogy is at the service of the complexity of systemic thinking. The definition of system demands this complexity for the purpose of conceptualisation. This then is the fourth definition of system in Flood's work.

5.1.4 FLOOD AND JACKSON

The work of Flood and Jackson: Total Systems Intervention is seen as distinct from the work of the authors on their own. On their own they are seen as establishing their own views, their own epistemological positions, while together their aims change accordingly. They now seek to 'pragmatise' their epistemological efforts, to show how, with people thinking along similar lines,

an emancipatory change can come about. TSI is therefore a combined effort that relies upon a reasonable understanding of the epistemological positions of both authors. This is given either side of this section (Flood before and Jackson after).

Total Systems Intervention (TSI) (1991) exists as the pragmatic guide to the more philosophical positions as generated by Flood and Jackson. Because of this pragmatic nature, all discussion of this book will inevitably be in a more condensed manner than the discussion of the other texts in this chapter. There will exist, however, a coherent discussion of this work as it appears between the discussion of the two author's main texts. In this sense, this analysis of TSI can be seen as a 'complementary bridge' between the works of Flood and Jackson.

5.1.4.1 Themes

The main themes in TSI can be captured in the following four points: firstly, the anti-'super-method' thesis; secondly, the highly systematic style; thirdly, the plurality as strength thesis; and fourthly, the liberation of that which is suppressed.

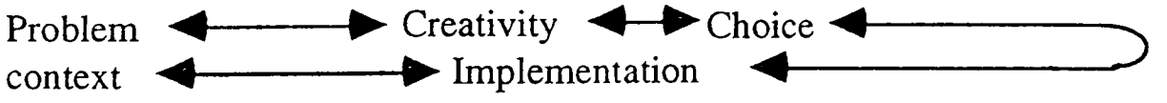
The most important theme in TSI is its dislike of a panacea to organisational problems. This initial quote picks up on this:

> "It is the argument of this book that the search for some super-method that can address all these problems is mistaken and must quickly lead to disenchantment." (Flood and Jackson, p.xi)

It is the enchantment of TSI that the authors wish for, and armed with a systematic approach to problem solving this wish seems plausible. TSI must not be seen as a panacea, rather an ability (or the willingness) to organise systems methodologies (though this need not be an immediate restriction, see Flood *et al*, 1992, for example) for the general benefit of all (or for all that see a general benefit). TSI operates across a range of metaphors (creativity phase) which then correspond to the system of systems methodology (choice phase) in order to act according to the rules of a systems methodology (implementation phase). This is not a super-model, but an organiser of complexity.

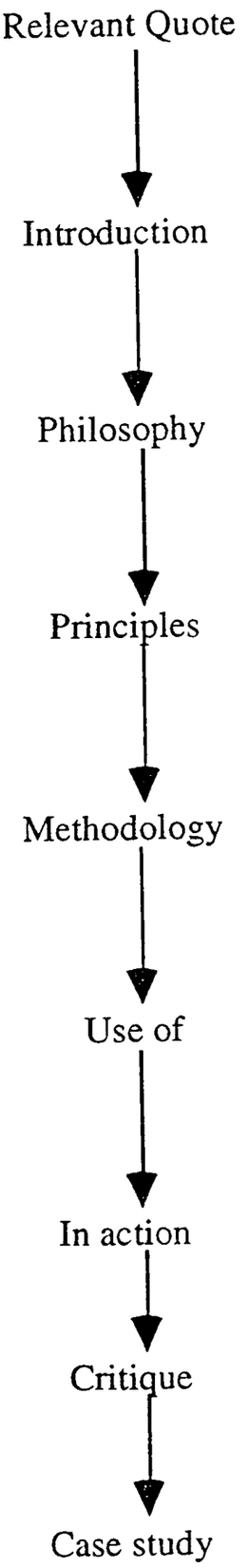
The second theme relates very clearly to the first theme in that an organiser of complexity must abide by strict systematic structures. The systematic (and of course systemic) nature of TSI is clearly represented in this process:

Figure 5.1 Process of TSI



Beginning with a recognition of a problem context, followed by a creativity phase, a choice phase, and an implementation phase that brings it back to the problem context. At each of the three phases are the sub-phases: task, tools, and outcome. These sub-phases help to clarify the objectives of the phases. This represents two dimensions of the systematic nature of TSI, a further dimension is evident in the general structure of the book. A general structure that is very strict, following the same regime for each of the chapters on each systems methodology, the regime is thus:

Figure 5.2 Regime of TSI



The recognition of these nine systematic stages is essential for an understanding of the intentions of TSI. The intentions are systematic, TSI treats the methodologies in a systematic manner (requiring a systematic understanding), therefore, in order to understand the theme of TSI we must understand its systematic presentation of the methodologies employed. Moreover, in order for TSI to be applied effectively, the methodologies must be treated in a similar way: this is the message of chapters four to nine. This similar way is a systematic way. This systematic way is the second theme of TSI.

The plurality as strength thesis is inherent in TSI. The problem of the possibility of fragmentation of the systems methodologies is turned into a naturalistic 'strength in diversity' thesis:

> "Thus, an apparent weakness of systems thinking - the range of different approaches - turns into a strength." (p.32)

It turns into a strength because TSI is able to conduct intervention into five distinct problem scenarios characterised by the systems metaphors. Where before the systems methodologies existed as separate entities, now they are joined into a Total System for Intervention. This act of joining is promoted by Flood and Jackson's thesis of complementarism.

The liberation of that which is suppressed is the fourth theme in TSI. ""liberate"those which are illegitimately suppressed " (p.48) is the cry. Looking at this overtly Foucaulvian theme we are perhaps disturbed to find that there exist 'those' who are 'illegitimately suppressed'. However, to carry on we must

'those' who are 'illegitimately suppressed'. However, to carry on we must remember that the Foucaulvian notion of suppression operates around *legitimate* suppression, and not illegitimate suppression, because it is the commodification of power by juridical theory that necessarily suppresses. Suppression is, therefore, legitimate and not illegitimate (to be illegitimately suppressed would simply require reference to the law, to be legitimately suppressed, however, is altogether more serious as it requires a questioning of the law itself outside of the commonplace notion of law). This fourth theme is, therefore, mistaken and needs to be re-written according to the proper aims of TSI.

5.1.4.2 Favoured words/phrases

The favoured words and phrases are in an abundance in TSI. Most of them occur as positive exclamations of the value of TSI. For example, systems thinking "... can provide an insightful way of understanding and dealing with such messes..." (p.xii), through the "... diversity[,]...richness[,]...power... [and the] novel and insightful [approach of TSI]... [which] reveals the strengths and the inevitable limitations of each approach... [offering an] informed choice... [and] insightful perspectives..." (p.xiii). TSI builds (using the "... three building blocks..." (p.46)) upon the fact that "Each approach has been tried and tested and works well in some circumstances" (p.32) to offer an arrangement of methodologies in "... dominant... [and] supportive..."roles which respond to the dominant and supportive metaphors (or "... flavourings..." (p.7),or "... filters..." (p.8), or

"... lenses..." (p.32)) to give "... revealing results.." (p.22). Results which are committed to "... complementarism... sociological awareness... human well being and emancipation..." (p.47).

5.1.4.3 Systems Definition

The systems definitions build around TSI in its organising capacity and its metaphorical orientation to give two dimensions: the first dimension is the organising capacity; the second is the general plus metaphor dimension.

Looking at the first dimension we see that the organising capacity of the concept 'system' is seen in a generalised sense:

> "We want to develop a general conception of system which we can... fill with any kind of content." (p.5)

This general conception concerns the traditional terms: element, relationship, boundary, output, input, environment, feedback; along with: attributes, transformation, purposive, purposeful, open system, homeostasis, emergence, communication, control, identity, and hierarchy (p.5-7). This organising capacity is empty, ready for a context that will give it meaning. Such a context arrives in the form of the second dimension. The second dimension adds the metaphorical meaning to the generalised form:

> "We have our general conception of "system"in place, broadly in terms of complex networks. To this must be added content in the form of different "flavourings"." (p.7)

From the 'favourite words' we know that 'flavourings' refers to systemic metaphors. To add the metaphors is to adapt the basic conception of system into five different meanings: "These five capture, at a general level, the insights of almost all management and organisation theory." (p.7). The general conception plus the metaphors gives a general comprehensive insight into most manangment and organisational theories. This addition, thus, is the second dimension to Flood and Jackson's definition of 'system'.

5.1.5 JACKSON

We finish this sub-chapter with an appreciation of Jackson's work, centring on his most recent book: *Systems Methodology for the management sciences* (1991). This book can be considered to be Jackson's most important contribution to Systems thinking to date. The book attempts to capture the complexity of his many efforts in systems thinking over the past fourteen years. It is hoped that these efforts will be reflected in the succeeding analysis.

Following the same format for the other authors we begin with a recognition of the themes, favoured words/phrases, and systems definitions of Jackson. There are a selection of four main themes; a categorisation of three favoured words/phrases; and two systems definitions. The main purpose of using such a format is to gain some empathy with the author's ambitions, this empathy then becomes the reference which the following three sections must relate to.

5.1.5.1 Themes

The main themes in Jackson's work are consistently adhered to throughout the two hundred and eighty pages. They consist of: a unified approach for systems thinking (p.vii) (1); systems thinking to advocate complementarity and to theoretically support the management sciences (p.vii) (2); an unearthing of theoretical assumptions (p.18) (3); and a call for communicative competence (through Habermas's Knowledge-constitutive interests)(p.17) and democracy (p.120) (4). These themes can be seen as interrelated in all manner of different ways. Any arrangement of these themes will appeal to the unified approach called for by Jackson. A suggestion: In order to search for an unified systems thinking (1), we must complement systems methodologies (2) by unearthing their theoretical assumptions (3) and consequently offering theoretical support to these assumptions (2), this must be achieved within the democratic spirit of communicative competence (4). Such an arrangement of themes is only one permutation of many, however, at any one time one permutation must be uppermost in the minds of the reader in order to gain some empathy of the author's ambitions. Subsequent permutations invite subsequent empathies.

Beginning with the first theme which is introduced at the very beginning of the text:

> "Its [the book's] purpose is no less than to reconstitute systems thinking as a unified approach to problem management... " (p.vii)

The phrase a 'unified approach' means unification at the level of human interests. Human interests show themselves in two distinct anthropological dimensions: work and interaction. The subsequent interests being technical and practical. The domination of one interest over the other (at our current social progression, according to Habermas (1975) it is the technical dominating the practical) requires an emancipatory interest to 'police' and establish an equilibrium between the two main interests. It is this notion of equilibrium that can be upheld as the enunciation of a 'unified approach', and it is this state of equilibrium that will 'police' problem management as a continual point of reference. This state of equilibrium is to be established with the help of Habermas's 'communicative competence' (to be discussed in the fourth theme).

The second theme is a continuation of the first theme in a more pragmatic (as opposed to theoretical, an opposition that is another theme in Jackson's work and is consequently addressed as a Dialectical-Form in the third movement of this fifth chapter) sense:

> "This [unification] is done, first, by showing the complementary role that the various systems methodologies can play in the overall task of managerial decision making and problem management...; and second, by demonstrating

the power of systems thinking as a source of theoretical support and practical guidance in the management sciences... " (p.vii)

The unification is pragmatised through the systems methodologies and the practical efforts in the management sciences. The unification at this level changes from a unification of interests (as in the first theme) to a unification of theory and practice. The practical problems are considered in a theoretical light, and this theoretical light orientates practice. The one theoretical light is able to illuminate the deficiencies in two fields of practice: systems thinking and management science. The effect in the first field is a complementary role for the systems methodologies, while the effect in the second field is theoretical support for the management sciences. Both fields are offered theoretical support, but for the systems methodologies this support can be more directly applied as complementarism. We can, therefore, suggest that complementarism is an example of systems thinking's theoretical support, and that complementarism, therefore, can be seen as a unification of theory and practice.

The means to unearth the theoretical assumptions of different systems methodologies is the interest of the third theme, as iterated in the following citation from Jackson's book:

"It would be insightful, and extremely illuminating, if we could find some means of unearthing the implied theoretical assumptions of different systems methodologies." (p.18)

Again, complementarism is used to unearth these theoretical assumptions, however, not the complementarism of theoretical and practical unification, but the complementarism of critique. Critique is used as a complement to the uncritical methodologies that are abundant in systems thinking (the functionalist, structuralist, interpretivist, and emancipatory methodologies). With this form of complementarism, these methodologies are given a new lease of life within the systems community. By unearthing the theoretical assumptions of these systems methodologies the systems thinker is able to complement one radically different systems methodology with another radically different systems methodology (for example, Systems Engineering with Critical Systems Heuristics). The means, therefore, is critique, but the form of critique is complementary (that is to say that the form of critique is not destructive but constructive, a form of critique that works with the systems methodologies not against them). This means of unearthing registers as critical precisely because it promotes the establishment of equilibria between interests, as in the case of the first theme, and here we can also witness another permutation that enables another empathy to register.

In the search for further permutations we will now look at the fourth theme. The fourth theme proposes a complex relationship between Habermasian communicative competence and democracy. This relationship is to be founded on the two following quotations:

> "Only with the achievement of communicative competence can the power for domination inherent in instrumental reason be made subject to full public control." (p.17)

and

> "For only with democratic involvement can the parts be convinced that the system is serving their purposes, and that they stand to gain from its continuance." (p.120)

Together, these two quotes register the fourth theme. Communicative competence requires democratic involvement as much as democratic involvement requires communicative competence. The reference to 'full public control' in the first quote is an isomorphism of the emancipatory 'policing' in the first theme, and also relates to democratic 'serving their purposes' in the second quote. Not to serve their purposes would be to allow instrumental reason to dominate their purposes, the policing of these purposes is a manifestation of the emancipatory interest. The emancipatory policing is enacted in the spirit of complementarism between the practical interest ('serving their interests') and the technical interest ('instrumental reason') in order to realise the strengths of constructive critique in its ability to re-vitalise the technical interest by democratic involvement. Here again, we are hinting at a possible permutation that will enable a possible empathy.

Together these four themes can be viewed as the main intentions of Jackson's text, and are proffered as an initiation into an empathy of Jackson's work.

5.1.5.2 Favoured words/phrases

The favoured words/phrases section is used with the intention of evidencing the manner in which Jackson shapes his themes into key words and phrases (Jackson would deny such a process occurring within his own work, he would prefer to be seen as being exempt from such 'trivial' and 'fashionable' word play, however, the epistemological worth of this section becomes clearer later, and this would not be so easily deniable). These key words and phrases motivate the themes, the more frequent a word/phrase occurs, the more willing Jackson is to motivate that theme. For example, in wanting to motivate 'democracy' (p.120), Jackson will frequently use words such as 'genuine consensus' and 'freeing from constraints'. Let us then, briefly (as this exercise could take many varied readings of Jackson's text) consider the incidence of favoured words/phrases.

The favoured words/phrases come in three clear forms: as 'critical methodology'; as 'that which must be fought'; and as 'aims'. The first form is repeated every time a critical 'unearthing' is required, the favoured words/phrases are:

> "... shed light on the strengths and weaknesses, and
> domain of effective operation, of each methodology... " (p.8)

To be critical translates as the ability to see ('shed light on') the strengths and weaknesses of each methodology. Depending upon the recognition of the

strengths and weaknesses, a domain of effective action will be recognised as a consequence. If, for example, a methodology has a strength in unitary-systemic domains, and a weakness in pluralist-mechanical domains, then the domain of effective action is the unitary-systemic: the domain of effective action follows from the strength/weakness unearthings.

The second form follows whenever a methodology is shown to be lacking in criticality. When this happens, there needs to be a "... freeing from constraints..." (p.12), in order to be "... free from [the] domination..." (p.14) of "... coercive forces..." (p.178), and their "... constraints..." (p.16) that promote "... distorted communication..." (p.186). All these favoured words/phrases encapsulate 'that which must be fought', and it must be fought in order (the rationality) to conform with the third form.

The third form constitutes the general direction in which the preceding two forms must follow. The 'aims' are "... genuine consensus... " (p.16) and "... maximum development..." (p.186) of the individual. When the individual reaches his/her 'maximum development' then there will be 'genuine consensus', here the individual is more important than the process, since the individual determines the success of that process. Jackson's blend of Critical Systems Thinking is very much based upon the individual and his/her general liberation.

5.1.5.3 Systems Definition

This section will come to a close with a brief appreciation of the way in which Jackson defines 'system'. This must be seen as a highly essential finish to this section, as it attempts to deal with the most basic of Jackson's ideas (and indeed any systems thinker's ideas). There exist two definitions of system prevalent in Jackson's text. They are: holism and cognitive systems (p.7); and methodology as a systems dimension. The first definition is the clearest to deal with. Jackson, at the beginning of the book, in the general style of a committed critical systems thinker, makes explicit all relevant definitions, the systems definition existing as the most relevant of definitions.

> " First, all systems approaches are committed to holism.... Second... that human beings inevitably organize their knowledge in "cognitive systems"." (p.7)

The definition of system as 'holism' is commonplace, and deservedly so. The second definition, however, does not share that privilege. To explain why Jackson wishes to pursue this second definition in tandem with the first requires the reader to quickly refer back to the second theme of Jackson. The second theme wanted to unify theory and practice (theory being the object, and practice being the subject). This definition wants to follow suit: to tie the definition of system up into two dimensions: the objective (holism as an objective property of systems) and the subjective (cognitive systems as the subjective property of participants (and we must not forget that cognitive systems relate to cognitive

interests which relate to knowledge-constitutive interests)). Even at this very basic level, Jackson is committed to the unification of theory and practice through the unification of subjective and objective dimensions (such commitment is, of course, commendable, though also, of course, such commitment necessarily fails to escape its own trap: the cognitive interest trap, where an interest explicitly calls for unification of *all* interests. Such commitment must be referred to the second definition of system and be analysed as a knowledge-constitutive interest).

Methodology as a systems definition can be seen as a reflection of Jackson's definition of system (that is to say an implicit rather than an explicit definition). This second definition develops as the book develops. The book is concerned with systems methodologies in the management sciences as this definition of system is concerned with systems methodologies. The definition of system comes as " diversity, range, effectiveness, efficiency... " (p.7) which refers to the systems methodology but reflects a necessary definition of 'system'. There must be a range of systems, in diversity, they must be effective and efficient. This second definition of system is not explicit but rather implicit with the concerns of the book.

CONCLUSION

The purpose of this first movement in this fifth chapter has been to offer an initial understanding of five contemporary and well balanced Systems Thinkers. Such an understanding enables the ensuing movements within this chapter to be appreciated within a certain manner. This initial understanding, therefore, is a direction that promotes the application of the ArCST. Promotion because the themes seek correlativity with the Three main debates (in that authors' themes respond to polemics in the way that the debates respond to polemics), the favoured words/phrases seek correlativity with the Four epistemological levels (in that authors' expressions evidence the way in which they think (epistemologicallly) about such themes), and the Systems Definitions seek correlativity with both the Three main debates and the Four epistemological levels (Systems Definitions attempt to combine, and in this case combining the two structural sides of the Three main debates and the Four epistemological levels). Correlativity here becoming an ability to establish a relative simplicity of relationship between otherwise highly complex phenomena. This relative simplicity is the relationship between this first movement and the following three movements, and the otherwise complex phenomena is the unguided and plausible relationships that may exist between these five Systems Thinkers. To be unguided is to fail to employ these four movements in relation to the four previous chapters. If we fail to employ such potential we admit ourselves unto the complexity of relativity, thus failing to establish a workable notion of correlativity.

In this first movement, therefore, we have established a need for a correlativity between an initial understanding and an architectural understanding of the five Thinkers. It is such a correlativity that seeks relative simplicity in order to suggest possible theses existing between these five Thinkers. Armed with this initial understanding we are able to proceed to the next movement, 5.2, the *Incidence of debates*.

MOVEMENT TWO: THE INCIDENCE OF 'DEBATES' IN THE SYSTEMS THINKERS' WORK

INTRODUCTION

We begin again with a simple tabulation. Each author is matched up against each 'debate', and the incidence of the latter within the former's work is registered. Building upon a thorough understanding of the debates through the three previous chapters we are now able to use these positions as a comparative force through authorial intentions.

Table 5.2 Incidence of Debates

Incidence of: Author	Margins	Fiction	Will
Beer	-Problem/ solution -language propositions	-Creation of other languages -Explicit use of narrative -Reality/fiction	-Will to cohere -Will to control -Will to survive
Checkland	-Anti-technology -Critique of Descartes	-Abstraction/ Real thinking -Science as story-telling -Humour	-Rational/ Irrational -Consciousness/ free will -Understanding of power
Flood	-Liberation -Power	-System science's use of metaphor	-3 dimensions of power -Power/ Knowledge
Flood and Jackson	-Explicit use of philosophical notions -Commitment to liberate	-Use of quotes -Metaphor	-Discursive will formation -Equal distribution of power
Jackson	-Emancipation -Respect of other and methodological limitations	-Brecht -Creative construction	-Will to master -Will to decide -Will to know

The aim of this tabulation is to show how each author has or still considers each of these three main debates current within Critical Systems Thinking. It must be shown here whether all the main authors denigrate these debates or vitalise these debates. It is suggested that one should take note of the previous tabulation (5.1) in order to witness the reasons for such denigrations or vitalisations. For example Beer's insistence upon 'autonomy' would restrict all definitions of 'Will' to 'free will' in a romantic attempt to show the positive potential results of Beer's Cybernetics. We must seriously consider the way in which these authors attempt to neglect these issues. Another fair example could be Checkland's denigration of 'Fiction' as a servant to a 'greater reality'. These notions, the manner in which these authors tackle such notions as: 'Margins', 'Fiction', and 'Will' is the concern of this second movement of this chapter.

5.2.1 BEER

In beginning with Beer we can show that denigration and vitalisation are equally important within any incidence of debates in his work. The reasons for this balance are complex, but a explanation would look at the previous section on Beer, where notions of entropy and negentropy are necessarily balanced:

> "The non-flowing of entropy, which normally and naturally increases in the evening-out of energy, is the very power of matter. This opposite or negative entropy - call it

> negentropy - holds the world up. We now know what negentropy is: it is precisely information. ... So although entropy inexorably tends to increase, that tendency is barred by injections of information." (Beer, 1978, p.28).

We must be aware of this intricate balance between entropy (denigration in this case) and negentropy (vitalisation in this case) that Beer employs when looking at the main incidences within the debates: Margins; Fiction; and Will.

5.2.1.1 Margins

There are two main instances of 'Marginal debate' in Beer: Firstly, a questioning of the boundary between 'problem' and 'solution' ; and secondly, a questioning of propositions about language. The first instance can be seen as a marginalisation of the author, marginalised from the recognition and authority that is traditionally attributable to an author who recognises and gives structure to a previously unknown problematic: "The problems that were worrying people will then be not so much solved as dissolved. This means that you will not get any credit. " (Beer, 1990, p.xiii). As the author contributes to the dissolution of the problem so (s)he contributes to the dissolution of her/his authority. Therefore, if the problematic has been seriously considered by the author, then the author will become lost within the complexity of the issue. The author will become marginalised to dissolution. A marginalisation that allows for a continuation of (unauthorised) authorial comments that lead to not a hardening of the problematic

(in the sense of a solution) but to an extension in the detail and significance of the problematic. This then, is the first instance of marginalisation as used by Beer. Where the author is marginalised from any solution of a problem because the problem is always more problematic than the author presumes, such a presumption leads to dissolution rather than solution.

The second instance of marginalisation concerns the incidence of undecidable propositions that operate within the confines of a language, but cannot be questioned unless the questioner adopts a marginalised position outside of that language. Here is an example of such an undecidable proposition (Beer, 1978):

(1) Acceptable men alone are appointed to run institutions
(as to appoint Unacceptable men would be absurd)

(2) Incompetently run organisations cease to be acceptable

(3) Therefore, Acceptable men run everything that is not incompetently run

Therefore to accuse Acceptable man of incompetence becomes undecidable. It cannot be said in that language. Once you have stated that only acceptable men are competent in running institutions, then it becomes impossible (undecidable) to accuse Acceptable man of Incompetence. The reasons for this undecidability

can be witnessed in the way that language operates. Language operates to exclude one term from another term. In this case, the terms are Acceptability and Incompetence. These two terms are forced apart by language. They need to be allocated different spaces with space between. Incompetence cannot come any where near Acceptability: anything Acceptable is necessarily Competent. In some unknown way, Acceptability consumes Competence, and in doing this distances itself further still from Incompetence. It consumes what the other is not and thereby increases its distance from what the other is. This is a further example of the excluding nature of language, firstly in separating out the two terms (Acceptability and Incompetence), and secondly in the predominant term consuming what is not the dominated term, and thereby separating further the two terms (Acceptability consuming Competence). Quite simply, therefore, Incompetence becomes marginalised from Acceptability. And the reason why this becomes problematical is because Acceptable man cannot be accused of being Incompetent. If we allow the language of exclusion to operate unchecked then we allow for Acceptability to masquerade as Competence. And if acceptability masquerades as competence then all measures of excellence are dictated by traditional or core notions, and such dictations stifle progressive change. It is only through an adoption of a marginalised position that we are able to question the exclusivity of language.

5.2.1.2 Fiction

There are three main issues within the incidence of Fiction. They are: the creation of other languages; the explicit use of narrative; and the Reality/Fiction divide. In these three issues we will witness the aforementioned intricate balance between denigration and vitalisation, in the sense that at one level 'Fiction' will be denigrated, while at another level 'Fiction' will be vitalised.

The creation of other languages begins in the quest for descriptive devices for Viable Systems. The simplest way of suggesting this creation is clear in the following quote: "My point is not that abstractions are unrealities, but [that] there is more than one set of them. " (Beer, 1990, p.xi). This necessary plurality is resemblant in this following Scientific/Cultural comment: "The big problem is this: you are not determining absolute facts: you are establishing a set of conventions. " (Beer, 1990, p.2). These two comments sit together well, as they both call for creativity in order to enhance descriptions of Viable Systems. There are, however, problems with Beer's interpretation of this creativity and what it may lead to. We are given a hint of this problem in the *Heart of Enterprise* (1979): "It is a question of creating a language that will discuss a viable system, and then of using that language to describe how enterprises are actually run. " (p.225). The notion of supremacy and creation is lost and replaced with actuality. In the first two quotes the issue is with creation in order to convene with the plurality of viable systems. In the third quote, however, this creativity is forced into a false representation of the 'actual'. Where the actual is a displacement of creativity; creativity has been used to aid viability until the 'actual' is glimpsed and all

notions of creativity are temporarily lost. We can sense this 'viability is reality', 'all other is fiction' in this short quote: "This is not organisational-chart talk at all. But it is real-life talk." (1990, p.128). This is the operation of the denigration/vitalisation balance. At first we see the vitalisation of creativity (in the first two quotes), in that we need to create languages in order to represent viability; Then we see the denigration of creativity (in the last two quotes), in that creativity, once used in order to allow for the conditions of viability to exist, has now been abandoned for an 'actuality' that exists only in a reduced notion of creativity. (Fiction as creativity becomes an embarrassment once the 'actual' or the 'real' can be 'sensed').

The explicit use of narrative in *Platform for Change* is a recognition for Beer that we need to change our reading and writing and thinking and "... running the world habits..." (1978, p.2). Four main narratives are given in this book: personal; arguments of change; thesis; and metalanguage. They all combine in offering a very powerful message. Beer has created a new language in this book because he takes exploratory narratives seriously. (Of course, one cannot afford to be too exploratory, as this may lead to savage complexity). This explicit use of narrative, and the creative use of a combination of languages, is fixed within the domain of 'Fiction'.

The Reality/Fiction divide has already been hinted at in this discussion of Fiction. There are again, two instances of denigrative thinking and two instances of vitalistic thinking. The denigrative begins in an indirect manner, where fiction (as the other to reality) is reduced to an oversimplification: "Thus we come to manage an oversimplified model of the world that exists only in the mind of the

consensus [see 'Mediocrity machine' in movement one] instead of the real world ... out there. This mismatch lies at the root of our incompetence." (Beer, 1978, p.50). Consensus is the 'fiction' that we must shake in order to demonstrate its lack of correspondence with reality. Consensus can be related to fiction here, firstly because it is the 'other to reality' and secondly because of the message from this quote: "His eyes exist; his ears-nose-and-throat exist; his teeth exist; and so on. But he himself is reduced to a fiction." (Beer, 1978, p.414). The message is overwhelmingly one of holism, but a holism that denigrates fiction to bifurcation. We can see, therefore, that in these two quotes, fiction is represented as oversimplification and bifurcation: this is Beer's denigrative thinking with regard to fiction. Let us now look at the vitalistic thinking. Firstly at a very interesting citation:

> "... my electronic image in the machine may be more real than I am. ... I am a mess; and I don't know what to do. ... Thus is my reality less real than my mirror image in the store. " (Beer, 1979, p.232).

Fiction in this quote is 'my electronic image'; and it seems to be more resonant than 'my reality' because it is organised and, to a large extent, viable. This is the attraction to Beer. Fiction is no longer an oversimplification and a bifurcation, it appears more real than reality, because it is more organised than reality. This positive view of fiction spills over into this following extract: "... the class of men who have always come nearest to perceiving his intentions [God as key-holder to the future] are the science-fiction writers. " (1978. p.444). Fiction in this reference has now become not just more real than reality but a predictor

of reality (fiction as a metasystemic system four to realities systems one and two). We can, therefore, confirm the denigrative/vitalistic balance within Beer's work, at once supporting and denouncing Fiction.

5.2.1.3 Will

Beer's consideration of 'will' as a basic drive takes on positive (vitalistic) and negative (denigrative) dimensions. We shall firstly show the positive aspects, because the negative dimensions outweigh them. To begin with 'will to power' (see chapter three for an extensive discussion on this) can be seen in a cohesive light:

> "It [power] refers to the ability of the organisation to gather itself together into an effective identity, to act as a unified whole. " (1979,p.418).

It can also be seen in a controlled light:

> "The condition of man today is wholly alarming ... Only when it is rightly understood can effective action be devised." (Beer, 1978, p.23).

And through these controlled and cohesive lights the 'will to power' becomes (somewhat contradictively) the 'will to survive': "... and in solving

them it will increase its own stability and survival power." (Beer, 1978, p.232). These three citations demonstrate the positive way in which Beer considers 'will'. In the first case a 'will to cohere', in the second a 'will to control', and in the third a 'will to survive'. These are all aspects of will and all can be seen here in a positive light. The negative light, however, is stronger. Closely related to the last point concerning 'will to survive' is an argument that pits will to survive against hierarchical power:

> "The reason that we still cannot escape the notion of hierarchy is the existence in all viable systems, which are after all always enterprises, of an equation of power. The will for survival seems to be what governs this equation." (Beer, 1990, p.91).

The entropic argument seems to raise its head again here; since the organisation is a viable organism, it follows then that it must have a will to survive. This is far from surprising, but why is there the need to suggest that power will somehow cancel itself out? This, of course is the thesis of will to survive, where only sufficient power is required to attack the invading entropy. Power is overall viewed here as a negative force, and should only be seen when it is absolutely necessary. A similar negative force flows through 'human factors': "Solutions founded on human factors ... [explains] why these issues are so poorly handled in contemporary society." (1979, p.143). The human link, as the will, as the unpredictable, should be minimised according to this scheme of things. And it is the human selfish power that disrupts the quest for viability:

> "It will be a matter of Three verses Four and Four verses Three - and one of them will WIN, as a matter of power. It usually happens. It is a signpost to disaster." (1979,p.258).

Power in this sense is most definitely 'will to power', and most definitely not the power of requisite variety. The power of requisite variety is called in to deal with situations such as this, and therefore we can see a duality of power: power as destructive (entropic, the old organisational tree) and power as constructive (negentropic, the viable systems model). Note this duality in the following:

> "Powers in the viable system derive from concatenations of information. They do not derive from the allocation of dependencies, which grow exponentially as the hierarchy extends upwards, and for those holders information is not concatenated but attentuated. " (1979, 324).

Power is information in the viable system. Power is dependency in hierarchical systems. Information subsumes power, as information dictates and arranges power, in the viable system, this is why "... we cannot afford to confuse metasystemic structures with structures of power themselves." (1978, P.158) . We cannot afford to confuse because power can be destructive, while information is mostly constructive, this is the overriding principle of existence for the viable system, it exists as information distinct from destructive notions of power (There is a possible contradiction here in Beer's work, since this separation of power

and information is similar to the heavily criticised separation of acceptability and incompetence; contradictions such as these become the interest of the second stage).

5.2.2 CHECKLAND

5.2.2.1 Margins

The power/information relationship continues as an example of the advancing of a marginal debate in the work of Checkland. The debate centres on 'anti-technology':

> "If we are to improve systems analysis and to prevent its misuse, we can no doubt learn from this [anti-technology] school of thought, which attacks as anti-human the whole notion of applying scientific thinking in human affairs." (1988, p.145).

Checkland refers to the anti-technologists in an attempt to enter into the weltanschauung of the 'counter culture'. A counter culture that questions the limitations of the application of Science. Such questioning, for Checkland, is of immense importance since it creates the possibility for a serious challenge to the orthodox and scientific Hard Systems Thinking. Checkland, therefore must enter

into this marginal argument in order to seriously question his scientific inheritance. He only provisionally affords himself this possibility of marginal discourse, and quickly retreats into a positive definition of science as

> "... a learning system which establishes only provisional findings which may then be replaced by later learning..." (1988, p.146).

This 'science-as-learning-system' acts as a sufficient response to the main critique of the anti-technologists: that science forces man to become mere technique. For Checkland, the learning system that is science will be able to overcome 'technocratic science', as 'learning' is more 'human' than 'technique', and SSM is more learning-orientated than technique-orientated.

A second example of the use of a marginal debate in the work of Checkland relates to a questioning of the dominant Cartesian philosophy of science:

> "Systems thinking, however, starts from noticing the unquestioned Cartesian assumption: namely, that a component part is the same when separated out as it is when part of a whole." (1988, p.12).

Systems thinking itself is the marginal debater here, rather than Checkland in particular. However, the question of systemicity is developed in Checkland's Soft Systems Thinking (SST) from Hard Systems Thinking (HST). Where HST prefers systematic methodologies, SST prefers systemic methodologies. We can

witness, therefore, that Checkland, in his consideration of the Cartesian orthodox from a marginal position, takes the anti-systemic threat more seriously than Hard Systems Thinkers.

5.2.2.2 Fiction

The incidence of 'fiction' in the work of Checkland is not merely restricted to two Nabokov quotes. There are three distinct occasions in which 'fictional notions' are used. They are: abstraction/real thinking; science as story-telling; and humour. The abstraction and real thinking distinction operates as a fictional device in its juxtaposition of real and unreal (fictional in the conventional sense). The clearest example of this is the 'real world/thinking about the real world' boundary which is found in Checkland's SSM. The 'thinking about the real world' is the fictional incidence, it is abstractive thought, similar to one of Checkland's system classifications: designed abstract systems:

> "We also see in the world a large number of what may be described as designed abstract systems such as mathematics or poems, or philosophies. " (1988, p.110).

Such abstractions are a result of an ordering of the human mind. These abstractions allow a certain degree of freedom for thought, and to this extent encapsulate 'thinking about the real world'. They are examples of 'systems thinking' and relate to 'below the line' thinking. The incidence of fiction,

therefore, translates as an incidence of abstractive thought in the work of Checkland, in this first instance. This division allows Checkland to create 'fictions' in a freedom that cannot be obtained in the 'real' world (this shows his traditional modernist orientation, after Forster (1963)). Checkland, however, fails to realise that the real world cannot be divorced (or cannot afford to be divorced) from such creative thinking.

In the second instance, science as story telling is used in the following quote:

> "... what OR can provide is one crucial contribution to a management decision, a rational story of the firm ... but it can hardly generate the kind of irrational decision which, in a management situation, often turns out to be a good one." (1988, p.73).

OR can provide one side of what is required: the rational side. It can do this as a rational interpretation, a rational story. The irrational, however, cannot so easily be narrated by OR. The irrational is beyond the scope of OR. Checkland, in this quote relates this 'rational story' to a "...single performance criterion..." (p.73). In order for Systems Science to look beyond the scope of the single criterion it must stop telling 'rational stories'. This, therefore, is an unflattering use of fiction (fiction as 'story telling'). Story in this case refers to a superficial reduction of complexity. A more flattering use of fiction can be found in

Checkland's citations of Nabokov (1988, p.71). These citations are used as summarising devices. In the case above, Nabokov is used to ridicule HST's futile quest for basic laws as explanations of man's actions.

In the third instance, humour can be viewed as an incidence of fiction. On pages 217 and 218 of *Systems thinking, Systems practice* Checkland considers situations "... in which a W [weltanschauung] is suddenly confronted by a different W in sharp conflict with it."as being humorous situations. When a joke is told by a skilled comedian, it will usually begin in slowly building up a lavish description of a certain W, and then suddenly a counter-W will attack this 'established W' thereby showing its ridiculous assumptions. The embarrassment in initially having faith in the 'established W' is released as laughter. This procedure is an incidence of fiction as the 'established W' becomes fictional because of its revealed ridiculous assumptions. Here ridicule equates as fiction, but in this case this 'ridiculing' is taken as a very serious device in the process of establishing weltanschauungen. (The implications of this understanding of humour are explored in the next movement).

5.2.2.3 Will

The incidence of 'will' in Checkland's texts concentrate mainly upon the notion of 'free will' in a manner that complements Soft Systems Thinking. There are, however, three clear ways in which Checkland challenges the problematic of 'will': firstly as the boundary between the rational and the irrational; secondly

as a relationship between consciousness and free will; and thirdly as an understanding of power. The boundary between the rational and the irrational is under the control of the will. The will decides what is to be released as rational from an irrational base. This separation is concurrent with the earlier fictional separation of reality and abstraction:

> "... what OR can provide is one crucial contribution to a management decision, a rational story ... but it can hardly generate ...[an] irrational [story]..." (1988, p.73).

SSM is set, in an holistic guise, to tackle this form of complexity called 'irrationality'. This irrationality refers to the 'unique content' of problematic situations as discussed in the previous stage. Irrationality, therefore, is that which does not obey with the structuralism of OR and other HST approaches. This therefore, as Checkland's definition of irrationality, is very different to the irrationality definition of will, unless we allow ourselves to accord OR a will, and in which case Checkland's definition of irrationality becomes that which is not released by the 'will' of OR (as an authorising community). This notion of will would also explain the designed abstract systems (one of Checkland's systems classes), which "... represent the ordered conscious product of the human mind ... exist[ing] as a result of a positive act related to some objective. " (1988, p.110). The positive act is the propulsion from the will, and the 'ordered conscious product' is that rationality which is allowed to exist outside of the will. We could suggest, therefore, that the 'will', be it individual or collective, is the most

subjective dimension (or lack of dimension) within the individual or collective subject. If this can be accepted, then SSM admits to take the notion of will seriously:

> "Overall the aim of SSM is to take seriously the subjectivity which is the crucial characterisation of human affairs and to treat this subjectivity, if not exactly scientifically, at least in a way characterised by intellectual rigour. " (1990, p.30).

The second incidence of will is shown by Checkland's relationship between consciousness and free will, which is clearly given in this quote:

> "The consequence of self-consciousness is that the human being is irreducibly free." (1988, p.116)

According to this quote, self-consciousness promotes free will. This needs some kind of perspective. The act of creating another self, that self as a 'conscious-self', allows the will to be free. To be free is to be detached, neutral. To be free is the naivety of positivism. To be detached is to dislocate the human condition. To be neutral is the means towards objective knowledge. Free will, therefore, is the creation of positivism, but free will, for Checkland, is the necessary condition for a serious, intellectually rigourous, study of subjectivity. For SSM, free will is the reward for such a study. But free will is nothing more than a vacuum that has failed to be created by the mechanisms that support a positive science. And these mechanisms have created HST, and therefore, it would seem that Checkland would wish to distance himself from such mech-

anisms. He does not do this, and thereby pushes the aims and mechanisms of SSM into an obvious fundamental agreement. (This goes beyond Checkland's ideas of complementarity discussed in stage three). An agreement that may undermine the entire enterprise of Soft Systems Thinking.

It seems necessary to consider Checkland's orthodox view upon 'free will' a little longer. Referring to the above quote in conjunction with the ensuing quote will offer grounds to further clarify Checkland's views upon the notion of free will.

> "...life is not happy in a world dominated by technique, a world in which human freedom is gradually lost." (1988, p.145)

This is interesting because technique is shown as the enemy of 'human freedom' (the expression of 'free will')(it must be noted here that such a notion of human freedom is in direct opposition to Beer's notion of freedom as being heavily dependent upon technical efficiency). The argument: the ends toward which we are heading have not been considered carefully; the means have, but only in the interests of economic efficiency; to continue is to mistake means for end and thereby eroding the quality of the end as ultimate aim; ultimate aim as 'human freedom'. Checkland in responding to this problematic seeks to promote self-consciousness through studies of subjectivity, in agreement with the ultimate aim of human freedom ('the human being is irreducibly free'). In an ironical turn, however, we have discovered that 'to be irreducibly free' is to be in fundamental agreement with the canons of positivism (freedom as an ally to the

accumulation of knowledge). This would explain, therefore, why Checkland thinks that "...it ought not to make us give up the attempt [of using the scientific method]." (1988, p.146). This does not explain, however, why SST is any different from HST. A further explanation is also needed in Checkland's third incidence of will: as an understanding of power.

> "What are the 'commodities' (meaning the embodiments) through which power is expressed in this situation? " (1990, p.51)

This question is the main question that Checkland asks in his 'Political analysis' in his developed form of SSM. The answer requires a simplistic objectification of power. For example, 'power as membership' or 'power as personality'. Power is given a location, it has been spotted, it has been stopped as a active force, it has been 'subjectively understood'. No. The will as creation of power has no such luxurious location. Will as creation of power is unable to separate out 'power' as a distinction. The creation of that power exists as an inarticulation. If it could be articulated it would cease to be destructive as a creative force. If it ceased to be creative, it would cease to be worthy of study. This simplification of 'power as commodity' simply obeys the laws of commodification that dictate the ethos of management science, and therefore seek to maintain current power relationships, since current power relationships wish to be analysed in this manner. This cannot be viewed as a serious study of power as it neglects the notion of will. Neglecting the notion of will is to neglect the possibilities of power, and to dress power as a commodity that exists in 'manageable chunks'.

5.2.3 FLOOD

5.2.3.1 Margins

Power is taken seriously by Flood. In consideration of the work of Flood with regard to the incidence of positions we must commence with the adopted marginal positions. Finding two examples both respecting the complexities of power, liberation and power, we are able to begin our study of the positions. Liberation favours a marginal position since the possibility for liberation requires 'that which is being pre-vented' to be 'vented' (in the sense of the Latin *ventum* or *venire*, meaning 'to come', from the Latin *praevenire* 'to come before'; and also from the Latin *ventus* meaning 'wind' and from the French *eventer* meaning to 'expose to air'):

> "Critique is an important part of Foucault's work. The aim is to provide the possibility for discursivities to be liberated, that are otherwise *prevented* from being 'seen or heard', known or even formed ..." (Flood, 1990, p.44, my emphasis)

It is the act of the marginalised critique that allows for the 'prevented' to be 'vented', for the unseen to be seen and for the unheard to be heard. The act of liberation is the 'ventilation' that 'comes' as a result of a critique of that which pre-vents. Flood's interpretation of Foucaulvian critique rests upon this act. An

act that is predominantly marginal in nature, for in order to question the 'act of prevention' one must be able to stand away from (in the margins of) that act. This must be the case, and yet there exists some paradoxical relationship between acting in a marginal sense (in order to question the act of prevention) and acting to see the unseen. To pursue this paradox, we must retrace Foucault's work (as Flood has) in order to seek some kind of response. Such a response is found in Foucault's interpretation of Jeremy Bentham's *Panopticon*. The word 'Panopt-icon' refers to "... a technology of power designed to solve the problems of surveillance." (Foucault, 1980, p.148). It consists of a centralised observation point be it in a hospital, a prison, a school, or a work place. This observation point is at the centre of a ring, an inner ring with windows that open out onto an outer ring with windows that allows light to pass from the outside to the inside, and therefore the outer ring to be observed by the inner ring. The observer purveys over the inner ring observing the 'inmates' (the lunatics, the criminals, the schoolboys, the workers) housed in the outer ring. The emphasis is on two main things: visibility and centralisation. The point of observation begins from a centralised position then spreads out in the interests of visibility and returns to the centralised position. The paradox now begins to take some shape via the *Panopticon*: is it the case that liberation from a marginal position can necessarily see the unseen without activating a process that acts upon this visibility in order to centralise all visible acts? In short, is this act of 'liberation' augmenting the act of centralisation? If this is the case, then a very serious paradox has been uncovered and must continue to be uncovered (since a paradox cannot be controlled by the centralisation of that which is visible). Where the unseen can now be seen, the uncontrolled can be controlled:

> "... the principle of the dungeon is reversed; daylight and the overseer's gaze capture the inmate more effectively than darkness, which afforded after all a sort of protection." (Foucault, 1980, p.147)

The act of liberation has allowed the unseen to be seen, but coupled with the act of centralised vision the act of liberation becomes subservient to a rigourous power. What, then has been liberated? The 'all-seeing' power? Flood's liberating intentions are not in accord with the *Panopticon*, but are in accord with its opposite, a Rousseauist dream

> "... that each individual, whatever position he occupied, might be able to see the whole of society, that men's hearts should communicate, their vision be unobstructed by obstacles, and that opinion of all reign over each." (Foucault, 1980, p.152).

Flood's dream of liberation, therefore cannot be seen as adopting a marginal position, because it fails to consider 'the observer of the act of liberation'. Where the Panopticon requires that 'Each comrade becomes an observer', Flood is more prone to suggest the 'Each observer *should* become a comrade' (cf. Foucault). The Floodian act of liberation, therefore, is not found in the unseen being seen, but is in fact made paradoxical by the act of the unseen being seen. Flood emphasises liberation at the expense of observation. Such emphasis harms the potential for an otherwise powerful marginal critique.

Continuation of the marginal positions in Flood's work brings us directly in to the face of *Power*. As before the critique is Foucaulvian, and now the notion of power is Foucaulvian:

> "Avoid an analysis of power in terms of sovereignty and obedience. Rather than focusing on regulated, legitimate, and centralised forms of power, be concerned with power at the extremities, with its regional and local forms, where it becomes less legal." (Flood, 1990, p.44; see Smart, 1983, p.82-84)

This quote follows as the first of Foucault's five methodological principles. It is chosen as an examlpe of an exercise into marginalisation with regard to power. In this quote the concern with power is at the extremities, the margins. It is at the margins that power becomes less legal, and therefore more amenable for study. Where in the regulated domain of power, the legalities confuse the effects of power, the legalities are mistaken as power. The legalities are always in the singular seeking a unitary spirit, while power is a plurality that continues to seek discontinuities. It is only in the margins that power escapes the unifying force of sovereignty and is able to operate as a generator of this normalising effect. And it is this generation, this changing of the mode of existence, that is the interest of power, not the stale unification of knowledges (power and its specific relationship with knowledge is the interest of the third position: Will). It is here that Flood takes Foucault seriously, and it is here that a marginal position is taken seriously by Flood.

5.2.3.2 Fiction

The marginal theme now changes to a literary theme: we search for the incidence of Fiction in Flood's work. This search for fiction is quite simply (though never appears as such) a search for theories or notions that are reserved or prevented from being taken seriously. Notions or theories that are graded as second rate for no apparent reason. The incidence of fiction in Flood's work, therefore, looks for such means of grading and considers to what extent Flood takes 'Fiction' as a serious study, as a study that seeks to dispel the second rate grading.

We find two clear examples of the use of fiction in Flood's work: firstly as System Science's use of metaphor; and secondly as a direct use of fiction. The first incidence considers the use of 'metaphor' in Systems Science. From the natural sciences to soft systems thinking, systems science has failed to understand the 'deeply textual' nature of metaphor. Soft systems thinking has merely manipulated

> "... basic ideas of wholeness from the natural sciences ... [by constructing] straight forward organic relations between wholes, which are built on notions of the 'open system' view." (Flood, p.80).

We can begin to see, therefore, that Flood takes 'fiction' (through an understanding of metaphor) seriously in his attempt to ontologically reconceptualise systems thinking.

> "Literary metaphors are deeply textual whereas Atkinson and Checkland have developed metaphors that are abstract and artificial." (Flood, 1990, p.80)

The accusation of abstraction and artificiality must not be taken too directly, because: "The systems metaphors ... are examples of the rich *abstract* output of a 'first' systems struggle..." (p.80, my emphasis). The accusation of abstraction at the bottom of the paragraph on page eighty is paraded as a complement at the top of the paragraph on page eighty. And if we are to understand that any abstraction is artificial, then we must accuse Atkinson and Checkland of failing to grasp the literary significance of metaphor, and accuse them of simplification rather than abstraction. This must be understood as Flood's general intention here, and again we can posit that fiction is given a serious consideration in his work.

Flood's direct use of fiction is direct as seems possible given the general climate of tolerance within Systems Science. The use is restricted to 'parenthesis' and 'notes'. However, given the climate this comes across as a shrewd use of fiction, as a more direct use would fall into the 'climate's' definition of absurdity and therefore marginalise the text and restrict its overall influence in Systems Science. There are three direct uses of fiction, by reference: Winnie the Pooh; Woody Allen; and Carlos Castenada.

The use of Winnie the Pooh (p.91) ridicules the attempts of systems thinkers to identify boundaries. A boundary is a creation of systems thinkers, but a creation that is hypostatised, and therefore the problematic of boundary identification is nothing more than a problem of 'why have you chosen to draw the boundary here?'. It is the systems thinker that draws the boundary, therefore, it is the systems thinker that must change the boundary. Flood draws an analogy here with Winnie the Pooh's *heffalump*: a creature is created that has no meaning outside of the act that created it. A boundary has no meaning outside of the system thinker's domain of meaning. Flood's use of fiction here is commendable, as he uses something (previously thought of as) trivial and childish to highlight the ridiculous problematic that systems thinkers have created for themselves (this problematic now becomes trivial and childish, as the previous conception has displaced the current conception; this can be related to Checkland's use of humour as 'W changing').

The use of Woody Allen (p.185-186) adds a comical dimension to the problem of paradigm (in)commensurability as highlighted by Kuhn (1970a). Where Newton and Einstein look at the same world and see different relations, Miles Monro awakes in Woody Allen's *The Sleeper* to find that smoking is good for one's health. Though not sharing the same problematic, this analogy shows how different modes of interpretation come across as either incompatible (Einstein from Newton) or simply farcical (two hundred years into the future). The use here of fiction does not seek to denigrate but to complement it with the overall problematic of paradigm (in)commensurability. This complimentary use of fiction is worthwhile but must be pursued more thoroughly in its general integration with the main text (it must not be left in the sidelines as 'notes').

The use of Carlos Castenada (p.187-188) extends the notion of complementarity, using Castenada to explain how an epistemology of complementarism can be used. Don Juan explains his knowledge (sorcery) as learning to save energy in order

> "... to handle some of the energy fields which are inaccessible to you now. ... Sorcery is a state of awareness. Sorcery is the ability to perceive something ordinary perception cannot." (Castenada,1987,p.8; taken from Flood, 1990).

It is not clear how complementarity relates to this extract from Castenada, however, one possible interpretation could be that complementarity requires an ability to conserve energy in preparation for inaccessible knowledges. Complementarity is, therefore, viewed as an attitude of openness and of possibilities. Fiction, in this case, paints this picture of possibilities, and can be seen as determining possible definitions of complementarity.

5.2.3.3 Will

The third debate to be considered is 'Will'. This position, as explained in the previous chapter derives from the Nietzschean *will to power*, and possesses a complex definition. To think along the lines pursued in the previous chapter we can consider the *will to power* as a *will to truth*, the following citation from Nietzsche's *Thus Spoke Zarathustra* (part II) outlines the general position that must be pursued in this section:

> ""Will to truth"you call it ...? A will to the thinkability of all being: this I call your will. All being you want to make thinkable: for you doubt, with well-founded suspicion, whether it is thinkable. Yet it shall yield and bend for you. ... Smooth it shall become and serve the spirit as its mirror and reflection. That is your entire will ... a will to power ..." (12)

The will to truth comes from the will to power, truth is a function of power, power dictates truth. Truth becomes a political player that cannot be divorced from the declarations of any writer. If the systems thinker takes this relationship between truth and power in a firm manner then we can begin to further appreciate the relationship between power and truth. This, thus, is the intention of the 'Will' debate, and we shall now relate this debate to the works of Flood.

We discover two very clear enunciations of this relationship between truth and power. The first gives power in three dimensions: non-discursive; dominant cultures; constitution. The second develops these notions of power along with knowledge.

The first dimension of power comes with an introduction to the work of Foucault:

> "Genealogy, then, is analysis of the development of humanity, as a series of interpretations emerging from a relationship between power and knowledge in discursive and nondiscursive relations." (Flood, 1990, p.43)

The important phrase here is 'discursive and nondiscursive'. The discursive aspect relates to the knowledge. The nondiscursive aspect relates to the power. These aspects cannot be separated:

> "We are subjected to the production of truth through power and we cannot exercise power except through the production of truth." (Foucault, 1980, p.93)

It is the nondiscursive aspects that are never sufficiently considered in any epistemological consideration. And it is these aspects along with the discursive aspects that formulate the relationship between power and knowledge. Flood's first dimension of power instigates this nondiscursive aspect.

The second dimension of power remains faithful to the first dimension in that dominant cultures develop from localised conditions which must obey the rules of the first dimension:

> "... localised procedures of power effected at a micro level may be traced upward revealing dominant cultures." (Flood, 1990, p.15)

These dominant cultures are dependent upon the micro levels that give them their dominance. To this extent the notion of a transcendental truth as unity makes no sense, because such a unity is only possible if the dominant culture ignores its micro level status. To ignore this status is to relinquish the nondiscursive aspects and thereby abandon any notions of unity. This citation from Flood, therefore, maintains the complexity of relationships between power and knowledge, and helps the reader to develop these nondiscursive aspects.

The third dimension of power is perhaps the most difficult to comprehend precisely because it questions the possibility of comprehension (centred in the Cartesian *cogito*). The clearest utterance of this third dimension is given on page forty-five:

> "Individuals do not possess power, rather they constitute its effects." (Flood, 1990)

One of these effects is the attempt to understand, which is highlighted in the will to truth. We can see, therefore, how directly this third dimension relates to

the position 'Will'. Power has no centre, it is rather a plurality of effects. No person has power, all they can achieve is an understanding of its effects. There is no Cartesian gaze that centres power in the *cogito*. The individual is not fixed, attentive to the perceived problems. The individual is a creation that re-creates itself in order to understand the effects of power. Responding to the will to power through the will to truth resting upon the re-creative individual.

The second clear enunciation of the relationship between truth and power is given in a combination of the three previous dimensions. The relationship between power and knowledge is clarified in this quote:

> "Emergence in particular momentary manifestations arises because of domination at local discursivity levels imposed by nondiscursive subjugators ... A situation of conflict leads to subjugation and thus to resistance and relations of power." (Flood, p.119)

The three dimensions can be highlighted in the following manner: first dimension - 'nondiscursive subjugators'; second dimension - 'domination at local discursivity'; third dimension - 'emergence in particular momentary manifestations'. In accord with these three dimensions Flood is able to consistently develop the relationship between truth and power, though the extent to which this is achieved is constantly at the mercy of nondiscursive subjugators. We can, therefore, suggest that Flood makes a valid attempt to develop the relationships between power and knowledge within the domain of systems thinking, and thereby takes seriously the position of 'Will'.

5.2.4 FLOOD AND JACKSON

Moving on to the combined work of Flood and Jackson, Total Systems Intervention (TSI), we find that the incidence of positions is very much reduced. This comes as no surprise to anyone familiar with the problems of pragmatisation. To pragmatise an epistemological position (in this case the combined positions of Flood and Jackson into one book) forces a different priority upon the organisation of a text. For example, all lengthy discussion is summarised very briefly, more diagrams are used (in order to be more economical with information per space used) and a harsh systematic structure must be adhered to (see the first movement's section on TSI). Because of these reasons the incidence of positions in TSI is truncated.

5.2.4.1 Margins

Let us begin with the incidence of 'margins'. There are two incidences in TSI: the explicit use of philosophical notions; and the explicit commitment to liberate. The first incidence of 'margins' arrives when during the critique of TSI the authors explicitly introduce the importance of a marginal discourse upon the mainstream discourse of management science. That marginal discourse is philosophy. Philosophy is often seen as a dead, or at least obscure, discipline, but

Flood (see the third movement on LST to support this thesis) and Jackson insist that philosophy is essential in coordinating the efforts of managers. Philosophy in fact makes the manager more practically orientated:

> "The TSI analyst, the one the critic accuses of being philosophical, is in a stronger position to handle the realities in a relevant way - he/she is much more practically orientated." (p.244)

The practical orientation comes with an enhanced overview of the discipline called management science. TSI is the application of a critical philosophy upon this discipline, and TSI in its efforts to organise the systems methodologies can be seen as a more practically orientated approach.

The explicit commitment to liberate rests with TSI's proclamation to search for the reasons for the unpopularity of certain systems approaches (for example Ulrich's *Critical Systems Heuristics*). We may consider this commitment in the form of the following citation from TSI:

> "From another angle we could point to a dominant or institutionalised view of knowledge, such as the traditional rational scientific approach, dictating which methodologies are legitimate. These are examples which suggest why it is important to enquire into the popularity or otherwise of

certain systems approaches in given circumstances, and to "liberate"those which are illegitimately suppressed." (p.244)

The aim here being to liberate those approaches that have been marginalised by the traditional scientific approach. This is a marginal position because its concern is with the unused knowledges of the margins. With regard to the problem with the interpretation of legitimate and illegitimate suppression, may I refer the reader again to the first movement's consideration of TSI.

5.2.4.2 Fiction

The use of fiction in TSI is restricted to the quotes at the beginning of each chapter and the use of metaphor. The quotes serve to set the scene for each of the chapters. They act as a philosophical guide to the main text. They are effectively in parenthesis, though they do help to shape the interest of each chapter. The first quote concerning the death of P'an Ku opens up the chapter on 'The nature of systems thinking' with an introduction to the use of metaphor. Metaphorically the body of P'an Ku is given as a resemblance to the world. Such use of metaphor is continued in TSI. And the authors state that "We are arguing for the disciplined and systematic use of metaphor." (p.15). Their use of metaphor is in fact systematic, in tune with their overall theme (see previous movement). Their disciplined use, however, is somewhat faulted when on pages 14 and 15 the authors confuse metaphor with analogy. The difference between these two

methods of comparison is often slight, which calls for ever more discipline upon recognition. The introduction of 'analogical reasoning' should not be confused with the trope that we call metaphor, as it is confused in the water example. Analogical reasoning is not a tropism, analogical reasoning requires scientific accuracy with regard to the *logos*, while metaphor requires the recognition of a double literal meaning in the word being used. If a disciplined use of metaphor is argued for, then this distinction must be made clear (see chapter nine for further discussions concerning fiction).

5.2.4.3 Will

The incidence of 'Will' in TSI is in two forms: discursive will-formation; and the equal distribution of power. 'Will to power' takes on a pre-occupation with self-control in TSI, as in this quote:

> "Human beings have, therefore, an "emancipatory interest"in freeing themselves from constraints imposed by power relations and in learning, through a process of genuine participatory democracy, involving discursive will-formation, to control their own destiny." (p.49)

The neglection in this understanding of 'will to power' is that 'power relations' cannot be escaped from into some form of self-controlled destiny. It is the effects of these very power relations that force us to think that we are in

control and that we are pursuing some form of truth separated from these power relations. The Habermasian notion of discursive will-formation believes in the force of the better argument, and that this force has no relationship with the power relations that it is trying to overcome. We must state, therefore, that the incidence of 'will' in TSI requires some rethinking in order to be taken as a viable thesis on power relations (see the section on Flood in this second movement).

The second form exists here in:

> "... an openly declared emancipatory interest in an equal distribution of power and chances to satisfy personal needs, and in liberating people from dominance by other people and forces they do not currently control." (p.244)

In this quote power is commodified as it is with Checkland's usage (see above). Power is assumed to be an entity that can be shared out into equal quantities. And this quote also assumes that once this has occurred then personal needs can begin to be satisfied. The very notion of personal need is an effect of power, the will to power compels us to search for our own personal truths. This is not, however, a liberation from the dominance of others, since it is the dominance of others that compels us to seek personal truths. In fact, very often it is a direct consequence of the dominance of others that we attempt to find some form of autonomy. The position with regard to will seems to suggest that the desire to control our own destinies manifests itself as 'dominance by other people'

when that self becomes the other. It is the relationship between the self and the other that interests here and it is a study of this relationship that shall help us to develop the position with regard to will.

5.2.5 JACKSON

The work of Jackson will finish this section by developing from his contribution in TSI. The incidence of positions in Jackson's work comes in eight different forms: three from the marginal position; two from the fictional position; and three from the will position. Each of these incidences shall be looked at in turn and their relevance to Jackson's overall aims will be highlighted.

5.2.5.1 Margins

The three distinct incidences of marginal positions in Jackson's work begin with a general aim, continue with an interpretation of Churchman, and finish with the development of 'soft O.R.'.

The general aim of Jackson's work (and there exists no particular reference here) is to actively promote the emancipation of marginal elements and marginalised people in society (as applied to management science) as a whole. The marginal elements refer to the knowledge-constitutive interests that are neglected

(alienated knowledges), and the marginalised people refer to those people who have no control over their destinies (alienated people). Jackson is keen to liberate those alienated knowledges and those alienated people. Two aspects that show the incidence of a marginal position within Jackson's work.

Jackson's interpretation of Churchman shows a second incidence of a marginal position. This incidence comes in two celebrated quotes from the work of Churchman. The first:

> "The systems approach begins when first you see the world through the eyes of another." (from Churchman's *The Systems approach*, as quoted on page 136 of Jackson, 1991)

The marginal position here refers to 'the eyes of another'. The eyes of another see you. The other's eyes begin at the margin between you and your eyes, as you can see the other's eyes and the other can see your eyes. The other's eyes, therefore, begin at the margin between you and your eyes. The marginal position begins between you and your eyes. The marginal position is the other's eyes. To respect the marginal position you respect the other's eyes (ie the other's point of view, since we are still caught up in the Platonic notion that the eyes are the gateway to all knowledge (this relates to the seriousness accorded to empirical studies and to the maxim 'I'll see it with my own eyes')). The systems approach, therefore, as seen through the eyes of Churchman, and then the eyes of Jackson, is respectful of marginal positions.

The second:

> "Increased sophistication in inquiry comes with recognition of the limitations of whatever inquiry system is employed." (from Churchman, 1970, as quoted on page 137 of Jackson, 1991)

The limitations of any methodology arrive when its effects become marginal. The limitations arrive when the methodology loses all sense of purpose, rightness, commitment. The limitations usually translate as weaknesses (ie a position where Jackson would not register that particular methodology in that particular domain). However, to respect a marginal position (as we do above) we must respect limitations, to know when the effects of what we are doing become marginal. Respect of this marginal position must relate to respect of the marginal position above, that is to say that the other's eyes must be used in order to arrive at a better understanding of the limitations of any approach that one uses.

A third incidence of a marginal position came when 'soft O.R.' developed out of traditional O.R. . The inability of traditional O.R. to cope with more than one point of view in one investigation forced the development of a softer approach:

> ""soft O.R."... exists rather on the fringes of the traditional discipline ... accept[ing] the need to work with a plurality of world views." (p.83-84)

Jackson admits to the value of such marginal activity, but also shows that 'soft O.R.' is too soft. So soft in fact as to have no direction at all. This is unfortunate, nevertheless Jackson's support of such marginal activity, in essence, is full.

5.2.5.2 Fiction

The incidence of fiction is Jackson's work is sadly very limited. Because of the seriousness of the text, the only opportunity that Jackson allows himself to indulge in fiction is at the very end of the book (p.280). The use of fiction here is very strong. It comes as a quote from Brecht's *The life of Galileo*. The sentiment from it is one of alienation. The possibility that man becomes alienated from what man does to such an extent that what man does destroys man in the name of the progress of what man does (the Brechtian irony of progress). There is no real comment attached to it, as the comment is Jackson's preceding text.

There is a second use of fiction in Jackson's text (though defined from a historiographic metafictional perspective (see, for example, Hutcheon, 1988,p.105-231) which means that there is an admittance that the history that we have, that we see, that we write about is the history that we have, that we see, that we write about. We create history, it does not simply exist in a neutral state. And if we create history, it necessarily must be fictional to some degree). Consider this quote from Jackson:

> "At some stage, however, the emphasis had to shift from critical questioning, which was insightful but not clearly grounded, to the creative construction of a well-theorized and coherent critical alternative in management science." (p.184)

This admittance to a 'creative construction' refers to the idea that history only loves those who dominate her (cf. Rushdie, 1978). In order to dominate history, one has to create some thing that will conquer that which could have existed in its place. Jackson's choice for a possible domination of history is a 'critical alternative', because critical alternatives are able to dominate the uncritical mainstay. It is this creation of a critical alternative that qualifies as a use of fiction. Historiographic metafiction (for a fuller appreciation of this see chapter four) privileges multiple points of view and the control of a narrator ((or theorist) to construct a coherent narrative (or theory)). We can see similarities with this notion of historiographic fiction and the notions represented in the above quote (if we show sufficient terminological flexibility, which of course will add coherence to any theory). We can, therefore, witness a second incidence of fiction in Jackson's work.

5.2.5.3 Will

The incidence of 'will' in Jackson's work arrives in three particular guises: will to master (p.15); will to decide (p.195); and will to know (p.206).

The 'will to master' in Jackson comes as a surprise to anybody who only sees the word 'liberation' in one dimension. The normal dimension is one of release, however, a second dimension exists: the 'mastering' dimension:

> "If successful, the analyst liberates subjects from unconscious forces that they could not control and increases the area over which they have rational mastery." (p.15)

In this citation from Jackson, liberation corresponds to rational mastery. To liberate oneself is to increase one's mastering through rationality. In this sense, therefore, the will to liberate is the will to master (rationally).

The 'will to decide' in Jackson refers to a critical dimension within decision making: is it always the case that the powerful possess the 'will to decide':

> "For example, the choice of a hard or cybernetic methodology implies that one goal or objective is being privileged at the expense of other possibilities. Is this goal general to all organizational stakeholders, or is it simply that of the most powerful?" (p.195)

The contention in this quotation is that the 'will to decide' is represented by the most powerful (if not then no problematic exists here for Jackson, but since Jackson agrees with Habermasian social theory up to the point that the technical interest (represented here by hard and cybernetic methodologies) dominates social interaction then we must presume that a problematic exists here). The critical movement requires the 'will to decide' to be shifted from the most powerful to the most correct (by force of the better argument). If, however, the 'will to decide' can be divorced from the most powerful (or indeed from any notion of power) then who makes that decision? Such a decision needs to be taken by somebody with power, or is it possible for the 'general' to democratically decide? The 'general' is vested with power but such power cannot be detected since it has no 'body' (unlike the some 'body' with power), does this mean, therefore, that the notion of power must always relate to the occupation of that power in a body? If not, then how can such power be detected and consequently defeated by the better argument? This seems to be the problematic raised here: power and its bodily detection. If power can be detected then maybe some methodology can be applied which questions that power. If, however, power cannot be detected then we are left without recourse, and we must recognise the limitations of our methodologies (see 'margins' above). There is another problem. To give power to the 'general' (if we can pass power from one point to another which is highly unlikely) is to sacrifice any possibility of understanding power (if we posit that power can be detected as manifesting itself in bodily form) since the 'general' has no 'body', it evades detection, and yet it is the 'general' that accommodates all possible decisions and must benefit from those decisions. We are caught, therefore, between the detectability of the 'most powerful' and the undetectability of the 'general'. The choice awaits further critical questioning.

The 'will to know' comes as a peculiar juxtaposition of modernism and postmodernism. Jackson considers himself to be a (critical) modernist. According to Jackson a postmodernist operates through 'oppositional thinking' because of the inability to rely upon any overall rationale. A juxtaposition of this post-modernist stance is offered in the following citation:

> "... since there is no overall rationale to any of this (a postmodernist position), the only way to counter dominant knowledges and release the suppressed is through "oppositional thinking". Such thinking is for fighters and resistors rather than *those who already know the answer ...*" (p.206, my emphasis)

If we are to accept Jackson's repeated juxtaposition of modernism and postmodernism (there are of course many relationships existing between modernism and postmodernism, see chapter four for some examples) then we are forced to accept that modernism is for '*those who already know the answer*', and that for modernism the only main problem is to know where to find it (for example in the texts of modernist writers such as Jackson). However, the 'those' in this quote are modernists that are uncritical, and of course, this exempts Jackson whose 'will to know' critically proceeds to uncover the absurdity of 'those who already know the answer'.

CONCLUSION

The incidence of 'debates' within the work of the Five Systems Thinkers has shown to be a fruitful exercise. We have furthered our initial understanding of each Systems Thinker into an Architectural understanding. Correlativity has been achieved where the themes relate to the debates. For example, Beer's themes of 'Autonomy' and 'Viability' directly relate to debates in 'Fiction' and 'Will' respectively. The autonomy required when one creates other languages cannot be over-estimated, since the laws (-nomy) of the self (auto) come to life in the (self-) creation of a language (requiring laws in order to be communicable). The viability that correlates with 'will to cohere' and 'will to survive' is also very evident and shows the worth of establishing correlations between authorial themes and subject themes (where the author is either Beer or Checkland or Flood or Flood and Jackson or Jackson, and the subject is Systems Thinking). Viability refers to a "... constraint only in terms of minimal cohesion." (Beer, 1979, p.173). Viability, therefore, is a manifestation of the 'will to cohere', and it is a manifestation of this 'will to cohere' in order to show the constraints that are relevant to the 'will to survive' that any organisation is seen as possessing.

The overall worth of this second movement is not totally relevant at this stage in this thesis. The worth of this second movement at this stage is to evidence correlativity with the previous and prospective movements. We need, therefore, to quickly make progress to the next movement in order to begin to further understand the overall worth of correlativity across the four movements in this chapter.

MOVEMENT THREE: THE USE OF THE ARCHITECTURE IN THE SYSTEMS THINKERS' WORK

INTRODUCTION

The authors now find themselves compared to the architectural process. The question is asked across the spectrum of the five authors: to what extent does each author utilise this architectural process? This utilisation may be explicit or implicit, but it must register as a 'use' by the author. The word 'use' in this context refers to a manner in which the architecture is adopted in line with the general theme of the author of concern. To 'use' is to support a general argument, for example does Checkland 'use' a notion of Cross-Dialectics in order to support his critique of Hard Systems Thinking?

Table 5.3 : Use of Architecture (Dialectical-Forms)

Author Use of ...	Beer	Checkland	Flood	Flood and Jackson	Jackson
Dialectical -Forms	- analysis/ synthesis - life/ death - power/ viability	- Hard/ Soft - developed from	- Found./ Anti-Found. - Comp./ Isolat. - Know-ledge /Interest	- S.U./C.U. - S.P./C.P. - S.C./C.C.	- social int./ systems int. - systemic mod/ critical mod. - alienated labour/ distorted commun. - system/ parti. - syntactic/ semantic - Interp./ Struct. - subj./ obj. - Tech./ Social - Sys.Rat./ Soc.Rat. - Idealists/ Realists - Theory/ Praxis - Prag./ Comp.

Table 5.4 Use of Architecture (Cross-Dialectics to Pluralism)

Author Use of ...	Beer	Checkland	Flood	Flood and Jackson	Jackson
Cross-Dialectics	- VSM - Stereo-typification	- map of systems movement - SSM development - social analysis	- systems thinking - six scenarios	- system of systems methodology	- harmonisation of people and system - harmonisation of obj. And subj.
Cross-Generics	- Lit. And Management - Biology and Management	- softer and other systems thinking - hybrid science	- systems thinking and social theory - GST and suppre-ssive ideo-ologies	- TQM and systems science - philoso-phy and systems science	- soc.sci. And sys. Science - mgt. sci. and soc. science - psy. And sociology - psy. And soc.theory - mod. And postmod. - Eman. sys. Theory and Soft sys. Theory
Pluralism	- to see beyond artific-ial class-ifi-cations	- meta discipl-ine - pluralis-tic pro-cess	- impossi-bility of a singu-lar his-Tory	- different versions - comple-mentar-ism	- different ration. - subj. - imposs. Of universal agreement - allev. Of - halt mul-tiplicity - democracy

The aim of this third tabulation is to show how the process of the architecture (from Dialectical-Forms to Pluralism) can influence the thinking of these five main authors. It is suggested that such an architectural process enables a 'comparitive insight' into the systemic notions that each author advocates. It is this concern and this interest that drives this subsection. In order to carry out such a task we must follow through the process in each example, showing how an understanding of each author can be enhanced with the use of the architecture (as articulated in chapters two and three). To this extent, after an extensive development we are able to witness a small contribution to the general concerns of the Systems movement (taken from an explicit Critical System's perspective, though using a spectrum of Systems Thinking (Beer as predominantly an Organisational Cybernetician; Checkland as predominantly a Soft Systems Thinker; Flood, Flood and Jackson, and Jackson as predominantly Critical Systems Thinkers)). But, of course, in order to witness such a contribution, we must be explicit about the interests of such a movement. The interest of a movement can best be examined with a commensurable analysis of the claims (and counter-claims) of the authors representing that movement. In this case, Systems Thinking. These claims show themselves most markedly in the 'Themes' and 'Favourite words/phrases' (as evidenced in the first movement of this chapter). The claims are then made the substance of each author's intentions and must become synonymous with each author's intentions. This is not to restrict the flexibility (of interpretation) of each author, but the contrary to enable a fluidity of interpretation to be re-enacted through the main debates (as evidenced in the second movement of this chapter) and the Architectural process of Dialectical Forms through to Pluralism (as evidenced in this third movement).

5.3.1 BEER

5.3.1.1 Dialectical-Forms

Beer uses many Dialectical-Forms throughout his work, and his recognition of their worth is recorded in *Platform for Change* (indeed, the word 'Platform' suggests a resolution of competing 'forms' into a 'Plat'itude) on page one hundred and eleven: "Most Management situations can be defined in terms of two antithetic sets of activity". Beer, accordingly, sets out to suggest some 'antithetic sets ', in particular with reference to the problem of the exclusive nature of language (as discussed in the second movement):

> "To think about any of these [restrictions to a reconstruction of public languages] we need the approach that is the antithesis of analysis namely synthesis." (1978,122).

Synthesis will bring together the terms 'Acceptable' and 'Incompetent' allowing the acceptable to be critiqued according to different notions of competency, as while the terms are only analysed they are unable to be related into a meaningful whole.

A second use of Dialectical-Forms exists in the competing forms of 'life' and 'death' (more familiar as negentropy and entropy). In order for Cybernetics to develop as a credible Science it needs to emphasise its interest in life through

negentropy, and it must seek to disarm any proponents of entropy :

> "If we have a universe, which is improbable although it exists, it is because the Second Law of Thermodynamics has two [Dialectical-] forms. One is concerned with the pressure to even out energy ... it betokens death. The other form is about information content, which leads to greater organisation and increasing complexity. That form betokens life." (Beer, 1978, p.29)

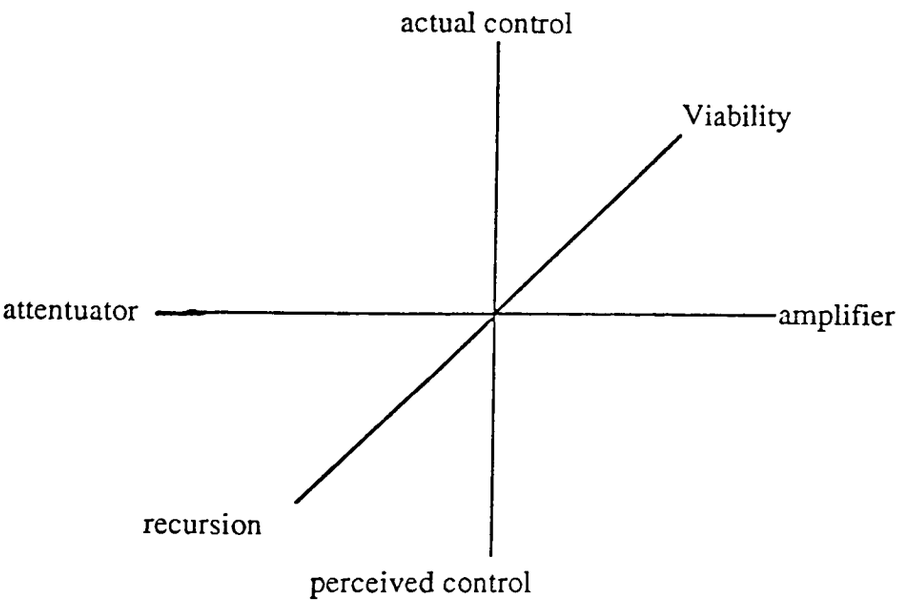
This Dialectical-Form continues in the opposing Cybernetic forces of 'power' and 'viability'. Power is epitomised as destructive self-interest, while viability is shown as constructive survival of the organisation (Beer, 1990, p.12).

5.3.1.2 Cross-Dialectics

Cross-Dialectics are a little more complicated, and therefore require more effort to recognise within the text. There are, however, two Cross-Dialectics that are worthy of mention. They are the Cross-Dialectics of the Viable Systems model (CD of VSM) and the Cross-Dialectics of Stereotypification (CD of S). The former is given in 'Heart of Enterprise', the latter in 'Platform for change'.

The CD of VSM develops from the three basic distinctions of: Management; Operations; and Environment. Each one of these distinctions relates to a Dialectical-Form. They are as follows: Attentuators-Amplifiers (Management, 1979,p.92); Actual control-Perceived control (Operations, 1979,p.80); and Viability-Recursion (Environment, 1979,p.92). The following chart can be drawn to represent this Cross-Dialectic.

Figure 5.3 The CD of VSM



Each successive Dialectical-Form develops in complexity from the Management to the Environment where the concerns of Management are with the choice and balance of attentuators and amplifiers, the Operations must seek to distinguish between actual and perceived control (what is operated upon must be actually controlled), and the Environment dictates levels of Viability and how the logic of recursion will operate. This, then, is an example of how the Cross-Dialectics can operate within the text of Beer.

The CD of S concentrates upon three stereotypes that dictate how we are and how we live in a general sense, they are: Homo Faber; Totum Quantum; and Bifurcation. They relate in turn to Man; Culture; and Organisation. Homo Faber is man the maker, where work is ethical and play is not. Totum Quantum is the whole that can only be studied when broken down into its parts. Bifurcation is the categorisation that results in the organisational tree. As in the CD of VSM, the CD of S increases in complexity from man through to organisation. The Dialectical-Forms are all given in *Platform for change* and relate to Beer's attempt to question the stereotypes at these three distinct levels.

5.3.1.3 Cross-Generics

Beer uses Cross-Generics very effectively in two clear ways. They are the Cross-Generics of: Literature and Management; and Biology and Management. The first Cross-Generic refers to: firstly the use of narrative in *Platform for change* , and secondly the 'Later in the Bar' conversations in *Heart* of

Enterprise. As explained in the second stage the narratives represent Beer's attempt to explain difficult and pressing issues in an innovative manner. In order to show the importance of the issues being discussed Beer considered it vital to add 'personal' narratives that complemented the more 'technical' narratives. These personal narratives became more 'poetical' than previous texts because they 'grouped' common words together rather than followed the stereotypical sentential structure. The 'Later in the Bar' conversations come at the end of every chapter in *Heart...*, they are used to reinforce the ideas that are discussed more formally in the main text. Here is an example of a claimed success of that intention:

> "It was a triumph for cybernetic analysis, because now my colleagues really did understand. It was not, however, a triumph for psychology." (p.257).

We can see here that the less formal, literary, conversations are subservient to the cause of understanding cybernetics, so much so that even psychology cannot stand in its way.

The Cross-Generics of Biology and Management is essential for Beer. All of the main ideas for Beer's Cybernetics are derived from Biological (to be more precise Anatomical) notions. The main idea of Viability is derived from organic survival. Let a quote show this:

> "The ultimate pathology of the viable system concerns the failure of its cohesiveness, and its inter-recursive algedonics. This turns out to be an aberration of its autopoietic function." (1979,p.408)

The words pathology, viability, and autopoietic all concern organisms. And this 'organic metaphor' is well documented in current Systems Thinking (see for example Flood and Jackson, 1991).

5.3.1.4 Pluralism

For Beer Pluralism means one main thing: the ability to see beyond 'artificial classifications'. Management is truly an interdisciplinary subject:

> "From economics to psychology, from anthropology to mathematical statistics, every science has an 'applied' side that bears on the management process." (Beer, 1990, p.x).

Management, therefore, must be pluralistic in its outlook and attempt to relate incongruous subjects together within the general interest of managing complexity. It is not important that there are so many different subjects, what is important is the attempt to create viability from the plurality of different subjects:

"There is no need therefore to have different classifications, and different organisational theories, for all these systems - so LONG as they are viable systems." (1990, p.101).

Beer, in his work, has attempted to develop the notion of viability from an exclusive economic idea of profitability to notions of legality, future prospects, adaptability and so on. We can, therefore legitimately say that Beer has developed a pluralism of viability.

5.3.2 CHECKLAND

Checkland employs the architectural process at every possible stage. There is, however, a highlighted interest in the Dialectical-Forms. The main reason for this interest lies in Checkland's overriding concern of showing the limitations of Hard System's Thinking (as the first Dialectical-Form) against the strengths of Soft Systems Thinking (as the second Dialectical-Form). This exercise, however, has implications for the entire Architecture. The following sub-section will show how Checkland uses the Architectural process from the Dialectical-Forms to Pluralism.

5.3.2.1 Dialectical-Forms

Checkland's Dialectical-Forms (henceforth referred to as 'DF') reinforce the continual separation of Systems Thinking into Hard and Soft dimensions. They also allow themselves to develop separate points that build on the Soft/Hard distinction. There are, therefore, two categories of DF: emphasis upon the Hard/Soft distinction; and development from this distinction (along the Soft distinction). In the first category we find five examples worthy of explanation: natural science - social science (1988, p.67); purposeful wholes - natural wholes (1990, p.24); positivism - phenomenology (1988, p.266 - 277); innate - experience (1990, p.20); mode 1 - mode 2 (1990, p.282-283). The Hard/Soft distinction begins with "... the fact is that the problems of a social science patterned on natural science have hardly been solved." (1988, p.67). This is Checkland's appliance of the 'hard criteria' of solution upon the softer social sciences, representing the failure of the natural sciences to dominate all of science. This failure can better be represented as a distinction in the following quote:

> "The difference [between human activity systems and natural systems] lies in the fact that such systems could be very different from how they are, whereas natural systems, without human intervention, could not. And the origin of this difference is the special characteristics which distinguish the human being from other natural systems." (1988, p.115)

This quote does not serve to clarify the relationship between Hard (natural) and Soft (human) systems, unless clarification merely requires 'very different from how they are' in order to recognise difference. If human systems did not exist, then natural systems could not be 'different from how they are'. This 'different' refers to the perception/reality problematic, where perception is the 'different' from the reality 'how they are'. What Checkland is saying, therefore, is that human systems perceive, while natural systems do not. And the DF in this shape operates as 'perception' across the natural and human systems.

This operation as 'perception' continues to be prominent in the second DF: purposeful wholes and natural wholes:

> "Why not try to develop the idea of a purposeful whole to put alongside the idea of natural wholes ... ? That was the thought which launched SSM." (1990,p.24).

Purposeful wholes (holons) are connected sets of activity that attempt to improve problematical situations. Such wholes are socially determined and represent the emergent property of the particular human activity system. Natural wholes are the interest of hard systems thinkers, they exist in the real world rather than being created by the systems thinker. The 'natural' is distinct from the 'human' in this Checklandian sense. There exists a DF, however, around the conception of 'whole' , where the 'whole' is the attributation of purpose, within the whole there is distinct purpose, outside of the whole it is less distinct. The operation of 'perception', therefore, is shown to be prominent in this second DF, as perception demarcates the 'whole', be the whole natural or purposeful.

The relationship between the natural and the human is the interest of the third DF. First of all, however, it is necessary to show how the natural and the human can be 'housed' in the prefix of the same word: 'purpos-'. The 'natural' whole is 'purpos-ive', while the 'human' whole is 'purpos-eful'. When a whole is purposive it neutrally serves a purpose, the example that Checkland gives is a road. The road, itself, is neutral, it has no opinion as to whether it wishes to serve the purpose or not. When a whole is purposeful it involves conscious human action: "Willed; thus activity that is purposeful becomes action" (1988, p.316). For example, with reference to the road, a purposeful action may be to use the road as a motorist, as a geographer, as a geologist, as an analyst of human behaviour, or as a broad understanding of the operations of a legal system. Each one of these approaches involves a different weltanschauung, and it is this weltanschauung that becomes the reference for purposeful action. An understanding of the complexities of different weltanschauungen is the domain of Phenomenology, and an understanding of the complexities of purposive systems is the domain of Positivism. This, therefore, becomes the third DF: Positivism - Phenomenology.

> "Is it the study of objective social facts which transcend the individuals who make up a society; or is it the study of the individual subjective understandings which men acquire of their social situations ?... The literature itself may be seen as a debate conducted from these two stances; at the level of philosophy they are the stances of positivism and phenomenology." (1988, p.267)

Positivism posits objective facts; phenomenology posits subjective understanding. At the philosophical level they are in dialectical opposition as a DF. Checkland refers to positivism through the works of Popper and Durkheim; and to phenomenology through the works of Winch, Weber, and Husserl. Where Popper sees the natural and social sciences as similar and Durkheim seeks to objectify social phenomena by searching for efficient producing causes and fulfilling functions; Winch sees the natural and social sciences as distinct, Weber wishes to access social meanings through 'verstehen' (placing oneself in the role of the individual), and Husserl sees basic reality as existing not in the world itself but in our thoughts of that world. From this extremely brief portrayal of these five major thinkers, we can see the existence of sub-DFs operating within the main DF of positivism and phenomenology. We see Popper dialectically opposed to Winch and Durkheim contradicting Weber. Both of these sub-DFs become more potent when one realises that Popper and Winch are contemporaneous and that Durkheim and Weber also lived in a remarkably similar period (1864-1920 for Weber, 1858-1917 for Durkheim). This sub-plot adds importance to the main DF, and deservedly features in both Checklandian Cross-Dialectics and Cross-Generics.

The fourth DF perpetuates the positivism-phenomenology DF in its opposition of innateness to experience. Innateness as inherent and immutable, and experience as exoteric and mutable. These two opposites work upon each other, such that the innate has elements of 'innateness' and elements of 'experience'. The innate "... may indeed be part of the genetic inheritance of mankind, truly innate; or they may be built up as a result of our experience of the world. " (1990, p.20). We are aware that the innate is very much different from that which we

experience, however, the DF operates to show the complexities of this relationship. To show how the innate continually develops from that which is experienced, and that which is experienced exoterically informs the innate. This relationship comes to life under the fourth DF.

In developing SSM, Checkland became aware that the 'core' or 'innate' constitutive rules were beginning to change. Beginning to be more like their oppositional strategic rules (see page 253 of *Systems Thinking, Systems Practice* for Naughton's rules), in that they could only afford to be guidelines for action, in the sense that if action requires an explicit political analysis in some instances while in other instances it does not, then the political analysis becomes nothing more than a guideline (though of course, this guideline forces itself to be a constitutive rule when the overriding scenario is explicitly political; in such a case the constitutive 'learns' from the strategic, the 'immutable' mutates in response to the 'mutable'). A similar situation resides within SSM as a whole, where the immutable translates as 'Mode 1' and the mutable translates as 'Mode 2'. Mode 1 exists as "... a formal stage-by-stage application of the methodology..." (1990, p.281), and Mode 2 is the "...internal mental use of it as a thinking mode..." (p.281). The first mode strictly obeys the constitutive rules (SSM as immutable), the second mode questions, or enters into, the constitutive rules (SSM as mutable). We have therefore shown the possibility for the fifth DF that concentrates upon the Hard/Soft distinction. The Mode 1 - Mode 2 DF. It can be seen as a concentration upon this distinction because the innate qualities of SSM represent the 'Hard' dimension within SSM, and the experienced qualities of SSM represent the 'Soft' dimension. Mode 1 is phrased as 'intervention', as the SSM user seeks to investigate from outside, but not becoming 'too involved' with the

problematic. Mode 2 is phrased as 'interaction', as the SSM user seeks to experience the problematic. It is fairly clear that these two modes show an ability of Checkland to search out the Hard and Soft dimensions within the Soft domain of SSM. It is the previous four DFs that have enabled such a development to take place. An understanding of these previous DFs allows for a considered improvement of SSM, allowing the Softer dimensions to be understood even further :

> "The ideal type Mode 2, however, takes SSM itself as its framework of ideas, takes as its methodology conscious reflection upon interactions with the flux of events and ideas, and takes as its focus of enquiry the process of learning one's way to purposeful improvement of problem situations." (1990, p.283)

In understanding this quote we must be able to cite the previous DFs. For example, the purposive-purposeful DF operates as 'purposeful improvement; and the innate-experience DF operates as 'flux of events...process of learning'. In understanding these DFs we enable an improved understanding of the workings of SSM, and also show how the Architecture is employed within SSM.

This concentration upon the Hard/Soft distinction is not the only evidence of Checkland's employment of DFs. There also exist DFs that develop from this distinction. There are two examples: competing weltanschauung; and anti-DF. The first example uses humorous situations to show how patterns of thought develop, and how these patterns are employed in SSM:

> "...when we find ourselves in a [humorous] situation in which a W [weltanschauung] is suddenly confronted by a different W in sharp conflict with it." (1988, p.217).

The DF exist as competing Ws, where one Form is shown as the established form, until it is suddenly disestablished by the other Form. This operation exists as a humorous situation (see Checkland's 'Margins' in the second movement) and is as continual as is the possibility of established Forms. The DF will always, temporarily favour one Form over the other, mainly for exoteric reasons. In the same way one person will favour, be it temporarily, one weltanschauung over another weltanschauung, mainly for reasons of comprehension and sanity.

The second example, anti-DF, exists as a negation of the DFs themselves, though DFs are unable to be destroyed in this manner because this would merely perpetuate the DF, in effect strengthen the DF. However, it is worth briefly considering Checkland's view on DFs.

> "Unfortunately for early management science, in the real life of managers it is the details which make a particular solution unique ... rather than the fact that the form of the situation may be one of a general class." (1990, p.14)

The context of this quote operates as an attempt to show the obvious limitations of an over dependence upon structuralism with reference to previous problem solving (or relieving) techniques. In showing this limitation Checkland cannot help but fall for criticism of his own approach. Suggesting that the

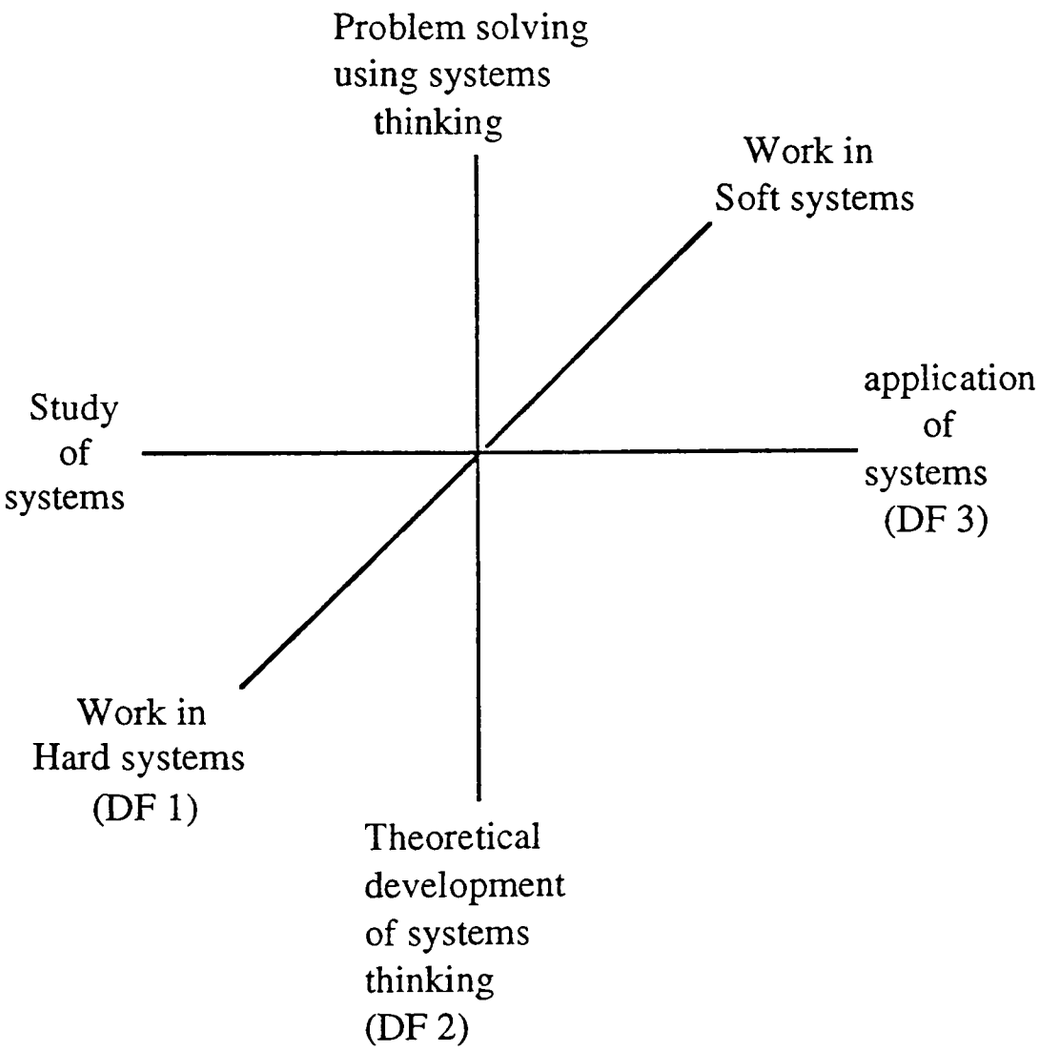
limitation exists in the formalisation procedure, be that formalisation a dialectically based one or not, is no basis for criticism. Criticism requires form. SSM requires form. Unique situations are meaningless without form. To criticise form is to criticise criticism (as a form). To criticise form is to criticise SSM (as a form). To criticise form is to criticise the unique (as a form). We are unable to escape 'form', to enter into the 'unique' as distinct from form. What we must be aware of, however, is the over-reliance upon 'tried-and-tested' forms as algorithms for future problem-solving. As this quote relies upon the acceptance of such a form as criticism, we must be aware of such Checklandian quotes.

5.3.2.2 Cross-Dialectics

Cross-Dialectics (CDs) develop from DFs. CDs are constructed by taking three DFs with common concerns and with gradual increases in complexity: from the relatively narrow to the relatively broad. The emphasis is upon three, because space is constructed with a minimum of three dimensions (horizontal, vertical, and depth), and the complexity gradually increases because an understanding of a previous DF directly enriches the understanding of the succeeding DFs. There exist at least three examples of CDs in Checkland's work. Three CDs will, therefore, be highlighted, drawn and explained: the 'map' of the systems movement (1988, p.95-6); SSM development (1988, p.165); and 'social analysis' within SSM (1990, p.49).

The map of the systems movement is shown on page 95 of *Systems thinking, systems practice*. It can be seen that this map works from the very broad ('the systems movement') to the very specific ('work in 'soft' systems thinking'). It therefore contains the potential for a CD. There also exist three distinct dimensions (p.94) from the study/application; to the purely theoretical/problem solving; to the hard/soft. These three dimensions make up the map CD, thus:

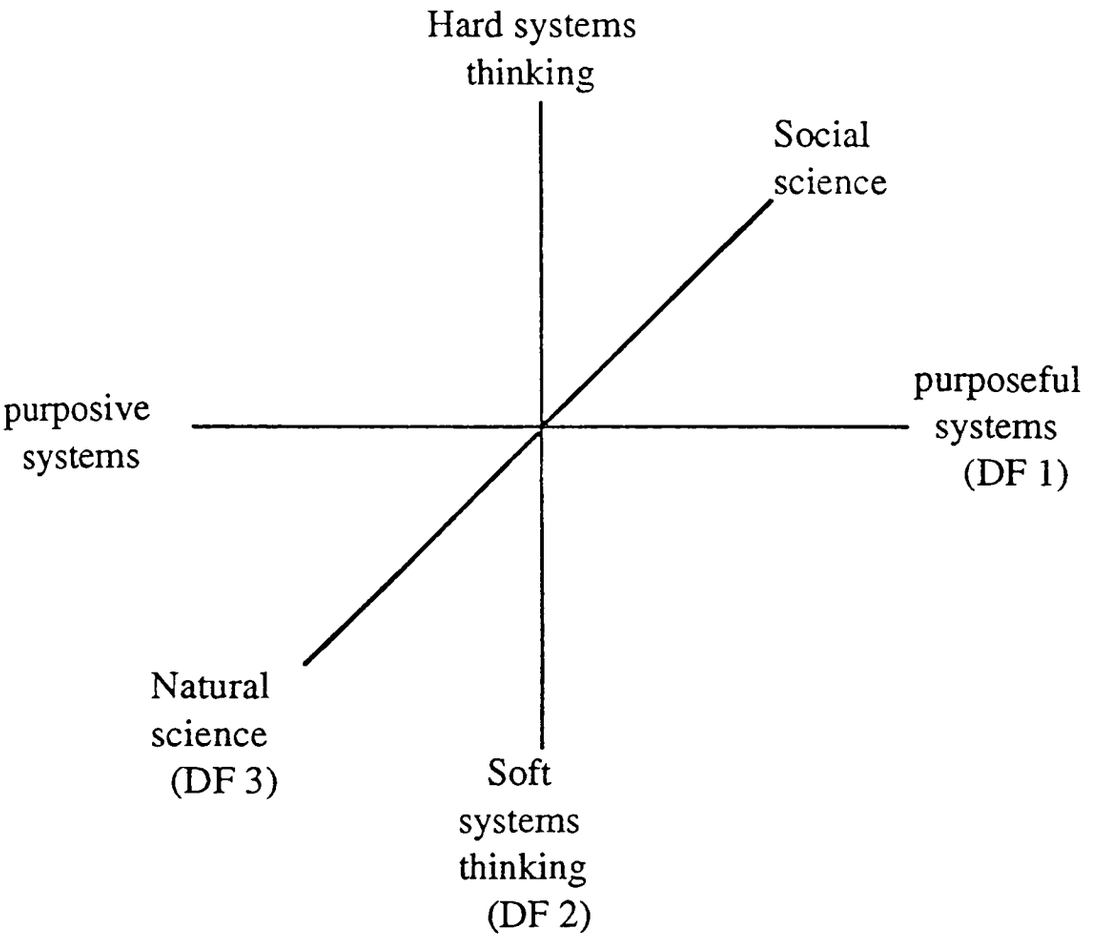
Figure 5.4 A Cross-Dialectic of the systems movement



The CD above develops from the relatively narrow to the relatively broad. From the Work in Hard Systems - Work in Soft Systems DF(1); to the Problem solving - Theoretical development DF(2); to the Study - application DF(3). The first DF contributes to the second DF which contributes to the third DF. Work in Hard and Soft Systems contributes to problem solving and theoretical development which contributes to the general study and application of Systems. A thorough understanding of the first DF enriches any understanding of the second and third DFs. This is the mechanism of the CD.

The second CD is titled 'SSM development'. The mechanism is similar to the previous CD, working from the specific to the general. In this case, the specific is 'the nature or behaviour of the system', the intermediary is 'the nature or behaviour of systems thinking', and the general is 'the nature or behaviour of science'. These three broaden out in application from the exacting study of the 'system', to a study of 'systems thinking', to a study of 'science'. Each successive DF assumes the complexity of the preceding DF. It is plausible to suggest that this second CD can be employed as a 'means to understand systems thinking from the studies undertaken, to their arrangement in the discipline, to their arrangement in the scientific discipline'. Applications of this CD begin with this substantial grounding in the systems way of thinking and allow for concise and flexible understanding of possible developments, as any developments will be accommodated within the competing dialectics that are the constructive elements of the CD. In order to develop and comprehend this last point, it is necessary to illustrate this second dialectic :

Figure 5.5 CD of SSM development



The three crossing-dialectics are: purposive systems - purposeful systems (DF 1); Hard systems thinking - Soft systems thinking (DF 2); and Natural science - Social science (DF 3). Using the understanding that we achieved in the previous sub-chapter on Checkland's DFs, we are able to confirm a clear relationship running from the DFs, within the DFs and across the DFs. Running from the DFs we can attest to the gradual increase in complexity. Running within the DFs we

can attest to the inherent complexity of the constructed theme. And running across we can attest to a gradual increase in complexity if we take one of the forms, temporally abandoning the DF in order to reveal the isolated form, and relate it to the succeeding isolated DF. Like this :

purposive systems (-) purposeful systems

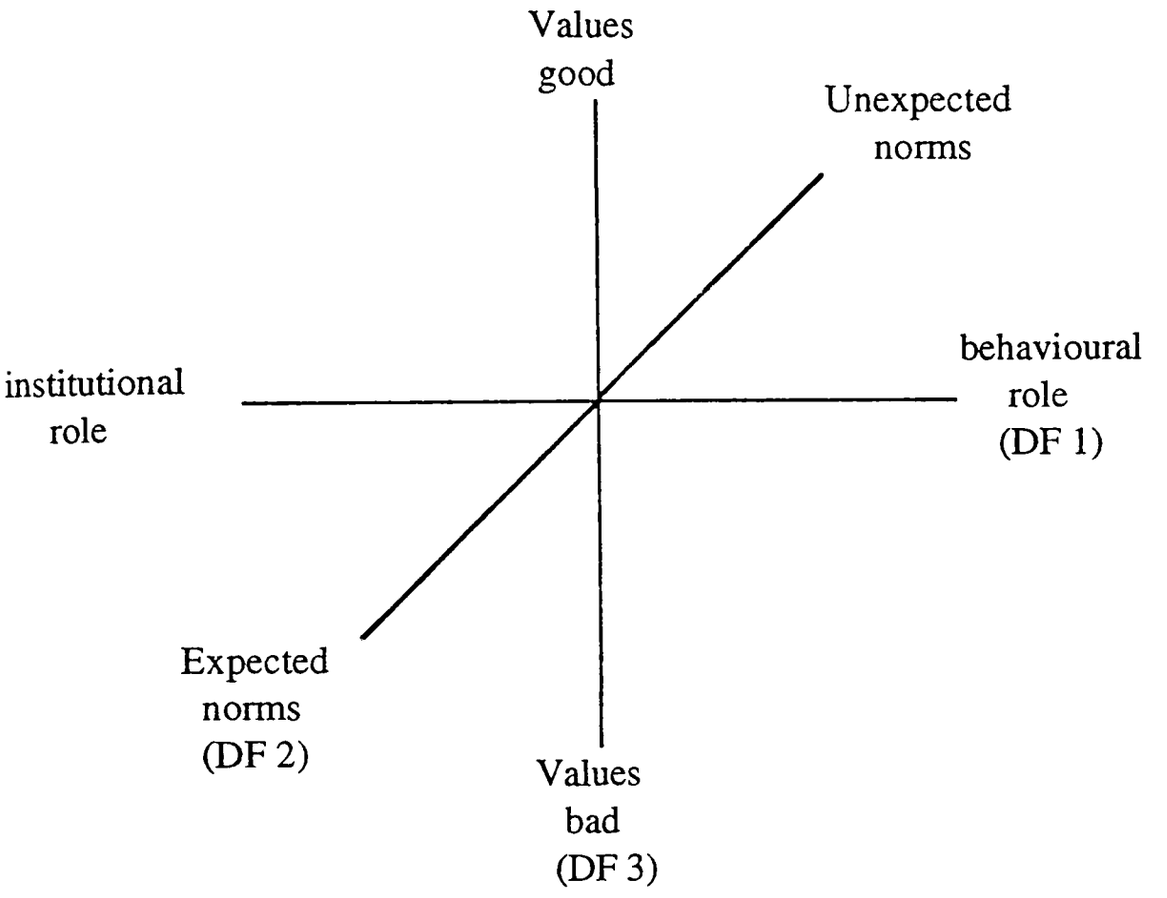
Hard systems thinking (-) Soft systems thinking

Natural science (-) Social science

Looking at the left hand side we can confirm a commonality of interest ranging from the purposive systems to Hard systems thinking to Natural science. Looking at the right hand side we can witness a grouping of interest from the purposeful systems to Soft systems thinking to Social science. The dialectic between the forms is temporarily placed in parenthesis (-), in order to concentrate upon the left and right hand side relationships. It is useful to consider the CD operating in this disjunctive capacity, because it aids comprehension of the issues that make up the construction. It is also useful to consider how, in isolation, a study of just one side of the DF will strengthen the whole side in which its commonality lies. In this sense, therefore, the CD operates to search for any obvious biases.

The third CD is named 'social analysis within SSM'. It constitutes one of the most recent developments in Checkland's work. (In fact, the first CD is the earliest development and the second CD the intermediary development). Known as 'analysis two' in Checkland's work, the social analysis seeks to model a social situation. "The model in question assumes a 'social system' to be a continually changing interaction between three elements: roles, norms and values." (1990, p.49). These three elements become the basis for the construction of the CD. They develop from the specific to the general. The specific in this case are the roles, and the most general are the values. The relationships exist as follows. The "... role is characterised by ... norms." (p.49). These norms are formed according to actual performance, which can only be understood when enacted within a certain role. The combination of the role with the norm provides the values: "Finally, actual performance in a role will be judged according to ... values." (p.49). The three elements gradually build from the role to the norm to the value. This is explicitly recognised by Checkland, but diagrammatically this complexity of relationships is ignored. The potential for CD is verbally endorsed, but the diagrammatical endorsement is lacking. Here is an attempt to construct such a CD (all understandings of the terms used, their dialectical forms, and their inter-relationships can be explicitly found in Checkland and Scholes, 1990, p.49):

Figure 5.6 CD of social analysis



The three competing DFs are : institutional role - behavioural role (DF 1); Expected norms - Unexpected norms (DF 2); and Values good - Values bad (DF 3). These constructions are taken directly from Checkland's text and together show the manner in which Checkland wishes to pursue a social analysis. The first DF:

"Such a position may be institutionally defined ('classroom teacher', 'team captain', 'shop steward') or may be defined behaviourally ('licensed jester', 'nutter', 'solid citizen')." (1990, p.49).

The institutional and behavioural roles are the dialectical limits, for Checkland no roles of any importance lie outside these limits. These roles are also, to a large extent, oppositions. To be classed as acting in a behavioural role is to be acting away from the institutional role. The second DF: "a role is characterised by expected behaviours in it, or norms." (p.49). It can be added that norms possess a dialectical opposite in 'unexpected behaviour', because without unexpected behaviour there would be no change in the expected behaviour. The third DF: "... values. These are beliefs about what is humanly 'good' or 'bad' performance by role holders." (p.49). The dialectical limits are bounded by 'good' and 'bad' values. These values exist because of norms and roles. Depending upon the role played, a good value will accord with expected behaviour. For example, if an institutional role is adopted, expected behaviour leads to good values; however, if a behavioural role is adopted, expected behaviour leads to bad behaviour (if the behavioural role is taken as being dialectically opposed to the institutional role, ie as a questioning of the institutional role), because expected behaviour maintains the institutional values. This can be put forward as an exemplification of the way in which CD can open up and clarify three inter-related DFs. The composite CD then becomes one generic that competes across another generic: Cross-Generics.

5.3.2.3 Cross-Generics

Checkland's employment of the Architecture at the Cross-Generic (CG) stage relies upon an acceptance of the relevance of the 'softer' social sciences for systems thinking. If this acceptance is not forthcoming (as it most certainly was not in the 1970s, and still remains an enigma for many systems thinkers) then Checkland supplies a hierarchy of complexity (cf. Comte). Therefore, there are two instances of Cross-Generics: the introduction of new (softer) disciplines (into systems thinking); and the complexity of those disciplines in relation to the established disciplines.

The first instance begins by pressing the point that

> "... the results of systems thinking in, say, management science need to be accessible to interested professionals in disciplines such as sociology or political science." (1988, p.99).

And continues by realising that

> "In management science itself phenomenology and hermeneutics have begun to creep in where once an automatic functionalism held sway." (1990, p.308).

This first instance probes for an initial CG between Management science and Sociology/Political science, and a secondary CG between Management science and Hermeneutics/Phenomenology. The initial CG comes from Management science to other disciplines, and the secondary CG comes from other disciplines to Management science. In both cases there are Cross-Generics, but the effect is very different in either case. The initial case is suggesting that Management science needs to be understood by other disciplines, ie. that it is a credible discipline, a practically orientated discipline that needs to be interpreted in different ways. The second case is suggesting that Management science will continue to be impoverished if it does not take the effort to interpret the theoretical developments taking place in other disciplines, ie. that Management science is loosing its credibility, and its practicality is being strictly translated as functionalism. What we can gather from these two exchanges is that Management science needs to exercise Cross-Generics in order to maintain a practically-orientated and theoretically-sound discipline. Management science needs to interact with other disciplines in order to remain a viable discipline itself, and that this interaction is to and from Management science.

The second instance looks at the hierarchy of complexity as an interrelationship between relevant disciplines. Using Boulding's (1956) hierarchy of real-world complexity Checkland is provided with

> "... a means of appreciating the history of the hybrid discipline management science." (1988, p.104).

Boulding creates, intuitively, nine levels: Structures, frameworks; Clock-works; Control mechanisms; Open systems; Lower organisms; Animals; Man; Socio-cultural systems; and Transcendental systems. These nine levels possess characteristics; for example, Open systems are Structurally self-maintaining, and Animals show an ability to learn. Examples are provided to clarify the relationship between the levels and their characteristics, examples of Open systems are Flames and biological cells, examples of Animals are Birds and beasts. Finally, all of this information is housed in relevant disciplines, Open systems are studied in Information theory, and Animals are studied in Zoology. Checkland's employment of Boulding's hierarchy is used to show the worth of considering management science as a hybrid science, in a recognition of the worth of Cross-Generics, and also to show that Cross-Generics enables a serious consideration of complexity. The major problem that Checkland raises in reference to Boulding's hierarchy is the revelation "... that we have no adequate account of systemic complexity." (p.106) By this Checkland means that we "... have no definition of the scale of 'system complexity'... we still cannot even argue intelligently about the relative sizes of the gaps between [the nine] levels." (p.106). The reason why such a scale is important to Checkland is because of the 'meta-discipline' status that Checkland has accorded systems thinking. It must be the task of systems thinking to 'know about these gaps'. This, however, cannot be seen to be the interest of Cross-Generics, because Cross-Generics exists only to organise communication between different disciplines, and Boulding's hierarchy can be considered as working within the interests of Cross-Generics. To know about the gaps between the levels is seen as a concern for the next stage in the Architecture: Pluralism.

5.3.2.4 Pluralism

Checklandian pluralism can be illustrated in two ways: systems thinking as meta-discipline; and systems thinking as pluralistic process. Systems Thinking as meta-discipline has been hinted at in the previous sub-section, and developing on from the Cross-Generics we can consider the pluralistic orientation of systems thinking :

> "... a systems orientation is recognizable in the work of some practitioners in many different disciplines, including biology, geography, economics .... thus confirming the status of systems as a meta-discipline." (1988, p.7)

This recognition in other disciplines is, perhaps, nothing more than the operation of CG, as the organisation of communication between disciplines. If this is the case, then other disciplines would be sufficiently implicated in the label of 'meta-discipline' thus making any serious attempt to employ the phrase nothing more than evidence of an imperialistic urge. It is far better, therefore, to consider another Checklandian notion of 'systems thinking as pluralism' highlighted in this quote: "What distinguishes systems is that it is a subject which can talk about other subjects." (1988, p.5). This maintains the meta-discipline status, though in a different light. In this light systems thinking emphasises communication over control (the previous Checklandian pluralism emphasises control over communication). It must be noted here that both these terms are important in Checkland's definition of 'System' (see the first move-

ment) but that both provide different implications for the status of systems thinking: is a meta-discipline there to communicate with other disciplines (and thereby encouraging communication between the disciplines) or to control other disciplines (it is true that a certain level of control is required in order to communicate)? The response to this question will effect the status of systems thinking. If, for example, the state of being arbitrary is seen as the enemy of control, then the status of systems thinking will accordingly be affected by the following quote : "The value and limitations of the concept [system] can be examined in the arbitrary divisions of human knowledge... " (1988, p.99). If these divisions are arbitrary, then systems science is looked upon to control in order to organise knowledge around the concept of system. However, if to accuse a whole industry of knowledge as being arbitrary is seen as an arbitrary statement itself (a statement in need of organised communication with other statements from other disciplines, arbitrary as the isolated statement (or more importantly how is it possible to recognise the arbitrary or to make distinctions between what is and what is not arbitrary: and is a statement not arbitrary if it does not relate to the existent system of knowledge (even if that knowledge is seen as arbitrary))), then we look upon systems thinking as a vehicle with which to communicate with other disciplines; where communication at once recognises arbitrary statements and seeks to communicate their value to less arbitrary statements in less arbitrary disciplines. Systems thinking becomes the means to communicate, not the means to control.

A more promising understanding of pluralism is given in Checkland's second illustration: 'systems thinking as pluralistic process'. This illustration works

through Churchman's dialectics and shows how DFs relate to CDs and CGs. It can be seen as an organising mechanism, as pluralistic process. The pluralistic process is evidenced in this citation:

> "... the importance of the concept [weltanschauung] has been most notably argued in Churchman's examination of different classes of information systems in which data are examined via different Ws [weltanschauungen] whose antithesis provides the basic data for a higher level observer with a higher level, expanded, W, one which enables a new synthesis to emerge." (1988, p.221)

This process can be related to the CD and the DFs. The DFs relate to the 'different Ws', while the CD relates to the provision for higher level observation. The DFs operate within the CDs according to the previous sub-sections, and the CDs offer an improved understanding of the DFs. The CDs then become the DFs for the CGs (the higher level observation allows for this 'assumed translation'), and the process repeats itself (as the CG now becomes the higher level observation to the lower level CD). The process then re-commences as DFs taking over where CGs left off. And we see an endless repetition, guided by the interests of plurality. Because of this endless repetition, and because of the inability to offer a 'controlled meta-discipline', no synthesis can be offered, but the potential for a synthesis cannot be totally restricted (though we must never rely upon synthesis as an inevitable final stage, the contrary must be considered: synthesis as an inability to see beyond the initial stage, as an inability to recognise endless repetition). This potential, along with the endless repetition is the plu-

ralistic process at work. A process that "... is very relevant to the [Soft systems] methodology as a whole..." (1988,p.221). Therefore, we can confirm some understanding of pluralism within the work of Checkland, and also show how important it is that this understanding must be further clarified.

5.3.3 FLOOD

Flood employs the Architecture of CST at many different levels and shows a precise understanding of the benefits and limitations at each particular level. We will travel through the Architecture in the manner that Flood applies it in order to show another dimension to its employment. Beginning with Dialectical-Forms, moving on to Cross-Dialectics, on to Cross-Generics, and ending with another formulation of Pluralism.

5.3.3.1 Dialectical-Forms

There exist three Dialectical-Forms (DFs) worthy of comment in Flood's work. They are: Foundationalism - Anti-Foundationalism (1990a, p.16); Complementarism - Isolationalism (p.27); and Knowledge - Interest (p.41). Each DF will now be tackled separately.

The first DF concerns 'the main contemporary polemical debate' between Foundationalism and Anti-Foundationalism. Foundationalism corresponds to the writings of Kant, while Anti-Foundationalism corresponds to the writings of Hume. Foundationalism searches for *apriori* truths which can be depended upon in the transcendental subject; the individual thinking subject attempting to ground knowledge in pre-existing objects of knowledge. Anti-Foundationalism searches for shared truths which can only be depended upon in their inter-subjective histories; the individual is only able to think because other individuals wish to create a community of thinking. To this extent Anti-Foundationalism refutes *apriori* truths in favour of *historically contingent* truths. This first DF is extremely complex as it attempts to cover all relevant contemporary debates in social theory. The interest here, however, is to show how Flood uses the DFs to represent this debate and consequently to resolve the DF with the 'Scholars of Union' (p.21-22): Habermas and Foucault. Any DF must operate within an area that allows for oppositional thought to take place, for difference of opinion to thrive and for commonalities to be questioned and developed. This is the manner in which Flood begins to use this first DF. However, the synthetic attempt requires some further probing (given in the succeeding paragraphs).

The second DF operates as a development of the first DF in that it attempts to resolve the incommensurability of Foundationalism and Anti-Foundationalism. It tries to do this, however, in the spirit of a DF, that is to say that opposition is permitted and challenged. The second DF concerns the thesis of Complementarism and its anti-thesis of Isolationism. The debate now shifts from

the broad arena of social theory to the more specific arena of systems theory, and Complementarism and Isolationism are accordingly given this arena in which to interact:

> "The discourse of soft systems thinking has effectively led to the routing of hard systems thinking. Thankfully, these outdated *isolationalist* and adversarial debates now face and need to be overcome by a higher-level *complementarist* argument." (p.27, my emphasis)

It is clear that the second DF has taken on a different form from the Hard systems-Soft systems DF (see Checkland's DFs for an analysis of this particular DF) in an attempt to question the rationality of adversarial techniques and to be aware of the dangers of isolationism. These dangers and these means to question such techniques are represented by a complementarist approach. Complementarism therefore stands in opposition to isolationism in that it wishes to overcome its limitations. Isolationism fights complementarism in the interests of protectionism and conservation. Between these two Forms Flood develops some interesting ways in which to pursue complementarism and to be aware of the attractions of isolationism.

The third DF furthers the argument of complementarity in its positioning of Knowledge and Interest as dialectical opponents. Taken from the fourth and fifth theses of Habermas's (1971) five theses on the relationship between knowledge and interest, knowledge and interest are presented as a DF. These five theses present interests as knowledge-constitutive, that is to say that each

interest (technical, practical, and emancipatory) secures itself in a particular knowledge (concerning work, language, and power respectively). The fifth thesis states that:

> "Unity of knowledge and interest proves itself in a dialectic that takes the historical traces of suppressed dialogue and reconstructs what has been suppressed." (Habermas, 1971, p.315)

This reconstruction is only possible if the fourth thesis is obeyed:

> "In the power of self-reflection, knowledge and interest are one." (p.314)

The DF of knowledge and interest, for Habermas, and therefore for Flood in his interest for complementarity, seeks resolution in the power of self-reflection. Self-reflection requires two *apriori* factors (autonomy and responsibility). These *apriori* factors manifest themselves in the emancipatory interest, because it is the emancipatory interest that promotes self-reflection. Self-reflection, then, becomes an ability to unify discontinuous discourses, an ability to enact complementarism. We can now see that the third DF promotes the resolution (synthesis) of the second DF in favour of complementarity. Armed with this synthesis the third DF seeks a further synthesis in its unity of knowledge and interest. This unity is in the interest of rational consensus which promotes the emancipatory interest. We can witness, therefore, that the synthesis of the second DF is stifled by the possibility of synthesis in the third DF. To promote

one interest (namely the emancipatory interest) over another interest, in the interests of unity confuses consensus for complementarity. Consensus acts as an artificial completion of the practical interest. Complementarity seeks to marry the interests in a response to the artificiality of consensus. In this manner, the second DF (in its guise of complementarity) acts to defend the concerns of the third DF (by maintaining a self-reflection that is wary of false consensus).

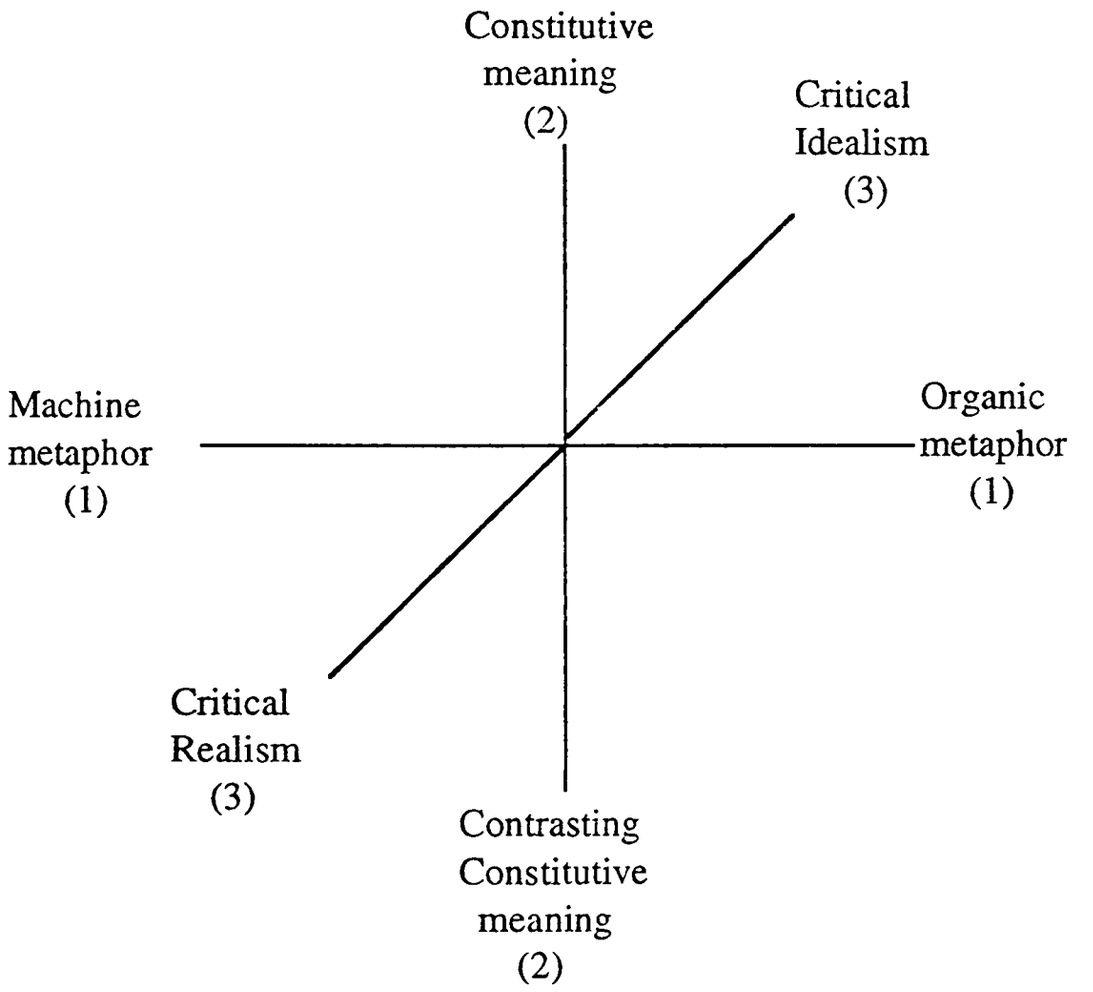
5.3.3.2 Cross-Dialectics

The manner in which the three previous DFs operate to inform each other helps the reader to consider how the Cross-Dialectics (CDs) operate across DFs. (For a precise understanding of this operation please refer to chapter two). Having introduced the DFs that Flood uses in his texts we are now in a position to introduce the CDs that Flood employs. There are two CDs of interest to us in *LST*, of varying complexity, and they are: the CD of systems thinking; and the CD of the six scenarios. The first CD maintains the generally accepted form of CDs, but the second CD, unable to work within such an accepted form, develops the CD from the centre outwards (further explanations follow).

Beginning with the first CD: the CD of systems thinking. In agreement with the general form of the CD there are three DFs working across each other in three different spatial dimensions. These three DFs are: Machine metaphor-Organic metaphor (p.76-77)(first dimension); Constitutive meaning-

Contrasting constitutive meaning (p.170-171)(second dimension); and Critical realism-Critical idealism (p.178-181)(third dimension). These three dimensions are represented below in the customary manner:

Figure 5.7 A Cross-Dialectic of systems thinking



The three dimensions correspond to the three interests (see the third DF) and the three rationalities current in systems thinking. The first dimension corresponding to Hard systems thinking; the second to Soft systems thinking; and the third to Critical systems thinking.

The first dimension of Machine and Organic metaphors offers an interesting investigation into 'closed' (machine) and 'open' (organic) systems, where the relationships between internal control and boundary management are of the utmost importance. This can be classed as Traditional Hard systems thinking, in that its main concern is with efficiency (machine) and entropy (organic).

The second dimension of constitutive and contrasting constitutive meanings is taken from Fay's (1975)(as quoted in Flood (p.170-171)) 'three layers of interpretive analysis'. The third layer is constitutive meaning (the first being conventional and intentional actions, the second being social practice):

> "This is the least accessible layer to the actors, for as a social practice lies behind an observation, a *constitutive meaning* lies behind the social practice. It is in terms of these meanings that people speak and act. In order that these meanings can be more fully appreciated, it is necessary for an actor to adopt a *contrasting constitutive meaning* and thus 'take a look' at their own world-view from the 'outside'. In this, admittedly difficult, way it is possible to 'get a handle' on one's own reality." (Flood, p.171, my emphasis)

A constitutive meaning places any social practice into some kind of context. A contrasting constitutive meaning will place that social practice into a radically different kind of context. The latter context helps to 'get a handle' on the former context.

The third dimension of critical realism and critical idealism captures the contemporary debate in critical systems thinking (see for example Mingers 1991). The clearest differentiation of these two opposing critical theorists in Flood is given in the following quote:

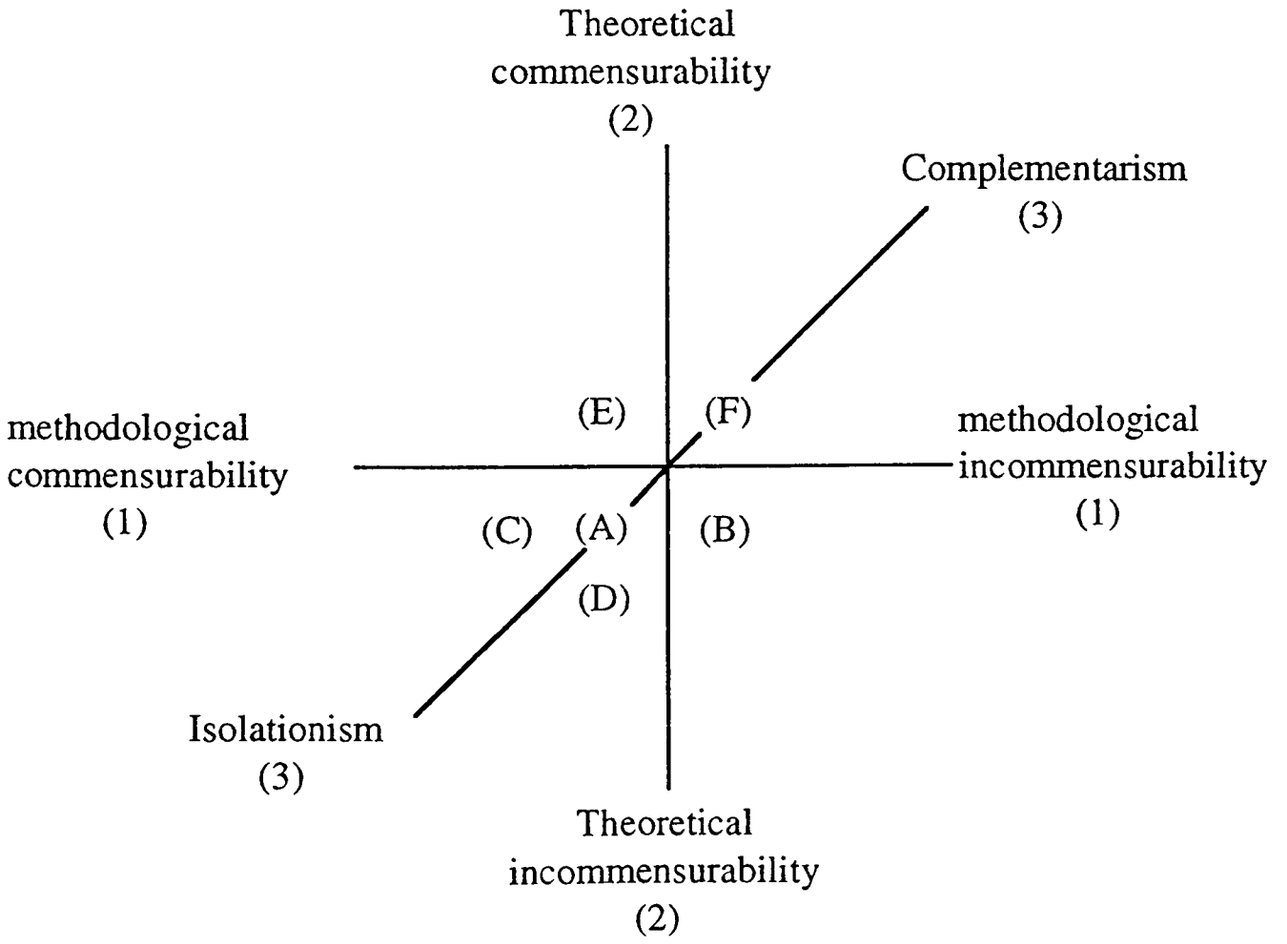
> "The critical idealist, unlike the realist, will always be reminded that all knowledge and understanding of the real world is in terms of phenomenal maps only and that a good map ought to lay open its perspective and scale, its selectivity and purposes and should never allow itself to be taken for the territory." (p.178-9).

Flood goes on to note that all discussion regarding ontological realism verses idealism is irrelevant with regard to a truly radical or critical approach, as to be critical means to continually reflect upon the position within which you find yourself. It could be argued, however, that such a critical perspective requires a precise understanding of the third dimension of critical realism and critical idealism. Such an understanding requires, for example, a clear reading of the critical realism of Bhaskar, including the notions of 'critical naturalism' and

'transcendental realism' (Bhaskar, 1975). Flood must accept such a proposal for a third dimension if his proposals for DFs (with particular reference to the first DF) are to be taken seriously.

Flood's second CD of the six scenarios can be viewed as a development upon the accepted form of the CD, from the centre outwards. In order to offer an explanation of this is it best to begin with a diagram:

Figure 5.8 A Cross-Dialectic of the six scenarios



KEY

The letters (A) to (F) correspond to the six scenarios for problem solving:

(A) is theoretical isolationism.

(B) is methodological isolationism.

(C) is methodological imperialism (by subsumption)

(D) is methodological imperialism (by annexation)

(E) is pragmatism

(F) is complementarism

The three dimensions begin with methodological commensurability/incommensurability which operates within theoretical commensurability/incommensurability which determine whether there is complementarism or isolationism. (These terms have all been previously explained in this chapter, with particular reference to the second DF : complementarism-isolationism).

This second CD is, therefore, an incorporation of the three dimensions and the six scenarios. And the three dimensions are the effects of the six scenarios, these developing in complexity from the first dimension (methodological

commensurability/incommensurability) to the third dimension (complementarism/isolationism). And the six scenarios help to clarify the relationships between the three dimensions in the following manner:

(1) theoretical isolationism (A) only permits the theories of one paradigm (theoretical incommensurability), while accepting different methodologies (methodological commensurability). This explains why theoretical isolationism exists in the space between methodological commensurability and theoretical incommensurability (and also sharing the isolationism dimension).

(2) methodological isolationism (B) permits only the use of one methodology (methodological incommensurability) in one paradigm (theoretical incommensurability). This explains why methodological isolationism exists in the space between methodological incommensurability and theoretical incommensurability.

(3) methodological imperialism (by subsumption) (C) has a "... great similarity [with] ... theoretical isolationism." (Flood, 1990a, p.140), in that it only permits the theories of one paradigm (theoretical incommensurability), while accepting different methodologies (as sub-methodologies of a 'mother' methodology)(methodological commensurability). This explains why methodological imperialism (by subsumption) exists in the space between theoretical incommensurability and methodological commensurability (and also sharing the isolationism dimension).

(4) methodological imperialism (by annexation) (D) shares the same theoretical incommensurability as methodological imperialism by subsumption, however, the form of methodological commensurability is different in that methodologies are attached rather than subsumed. This explains why methodological imperialism (by annexation) exists in the space between theoretical incommensurability and methodological commensurability (and also, being an advanced form of isolationism sharing the isolationism dimension).

(5) pragmatism (E) has "... no explicit considerations of either theoretical or methodological commensurability ..." (Flood, 1990, p.138) though there exists 'superficial' commensurability. This explains why pragmatism exists in the space between theoretical commensurability and methodological commensurability.

(6) complementarism (F) has methodological incommensurability within theoretical commensurability. This explains why complementarism is in the space between theoretical commensurability and methodological incommensurability (and also sharing the complementarism dimension).

This second CD is, therefore, a development upon the previous CDs in that the centre helps to clarify the dimensions (the centre outward). Such a development is rare. It has occurred in this case because there exists firstly a verbal

complexity that requires diagrammatic complexity, and secondly many of the terms at the centre and in the dimensions cross-relate. This second reason is particularly appropriate with regard to Cross-Dialectics.

5.3.3.3 Cross-Generics

Cross-Generics (CGs) develop from CDs as a means to classify the CD. This classification then meets with previous classifications to form a CG. There are two CGs in Flood's texts. They are: systems thinking-social theory; and General systems theory-suppressive ideologies. The first CG is simply the main aim of the text *LST*, the second can be seen as a 'sub-aim' of the book (ie. to reconsider the benefits of a GST). The first CG classifies the first CD as systems thinking and the second CD as social theory (because of its more general scope). In this way, the two CDs presented earlier are now re-presented as a CG. This is the way in which the CG operates.

The first CG comes about because of the proliferation of 'worrying issues' currently unsettling systems thinkers. These issues call for a realignment of systems thinking by developing views on truth and meaning:

> "By addressing the themes in terms of truth and meaning,
> this book synthesizes systems thinking and social theory."
> (Flood, 1990a, p.13)

A similar commitment is voiced on page 180 : "We need to work toward the systems and sociological dimensions of a critical theory.". We can, therefore, witness a CG in operation in *LST*. The call for synthesis is perhaps a little optimistic, but, the need for generic boundaries to be crossed is evident.

The second CG comes about because of a Foucaulvian analysis of the status of GST. It is discovered that GST has been wrongly criticised by non-reflective positivists, neo-positivists and interpretivists. This inaccurate criticism is classified as the operation of a 'suppressive ideology'. And the systems community must realise that such power suppressing technologies are working to undermine the potential of GST. To promote GST as a viable philosophy with which to guide (the otherwise blind) systems science must begin with a recognition of these two classes of activity in systems thinking: the productive potential (under the GST banner) and the suppressive technologies.

5.3.3.4 Pluralism

From CG to Pluralism we begin to organise and specify the main arguments considered in this application of the Architecture of CST. There are four relevant issues to raise in this last section: the impossibility of a singular history; the plurality of intended meanings; complementarism; and pluralism as domination.

The impossibility of a singular history forces Flood to consider the whole area of historical investigation. Firstly, in recognising that "... there cannot be a

systems science based on any singular set of rational rules." (p.5), it follows that "Accordingly we shall reject the idea of one history and progression in systems thinking." (p.113). This rejection leads to four main approaches to historical investigation: linear sequential; structuralism; world-viewism; and genealogy. The contention is that the apparent contradiction in using more than one approach at any one time may be overcome "... by subsumptional or other means, [and] versions of plurality may have been achieved." (p.119). Pluralism, therefore, is given a status higher than contradiction, where contradiction might demand that only one, singular history is able to successfully record events. This is Flood's first notion of pluralism.

The plurality of intended meanings follows on very well from this paragraph on historical investigation. The intention, however, is not directly related to the notion of singularity as contradiction (a Platonic ideal), but rather related to the first CG, that of the need to develop sociological dimensions within systems thinking. Flood puts the point thus:

> "The idea of a plurality of intended meanings reflects diverse difficulties that are currently challenging the integrity of systems thinking." (p.14)

This plurality must be matched (in the Ashbyan sense) with a similar plurality of research initiatives. Such a response will help to maintain the integrity of systems thinking as long as the initiatives are implemented in an integrated fashion. This is Flood's second notion of pluralism.

Complementarism has been discussed already in various ways. It remains, however, to show the main thrust of Flood's thesis concerning this subject:

> "A complementarist way forward is a powerful call for correlativity. The aim here is to investigate situational complexity in addition to analysing how various systems methodologies deal with different aspects of complexity. It is then possible to link methodology to situational context via meta-reasoning and thus to direct the systems 'problem solver' toward an appropriate methodological approach." (p.143)

Complementarism is meta-reasoning. Complementarism is the ability to deal with a plurality of methodological approaches. Complementarism is the comparison of situational contexts. There are, inevitably, problems. The call for complementarism comes with an "... aim ...which does this without incorporating theoretical contradictions." (p.143). There exists a contradiction regarding the thesis of plurality being superior to singular contradictions, the first notion of pluralism. There will be contradictions. In order to understand the notion of meta-reasoning we must accept that contradictions are always situationally contextual, and to that extent we must welcome contradiction, because contradiction translates as plurality of situational contexts, which is the aim of complementarism. To suggest, therefore, that we can implement complementarism without incorporating theoretical contradiction is a contradiction in itself. This is Flood's third notion of pluralism.

Pluralism as domination relates to the last notion of pluralism, in that to implement complementarism void of contradictions is to implement complementarism as a form of theoretical domination. An interpretation exists which shows the following quote as 'pluralism as domination'.

> "Analysis of power should proceed up from a microlevel and seek to reveal how mechanisms of power have been colonized by more general or macro forms of domination." (p.45).

Could it be the case that complementarism, in the form discussed above, could be seen as such a general or macro form? Could complementarism be viewed as a collective response to democratise the procedures of methodological choice and theoretical persuasion? Is the collectivity not to be found in the way in which systems 'problem solving' must be saved to benefit us all ? Is this, therefore, not democratic? If so, then we find that complementarism has responded to the notion of a public right, and that this public right was

> "... articulated upon collective sovereignty [the sovereignty of systems thinking], while at the same time this democratisation of sovereignty [the Habermasian notion of equal and free dialogue in an ideal speech situation] was fundamentally by and grounded in mechanisms of disciplinary coercion." (Foucault, 1980, p.105).

If pluralism can be viewed as domination in this sense, then we must be wary of the way in which power forces us to seek truth in the way that we seek commodities. Because armed with a generalised approach, such as complementarism, are we not more conveniently attracted to the commodifying notion of truth? If we discover this in our genealogical studies, then can we not suggest that pluralism acts as domination? This is (not) Flood's fourth notion of pluralism.

5.3.4 FLOOD AND JACKSON

5.3.4.1 Dialectical-Forms

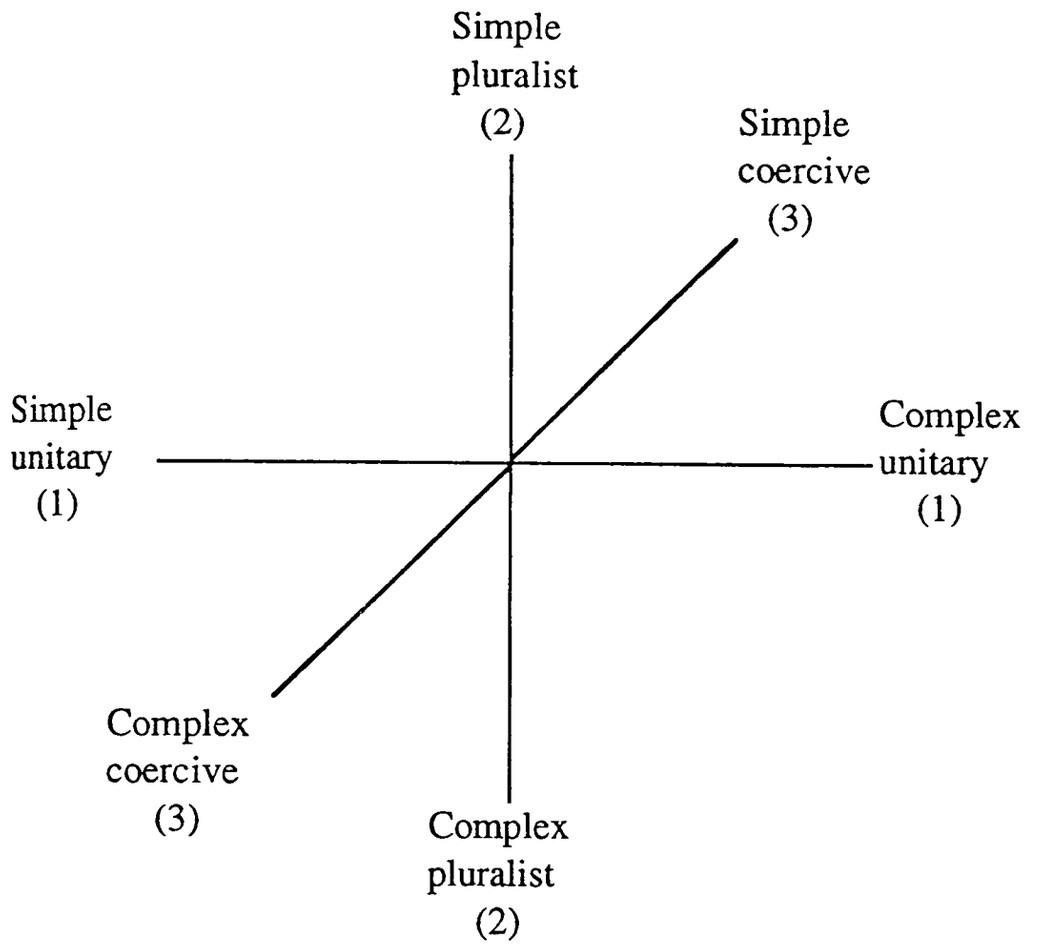
There are three clear Dialectical-Forms (DFs) at play in Total Systems Intervention (TSI). They are: simple-unitary-complex-unitary; simple-pluralist-complex-pluralist; and simple-coercive-complex-coercive. All three of these DFs are taken from the 'System of systems methodologies' (see Jackson and Keys (1984), and Jackson (1987)). The dialectical play operates around the notions of simple and complex in all cases, as the perceptions of the participants are identical in each DF, and also the possibility to develop a DF from one form of participants to another form is hampered by the political context within which the participants find themselves. To clarify: a DF requires oppositional thinking (such as that experienced between the simple and complex forms) and not a similar manner of thinking but in an ever more complex manner (such as that experienced from the unitary to the coercive relationships). We find,

therefore, that three DFs exist in TSI operating around the same opposition (simple/complex). For example, small/large, highly organised/loosely organised, and predetermined elements/non-predetermined elements. These three DFs work to continually clarify the meanings of 'simple' and 'complex' in their own perspective. If that perspective is unitary, then the clarification is relatively easy. If, however, that perspective is coercive, then clarification becomes a matter of political naïvety (in not recognising the political forces at play).

5.3.4.2 Cross-Dialectics

There only exists one Cross-Dialectic (CD) in TSI, and that develops directly from the three DFs:

Figure 5.9 CD of the system of systems methodology



The three DFs combine to give three dimensions in this CD of the system of systems methodologies. The three dimensions develop in complexity from the relatively clear simple-unitary-complex-unitary (1) to the obscure simple-coercive-complex-coercive (3). The DFs all cross where they find some temporary agreement regarding the perspectives of the participants. What is interesting, therefore, is to compare these perspectives from the unitary to the

coercive by comparing the measure of agreement (seeing if any measure at all is possible in the coercive condition would be interesting in itself) that pervades in each case. It is the difference in the measure of agreement that is important in such an exercise. Obviously one situation will not have the same measure of agreement as another situation, and some measures of agreement are more difficult to achieve than others. Nevertheless a study of the differences of agreement proposes to be a valid exercise as it will offer a plurality of meaning (to the word 'agreement') as a guide for prospective action. Such a plurality of meaning is both the interest of this CD and of the TSI project as a whole.

5.3.4.3 Cross-Generics

Cross-Generics (CGs) offer a different challenge to the systems thinker, attempting to cross the generic of Total Quality Management with the generic of Systems science, and crossing the generic of philosophy with systems science. The first CG offers a development of systemic metaphors since "... Total Quality Management (TQM) [can be seen] as an articulation of systemic metaphor." (p.15) And this articulation when viewed with the organising capacity of TSI offers "... different accounts of what an organisation is like... [And this in turn] ... will help illuminate our Total Systems Intervention (TSI)." (p.15). The results of this CG between TQM and TSI are given on page twenty-one of TSI, where it is suggested that both forms of classification benefit from such inter-generic

activity. A further CG between TSI and TQM is given on page 54-58. Again the results seem beneficial, since the iterative nature of TSI is made clear, and the complex metaphorical interpretations in TQM are also drawn out.

The second CG of Philosophy and systems science has already been hinted at in the section on the marginal positions of TSI. The consistent use of Critical theory as an explicit philosophical position in TSI, and the manner in which it is interrelated with the interests of systems science offers some hope for the future prospects of systems science. An obvious effect of this CG is the use of Ulrich's *Critical Systems Heuristics* (CSH) from page 197 to 222. CSH explicitly uses a blend of Kantian and Habermasian philosophy in order to develop a methodology that is competent enough to challenge the rationality of decision makers in potentially coercive situations.

5.3.4.4 Pluralism

The final piece of the Architecture that requires application to TSI is pluralism. Pluralism is taken very seriously in TSI. We can note two important uses: different versions/views; and complementarism. The first use: "We believe that managers should entertain different versions of what their enterprise is or could be like (by using different metaphors)..." (p.15). The different versions or views are represented in the range of metaphors and the subsequent range of methodologies. Pluralism as difference of view, therefore, is taken seriously enough to develop a means with which to implement more than one methodology

at any one time (given in the notion of dominant and supportive methodologies). This first use of pluralism in TSI needs to be encouraged as it shows that any methodology can only be considered as a partial observation, and since we are motivated to continually overcome and develop partial observations we need to encourage TSI.

The second use has already been discussed at some length in the sections on Flood (above) and Jackson (below), so only a brief mention is needed here. Perhaps the clearest recognition of the power of pluralism as complementarism is given on pages 47 and 48 of TSI:

> "Different methodologies express different rationalities stemming from alternative theoretical positions which they reflect. These alternative positions must be respected, and methodologies and their appropriate theoretical underpinnings developed in partnership."

This form of complementarism admits that methodologies have their theoretical contexts within which they can offer clear guidance for the systems thinker. These theoretical contexts surround and to an extent dictate their situational contexts. We should, therefore, be aware of this complexity in our understanding of complementarism. Such an understanding is clearly offered in the above quotation. We can thus proceed to suggest that the Architecture of CST shows good application in TSI at the level of pluralism.

5.3.5 JACKSON

The general ideas advocated in TSI in a pragmatised manner are given a more thorough treatment in Jackson's *Systems Methodology for the Management Sciences* (1991). Jackson's employment of the Architecture of CST is the interest of this section. The Architecture operates as a 'means to organise and construct ideas'. The Architecture as applied to Jackson will observe the manner in which these 'means' are employed in identifying Dialectical-Forms, Cross-Dialectics, Cross-Generics, and notions of Pluralism. There is seen to be a very strong relationship between the Architecture and Jackson's text. Let us now consider this relationship.

5.3.5.1 Dialectical-Forms

We must first of all look at Jackson's employment of Dialectical-Forms. In order to briefly remind the reader, Dialectical-Forms (DFs) consist of two opposing terms that operate to reveal continuous limitations between each other. One term will develop a specific theory that constantly refers to the other term, and it is constructed in order to defeat the other term, and while this is happening, the other term is also constructing a theory (that may act as a reply, or as a different initiation) that is hoped will destroy the first term. The development of such theories shall be named *dialectical*, and the terms themselves shall be named the *forms* through which this dialectical process operates. An analysis of Jackson's

text reveals the presence of Twelve Dialectical-Forms. We will now consider each DF in sufficient detail in order to differentiate each from the others. The twelve DFs are:

(1) Social integration - System integration (p.13-14)

(2) Systemic modernism - Critical modernism (p.33-34, p.72)

(3) Marxian alienated - Habermasian distorted (p.15, p.17)

labour communication

(4) System - Participant (p.27)

(objectivity - subjectivity)

(5) Syntactic - Semantic (p.124)

(6) Interpretive - Structuralist (p.127-129)

(7) Subjectivity - Objectivity (p.137)

(8) Technocratic - Social (p.183)

(9) Systems rationality - Social rationality (p.192)

(10) Idealists -Realists (p.193)

(11) Theory - Praxis (p.194)

(12) Pragmatism - Complementarism (p.262-264)

The first DF requires a definition. Social integration is "the development of understanding and shared norms and values among individuals " (p.14). System integration is "[r]ationalisation in the domain of instrumental action [which] concerns control over the forces of production and over the organizational forms that promote the steering capacity of society." (p.14). As Jackson provides these

two forms of integration we can see that social integration develops the 'practical interest' while system integration develops the 'technical interest'. These two Forms are also the creation of two German sociologists: Habermas and Luhmann respectively. Habermas promotes the hermeneutic and critical sciences, while Luhmann promotes the empirical and analytic sciences. Habermas and Luhmann, therefore, are advocates of each DF and work to motivate the destruction of each other's position. Habermas working to destroy the domination of technical interest. Luhmann working to destroy the inexactitudes within the practical and emancipatory interests. Jackson resolves this DF in the interests of his text; the Habermasian position is granted the ability to destroy the Luhmannian position. Such action is not recommended. Consistent with the thesis on DFs, it must be permitted that DFs are allowed to operate within as many contexts as possible and all attempts to prematurely close any DF must be severely considered (such actions constitute the interest of the second stage of this thesis).

The second DF develops directly from the first DF (this explaining why it ignores the normal presentation procedures of DFs). The second DF is a broader conceptualisation of the Habermas and Luhmann debate. The second DF concerns the relationships between Systemic modernism and Critical modernism. Again we will maintain the flavours of Jackson's text by taking definitions of these two terms directly from his text. Systemic modernism "... is identified with the systems approach as a means of both understanding society and programming it for more effective performance." (p.33). In contrast to this, Critical modernism "... rests upon ... the power of "grand narratives"... . These grand narratives take two forms. First, there are philosophical "totalizations"that offer a unified view of all learning. ... Second are those narratives that chart the emancipation of the

human subject." (p.34). From these two definitions the 'system' and the 'individual' take on different priorities. For systemic modernists, the rationality and performativity of the system is of the utmost importance: the 'system' is given priority. For critical modernists, the communication between and the emancipation of the individual is of the utmost importance: the 'individual' is given priority. For systemic modernists the complexity of the 'system' far exceeds the complexity of the individuals who make up that system, because to understand the 'system' is to understand the relationships between the individuals. The relationships become more important because the relationships determine the identity of the individual. For critical modernists the complexity of the individual far exceeds the complexity of the system which the individuals must create (in order to realise the necessary conditions for emancipation), because to understand the individual is to understand the means to construct the system. The system is seen as being the endpoint, the result of the individual efforts to communicate and liberate. Jackson allows this DF between systemic modernism and critical modernism to develop through a postmodernist audience of Lyotard and Cooper and Burrell and a systems thinking audience of Classical Operations Research. However, given this apparent openness to all three forms of modernism (systemic, critical, and post), which is contrary to the first DF, Jackson finishes the chapter (two) with a critical modernist's call for unity (conforming to the first theme, see the first movement), in that study of these different forms of modernity must only result in critical modernity being seen as the credible 'champion' of modernity, as it

> "... provides ... the possibility of reestablishing systems thinking as a unified approach to problem management ..." (p.38)

If this is the result of Jackson's application of this second DF upon systems thinking, then it has not influenced at all the initial theme stated on page vii. How should this lack of influence concerning the modernist debate affect the overall conclusions of Jackson?

The third DF reestablishes the possibility of providing systems thinking with a unified approach since it concerns the work of two critical modernists (see page thirty four for Jackson's confirmation): Marx and Habermas. The DF is Marx's alienated labour and Habermas's distorted communication. This DF because of its overall critical modernist orientation is relatively balanced, not sharing the typical DF characteristics of a will to destroy the other's position, but wishing to complement the other's position. This third DF wishes to complement Marxian analysis of economics with Habermasian analysis of the social-cultural life-world. Both poles of the DF are concerned with alienation. The Marxian pole being concerned with alienation of the worker. The Habermasian pole being concerned with alienation of the speaker. From these two concerns spring forth two anticipations: the Marxian anticipation of free labour and the Habermasian anticipation of an ideal speech situation (see page 17). The operation of this DF stimulates complementarism as oppositional thinking, since Marx opposes Habermas's ethereal conception of rationality (Callinicos, 1989, p.110-120) and Habermas opposes Marxian privileging of the acting subject's relationship with

readily manipulable objects (Habermas, 1987). In Jackson's thinking Habermas complements Marx in this third DF in believing that these oppositional challenges can be overcome.

The fourth DF derives from the systems definition offered by Jackson in the first part of this chapter, the dialectical play between 'system' and 'participant'. As stated in chapter 5.1, this play represents a dialectical relationship between objectivity and subjectivity. In the System of systems methodologies

> "... there are two aspects of problem contexts that might have a particularly important effect on the character of the problems found within them. These two aspects are the nature of the *system(s)* in which the problems are located and the nature of the relationships between the *participants*." (p.27)

These two aspects, in a complementary fashion, cover the more objective sciences (Hard systems thinking, Cybernetics) and the more subjective sciences (Soft systems thinking, Critical Systems Heuristics) at once. And Habermas corresponds to these two aspects as the systems dimension corresponds to the technical interest, and the participants dimension corresponds to the practical and emancipatory dimensions (p.30). It is the 'metatheory' of complementarity that organises this fourth DF as it attempts to synthesise the systems (objective, technical interest) and participants (subjective, practical and emancipatory) dimensions. Such a synthesis must be resisted by the Architecture of CST. The Architecture would call for both aspects of the DF to be examined as competing

entities, not as one synthesised entity. The importance of the DF exists in the way in which each form attempts to destroy the other form, and it is this competitive relationship that must be studied and continually re-understood. A synthesised entity exists to restrict this re-understanding from taking place as it forces closure of the DF.

The fifth DF comes as an Ulrichean critique of Beer's organisational cybernetics (see Ulrich, 1981). Ulrich posits that Beer's VSM only accepts a syntactic version of variety, it neglects a semantic notion of variety. Ulrich uses a 'syntactic' version of variety to refer to the hard distinguishable states of a system, and a 'semantic' version of variety to refer to the softer interpretations of that system (we again see the surfacing of the 'systems' (as syntactic) and 'participants' (as semantic) dimensions as witnessed in the fourth DF). If Ulrich's criticism is exacting, then Beer's VSM neglects the Habermasian practical interest in allowing the technical interest to dominate his definition of variety. The DF between the 'syntactic' and the 'semantic' stands as an opportunity for Beer, and indeed Ulrich, to strengthen their respective positions by realising their respective weaknesses (namely Beer's inability to see the more semantic versions, and Ulrich's inability to see the more syntactic versions as valid). This operation of the DF would then offer a chance for each author to enter into the paradigm of the other.

This process of entering into different paradigms is taken seriously in this, the sixth DF. A DF between interpretive and structuralist approaches. This develops as Beer's VSM is adopted by second-order cyberneticians such as Harnden. Second-order cyberneticians, such as Harnden (1989) wish to see VSM

used as a 'hermeneutic enabler', as an aid to understand complex organisational forms. In contrast, the structuralist intentions of VSM propose only one choice: either the cybernetic laws work or they don't (if they work then the VSM works). It is argued that such an understanding of cybernetic laws has little to do with hermeneutics, and therefore this sixth DF faces extinction.

The seventh DF concerns an area that we have touched upon earlier: subjectivity-objectivity (p.137). It is a Churchmanian dialectic:

> "This opens the way, for Churchman, to a different understanding of objectivity. Subjectivity is not to be rigourously excluded... but must be included in any definition of objectivity-so that bringing together different subjectivities the restricted nature of any one world view can be overcome." (p.137)

Instead of objectivity determining truth, it is the task of many different subjectivities. However, these many different subjectivities become objective, assuming that one subjectivity exists to organise these subjectivities by recognising their limitations (the critical subjectivity of Jackson springs to mind). The constant interchanging of these subjective views and objective ideals calls for a very sophisticated seventh DF. It must be sophisticated enough to challenge the objectivity of any subjectivity, and the subjectivity of any objectivity. Both forms enable such a process to be possible, as long as sufficient subjectivities can be mustered and a potent objectivity put into motion (for example emancipation of the human subject).

The DF of technocratic-social was proposed by critical management scientists Tinker and Lowe in 1984. They suggested that traditional management science was technocratic, and a social dimension needed to be developed: "They also saw the need to understand the dialectical relationship between the technocratic and social aspects." (Jackson, 1991, p.183). One example of this dialectical relationship is the social attitude that allows for a technocratic rationality to dominate, and this occurs when the technocratic dominates within the dialectic. To question this domination is to give opportunities for the social dimension to flourish. As this occurs, the technocratic will be put through a severe social critique.

The ninth DF exists between systems rationality and social rationality, and takes place within Ulrich's *Critical Systems Heuristics* (CSH). Ulrich's CSH uses Kant's polemical employment of reason (a critical attack upon dogmatic assertions) as the basis for boundary judgements to be made by affected citizens against the 'expert' decisions of planners, decision makers, and their clients. The expertise of these three classes of actors is represented by the systems rationality, while the critical attack of those affected citizens comes from the social rationality aspect. A plan is proposed from a systems rationality, a rationality that is shown to be highly subjective, far from the traditional heights of expertise. This subjectivity, like any form of subjectivity, must be critiqued. Critiqued by boundary judgements. This critique brings together the 'experts' and the affected into a "...dialectical solution..." (p.192) that forces the systems rationality to consider, and to take seriously, the social rationality of the affected.

This ninth DF is considered by Jackson to be lacking in any realist dimension in asking: why should the systems rationality take any notice of the social rationality of the affected? In response to the possible problems of any implementation of CSH, Jackson proposes a DF between idealists and realists (p.193). The idealists represent the philosophical heritage of Ulrich, idealists such as Churchman (his PhD supervisor), Hegel and Kant. Realists however, are neglected. Jackson suggests Marx and the Frankfurt school (though Ulrich does use Marx, Adorno, Horkheimer, and Fromm, though not in the manner that Jackson would prefer). Is this the case however ? With reference to pages 276 and 277 in CSH we find that Ulrich does indeed adopt a realist orientation. In fact he adopts it in criticism of Hegel using Marx. The criticism surrounds the overly idealistic use of dialectic in the works of Hegel:

> "... the dialectical process cannot be located only within either the realm of reason (concepts) or the realm of practice without losing its dialectical character at the very basis." (Ulrich, 1983, p.277)

Such criticism exists as early Marxian, since later Marx was seen as being overly realistic in orientation, and Hegel as being overly idealistic. Therefore, to accuse Ulrich of being realistically naïve, and also to accuse Ulrich of failing to come to terms with the realist orientation of Marx seems to be a little harsh. The tenth DF of idealism and realism is alive in Ulrich's work as much as it is in Jackson's work.

The eleventh DF of theory and praxis is highlighted by Habermas in *Theory and Practice* (1974) and applied to systems thinking by Jackson. The mediation of this DF is proposed by Habermas along with the necessary differentiation of three functions: firstly, the formation and extension of critical theories (measured by the criteria of scientific discourse); secondly, the organisation of processes of enlightenment (measured by the criteria of reflection); and thirdly, selection of strategies (measured by the criteria of political solubility). These functions show a willingness to mediate theory and practice. In each case a theory is proposed as a function, and a practice is shown as criteria. However, the function affects the criteria as much as the criteria directs the function. This can, perhaps, be considered as a second dimension within this very complex DF (the first dimension being the attempt to look for 'candidates' for both forms, candidates that represent a worthwhile function and a realistic criteria). To suggest a mediation of theory and praxis, however, is to fail to understand the two forms. Theory is an instance of praxis while praxis continues to distort and reinforce that theory. To bring the two together is to believe that either praxis is not worth theorising about, our that theorising is far too difficult and/or bears no relationship with praxis. All of these reasons are highly pessimistic, and therefore, we must continue to observe the theory-praxis DF with an overall aim of allowing enhanced communication between the two forms (not a false synthesis).

The twelfth and final DF exists between pragmatism and complementarism. This dialectic has been considered already in the two previous studies in this chapter, and therefore it is suffice to briefly differentiate its use within this study. It could be suggested that, methodologically speaking, pragmatism concentrates upon "... what works in practice ..." (p.261), and that complementarism con-

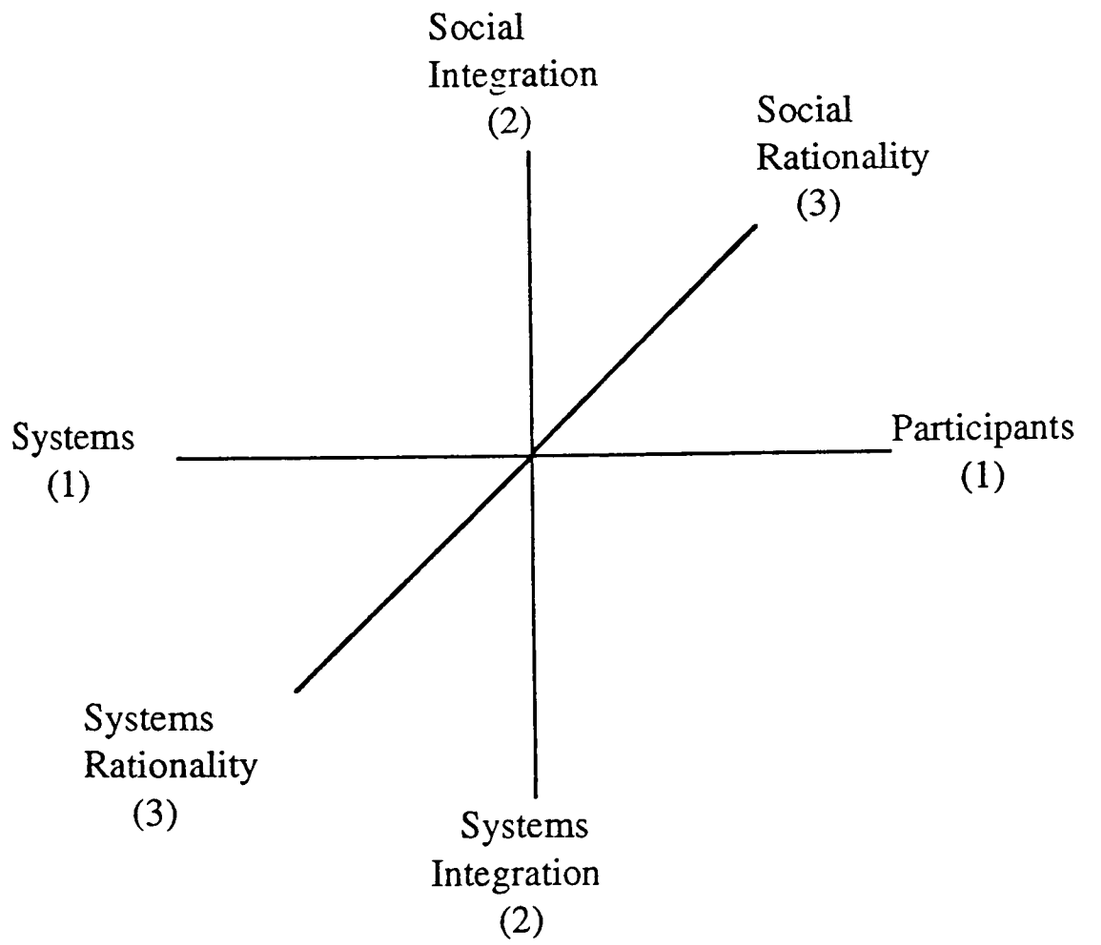
centrates upon "...theoretical development ... " (p.262). Again we see the operation of another DF (the previous one in this case) as being influential upon the operation of a current DF. Pragmatism follows no explicit rules, and this of course makes it highly susceptible to coercive forces. Complementarism, in contradistinction, follows explicit rules of respecting different approaches, and is therefore able to recognise coercive forces. This DF then operates to highlight the existence of coercive forces by using both notions of complementarism and pragmatism. Pragmatism to highlight (unthinkingly) the sources of coercion, and complementarism to offer these sources to critique (the highlighting of coercion through pragmatism is not achieved with pragmatism alone, rather with a complementary use of pragmatism. This shows the dominance of complementarism within this last DF, a dominance that cannot be challenged by pragmatism, as pragmatism has no co-ordinated effort unlike complementarism).

5.3.5.2 Cross-Dialectics

Having considered the many DFs in Jackson's work, we are now in a position to develop Cross-Dialectics (CDs) from them. All CDs in Jackson's work directly come from DFs in the above section. This will allow the introduction of these CDs to be more brief than is normally the case. There exist two CDs: the harmonisation of people and system; and the harmonisation of objectivity and subjectivity (the reader will note the thematic conformity here).

The harmonisation of people and system has three DFs, they are: systems-participants; systems integration-social integration; and systems rationality-social rationality. According to the list of the twelve DFs above, these are respectively the fourth, the ninth, and the first. The CD looks like this:

Figure 5.10 CD of the harmonisation of people and system



This CD represents Jackson's ethic of complementarity, the spirit of which is to complement 'people' with the 'systems' within which they find themselves. The first DF (1) is seen as the most fundamental within this CD, as it basically sets out the distinction between people and systems with reference to Jackson's 'System of systems methodologies'. The second DF applies the Habermas-Luhmann debate to the CD through a discussion upon methods of integration. And the third DF applies these preceding notions (in the two previous DFs) to possible practical situations through Ulrich's dialectical dialogue between those holding a 'systems' rationality, and those holding a 'social' rationality. Complexity develops as we travel from the first to the third DF. The DFs cross at 'points of temporary resolution' in order for debate between the DFs to take place. For example, debate concerning the competing rationalities (of social and system) and the system of systems methodologies (the system - participant DF) could offer guidance from the latter to the former, and information concerning coercive conditions from the former to the latter. Such debate, however, is only made possible when temporary resolution exists at each DF (when the first DF agrees upon a methodology that is fair to both the 'system' and the 'participant', and when the third DF agrees upon a notion of rationality and emancipation, then debate can begin between the first and third DFs as regards 'the harmonisation of people and systems' in terms of a localised perspective). This CD is immensely complex as it takes on the complexity of the DFs and introduces a new layer of complexity between them, a layer that will initiate communication between them.

The second CD is similarly complex as it attempts to harmonise objectivity and subjectivity. This is a strong theme in Jackson's work, and it is essential that

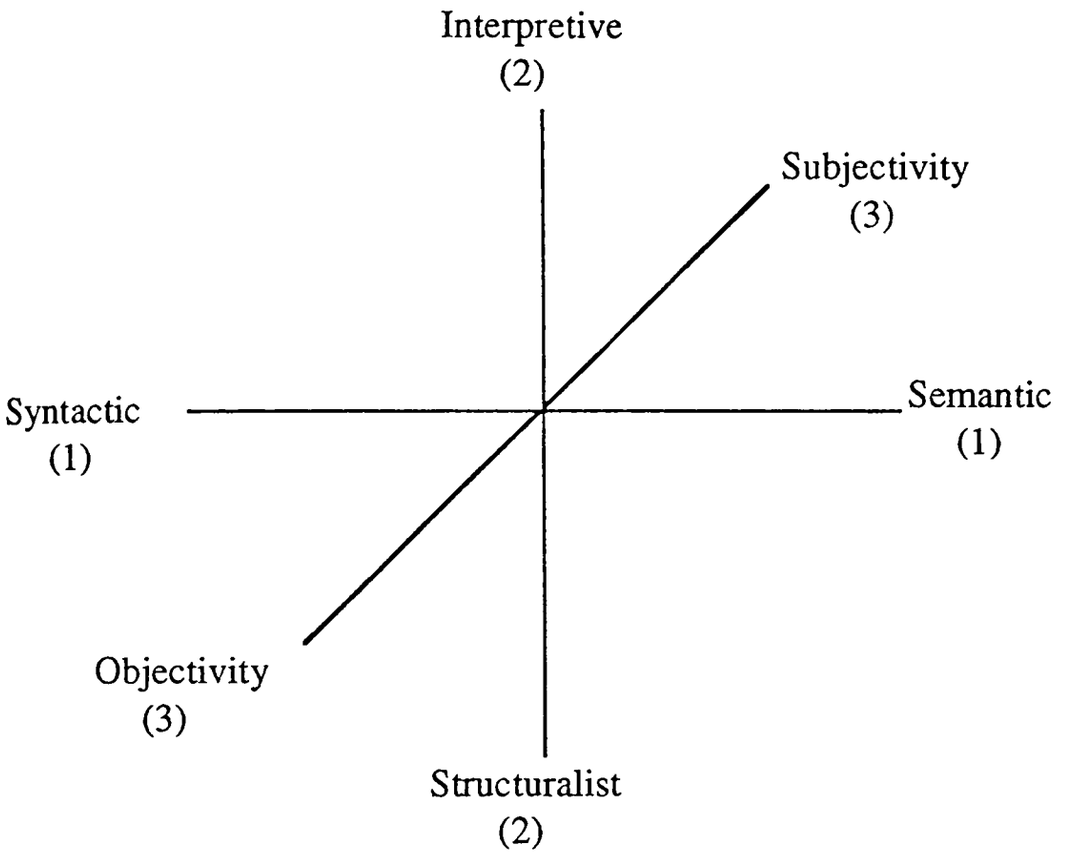
we seriously address this theme in the form of a CD. A CD can offer the potential for high theoretical consideration of any issue as it develops three consecutive DFs into temporary forms of dialogue by preparing them for temporary resolution (the details of this process is to be found in both chapters two and three). For the purposes of this section on Jackson's second CD it is sufficient to detail the possibility for temporary resolution across the DFs, in as many different areas as seems reasonable.

There are three DFs:	Syntactic - Semantic (1)st
	Structuralist - Interpretive (2)nd
	Objectivity - Subjectivity (3)rd

The first DF shows the intentions of the CD as the grammatical base. The second DF shows how this intention becomes a philosophical position. And the third DF shows how this position relates to the more general perspectives of objectivity and subjectivity.

These three DFs, as in the case of the former CD, relate directly to the twelve DFs presented in the section above. The first relating to the fifth DF, the second relating to the sixth DF, and the third relating to the seventh. It must also be noted that a dimension of objectivity pervades the left hand side which contrasts with the subjectivity of the right hand side. This contrast exists as another form of comparison between the DFs, a vertical comparison (where the dominant form of comparison is horizontal, across the DFs). Such a comparison is useful, as it shows the systemic relations between the three DFs. Let us now view the CD as it takes shape with these three DFs :

Figure 5.11 The CD of the harmonisation of objectivity and subjectivity



Beginning with the first DF within the CD: Syntactic and Semantic. This DF comes from Ulrich's critique of Beer's measure of variety in VSM. The syntactic measure offers a hard and singular answer to the question 'What are the states of variety within this organisation ?'. A semantic measure offers a soft, plurality of answers to this question. The CD seeks a temporary resolution to this

dialectic between these two measures in the interests of a cross-debate with other temporarily resolved dialectics. The second DF can provide such a resolution if we follow in the spirit of Espejo's (1989) proposed methodology. This methodology offers an interpretive consideration of structuralist logic (cybernetic logic as reasoned by Beer). It must be the case, if we temporarily accept the interpretive position, that more than one view of this structuralist logic exists, as it is not possible that all cybernetic thinkers singularly agree upon the derivation, logic, and application of cybernetic principles (it may be the case that basic cybernetic principles must be obeyed, but this does not restrict the interpretive possibilities at the level of derivation and application, it must be the contention of this second CD that such possibilities exist). This case, thus, offers the potential for discussion with the first and second DFs within the CD. The third DF brings to life three particular moments: the Habermasian mediation of theory and praxis, Jackson's application of this mediation to systems thinking, and Churchmanian dialectics (all three moments are discussed in the section above). Resolution of these moments is offered with a reading of Jackson's text (though it must be recalled that DFs are fundamentally against such resolution, but support temporary resolution in the interests of the CD (as Jackson seems to call for resolution in the interests of an emancipatory ideal) working to communicate with other temporarily resolved DFs), therefore, the operation of the CD is shown to be possible with regard to the case of the third DF. Together we have the potential for a rewarding debate with regard to 'the harmonisation of objectivity and subjectivity', and to this extent we can continue a form of appreciation of Jackson's text. This appreciation leads us to the next stage in the Architecture: Cross-Generics.

5.3.5.3 Cross-Generics

Cross-Generics (CGs) search for examples of classifications of knowledge ('Generics') coming together for the purpose of inter-generic communication (Cross-Generics). As Jackson respects this form of communication we encounter many examples in his text. Six examples have been registered (each presented in their CG form):

(1) Social science - Systems science (p.3-4)

(2) Management science - Social science (p.279)

(3) Psychology - Sociology (p.48)

(4) Psychoanalysis - Social theory (p.15)

(5) Modernism - Post-modernism (p.32-37)

(6) Emancipatory Systems Thinking - Soft Systems Thinking (p.192)

The scope of each CG is different, some are more specific (the sixth for example) than others (the fifth for example). The order reflects Jackson's perceived importance of each CG, the first being more important than the sixth. The three different resolutions of social studies (from social science to sociology to social theory) represent the interests of the perceived resolutions as given by Jackson (for example social science is more specific than sociology which is more specific than social theory) at the relevant page numbers.

The first CG can be explained with the use of a quotation :

"This book provides social scientists with access to modern systems approaches." (p.4)

Jackson uses the considerable theoretical sophistications of social science in order to enhance the practice of systems approaches. In doing this, the social scientist is given access to these approaches because of his/her detection of the practical use of known (by him/her) social theories. Simply, this is the first CG, and Jackson's most important.

The second CG comes as a result of this first CG. This CG is very clearly spelt out towards the end of his text :

"Systems methodologies, therefore, are a possible bridge between the management sciences and the social sciences, and my hope is that this book will encourage a fruitful cross-fertilization of ideas." (p.279)

There seems to be no further requirement for the purposes of clarifying this CG.

The third CG operates as a detection of a CG in another author's work: in Katz and Kahn's *The Social Psychology of Organizations*. As the title blatantly suggests, this work's general aim is to bring Psychology and Sociology together in order to study organisations. The importance of this work is perhaps as a stimulus for the fourth CG, as the inherent worth of this third CG is not directly apparent.

The fourth CG is Habermasian in nature (which explains the shift of importance from the third to the fourth DF). In *Theory and Practice* Habermas attempts to explain the relationship between the three Knowledge-constitutive interests by employing psychoanalysis. This explanation inevitably reaches beyond the more immediate psychoanalytic conditions and towards the less immediate societal conditions. This explanation, therefore, is an attempt to formulate a CG between psychoanalysis and social theory. This explanation clarifies the purpose of Habermas's third Knowledge-constitutive interest (the emancipatory interest) and the purpose of this quote from Jackson:

> "This psychoanalytic model can, with care, be seen as relevant to society as a whole." (p.15)

The application of a 'situation-specific' approach such as psychoanalysis to a 'situation-general' approach such as social theory seems to require further explanation. Firstly, we can explain that the social dimension determines the success of the psychoanalytic, in that moral-practical expressions guide the presuppositions of discourse:

> "The presuppositions of discourse can be satisfied only after the therapy has been successful. I shall call the form of argumentation that serves to clarify systematic self-deception *therapeutic critique*." (Habermas, 1984, p.21)

As the success of the therapy is dependent upon a clear CG between society and (the effects) of psychoanalysis, we must admit the supremacy of

social theory at nearly every moment in this CG. The main moment at which supremacy shifts from the societal conditions to the psychoanalytical conditions occurs with the validity claims of communication. These claims are not "... regarded as problematic from the start; the patient does not take up a hypothetical attitude toward what is said;" (Habermas, 1984, p.41), when a hypothetical attitude is required in order to give symmetrical relationships between the analyst and the patient. The symmetry here is perhaps the clearest enunciation of the possibility of a CG between social theory and psychoanalysis, where the symmetry gained in this specific relationship is carried forward into less specific relationships outside of psychoanalytical conditions. This is the ground for the fourth CG.

The fifth CG is between modernism and postmodernism. Postmodernism throws the grand narratives of modernism into a discontinuous network of ideologies; where certainty is upheld through a modernistic 'externalised' rationality, postmodernism shows this certainty as ideological dominance; where the subject is crowned as the centre for modernistic emancipation, postmodernism shows this centre as paradoxically residing within and outside the emancipatory structure; and where modernism uses language as an uncomplicated extension of thought, postmodernism laughs at the necessary isolated structure (presuming a unity of form and meaning). A CG between these two ways of thinking proposes to be rewarding, as they have the potential to cover systems thinking as a cultural study and an intellectual study simultaneously (and this must be to the benefit of the plurality of Knowledge-constitutive interests).

The final CG proposes an investigation across Emancipatory systems thinking and Soft systems thinking, using the work of Ulrich and Checkland. Jackson claims that "... it is Checkland's work that is nearest to Ulrich's in terms of orientation and intent." (p.192) and then proceeds to draw out similarities in the CG style. The similarities lie between Checkland's CATWOE and Ulrich's twelve questions, and also the manner in which Checkland uses the involved in a 'feasible and desireable' debate stage is similar to the manner in which Ulrich uses the affected. A serious CG awaits, as "... some interesting results might be obtained by comparing and contrasting Checkland's and Ulrich's lists." (p.192).

5.3.5.4 Pluralism

The notion of Pluralism is taken very seriously by Jackson, and six versions can be drawn from his text. The six are 'pluralism ...':

(1) as many different rationalities as possible (p.137, p.186, p.210)

(2) as subjectivism (p.180)

(3) as recognition of the impossibility of universal agreement (p.28)

(4) as alleviation of (p.130), (through linear accounts of history p.205)

(5) as attempt to halt multiplicity of isolationism and install complementarism (p.259, p.269)

(6) as democracy (p.120)

Each of these versions of pluralism will now be considered by generally developing from the understanding already achieved within this section on Jackson.

The first version is the most frequent. It refers to Churchman's quotation:

"The only way that we can get near to a view of the whole system is to look at it from as many perspectives as possible." (as quoted on page 137 of Jackson, 1991);

respecting the "Different strands of the systems movement [as] express[ing] different rationalities stemming from alternative theoretical positions." (p.186); and accepting "... the strong possibility of contradictions in social systems ... " (p.210). Together these three aspects of the first version of pluralism can be captured by an ability to understand as many different rationalities as possible (in order to get closer to the whole system and to defeat contradictions (the intention of Jackson)).

The second version rather restricts pluralism, uncritically, to the domain of subjectivity: "Checkland's methodology certainly addresses pluralism ... " (p.180) though fails to consider material conditions. Pluralism here is restricted to 'different perspectives', and this is not consistent with its complementarist use on page 211: "This should be taken as more an indication of the unique contribution of the approach [CSH] than of its limitations in dealing with pluralism.". The choice of employing pluralism as subjectivity, and pluralism as complementarism as similar critiques against similarly orientated systems thinkers (see the sixth CG above) is severely limiting. Consistency must be sought within each version of pluralism (because the acceptance of different versions advocated in the first version of pluralism is sufficiently flexible for this very flexible word), and where this consistency is seen as lacking, then whole arguments can begin to crumble.

The third version is Habermasian in nature. The impossibility of universal agreement is highlighted by coercive conditions. Coercive conditions form a third category in Jackson's 'System of systems methodologies', coercive conditions exist within a plurality of systems methodologies so the impossibility of universal agreement develops as a version of pluralism.

The fourth version of pluralism exists to halt the ever-increasing complexity that pluralism brings:

> "... it is true that the construction of different VSMs of the same problem situation, showing how different purposes would work out in terms of organizational structure, could assist with the alleviation of pluralism." (p.130)

This quotation above is from the context of Espejo's (see Espejo and Harnden, 1989) work on pluralism and VSM. Jackson cites Espejo as being successful here in combating the problem of pluralism in VSM by drawing upon many different VSMs for the same situation. To offer such success from an advocate of complementarism comes across as inconsistent. Pluralism is not there to be alleviated like some technical problem, pluralism is there because we allow difference of opinion, and difference of opinion cannot be alleviated - only understood from another context that requires a synthesising of difference (and in this case this context is driven, and not critiqued, by Jackson). This notion of the alleviation of pluralism is consistent with Jackson's sole use of the linear

sequential (see Flood's notions of pluralism above) model of history throughout his text. This historical isolationism is readily
recognised by Jackson on page 205 :

> "... my account of the rise of critical systems thinking would fit into this [the linear sequential] category."

It must be heavily noted here that this fourth version of pluralism is inconsistent with the other versions. It is inconsistent because it does not respect different rationalities, and it implicitly agrees with the possibility of universal agreement.

The fifth version of pluralism comes as an attempt to halt the multiplicity of isolationism and install complementarism. This fifth version has two distinct stages, therefore. The first stage shows pluralism as isolationism, and the second stage shows pluralism as complementarism. The bringing together of these two stages is perhaps one of the biggest contradictions in Jackson's work, so let us attempt to understand this contradiction. In order to do this we must firstly separate the two stages in order to give the contradiction more meaning. The first stage accepts "... a multiplicity of approaches developing in isolation." (p.259). This form of pluralism is said to hinder the possibilities for learning and offer a continual diet of paradigm incommensurability for systems thinkers. This stage, therefore, can be called 'pluralism as incommensurability'. The second stage requires the imposition of a pattern, a pattern to encourage dialogue between these incommensurable forms of investigation. This pattern requires an understanding:

> "If we understand the different strengths and weaknesses of the various approaches and impose some sort of pattern on the variety so that the methodologies can be used as an integrated set of complementary approaches ..." (p.269)

The imposition of a pattern is required in order to reduce variety. The notions of strength and weakness are the complementarist's tools of reduction. Integration is the pattern, and paradigm commensurability is that integration. Systems thinking is a holistic thinking and, therefore, requires a general holistic approach to problem solving. This general holistic approach is complementarism. This stage, therefore, can be called 'pluralism as commensurability'.

We have two forms of pluralism in this fifth version: 'pluralism as incommensurability'(1) and 'pluralism as commensurability'(2). (1) called for the development of (2) in the interests of holism and comprehensibility between different approaches. (2) requires (1) in order to develop the possibility for (2). As (1) promotes (2), (2) promotes a form of (1) in order to sustain dialogue between the different approaches. This last sentence is, perhaps, the main contradiction: both forms of pluralism promote each other, both forms require each other in their development, as without the multiplicity generated by an isolationist approach, there cannot exist the possibility for an integrated approach. This contradiction is plausible as long as complementarism does not become imperialistic. "The imperialistic strategy assumes that one or another of the strands of management science is fundamentally superior ... [and seeks to] add strength in terms of the *favoured approach.*" (p.259, my emphasis). Relate this previous quote to the following quote : "Complementarism seeks to respect the

different strengths of the various trends ... and suggest[s] ways in which they can be *appropriately fitted* to the variety ... [and thereby] the *domain of effective application* of each approach will become established." (p.262 -263, my emphasis). Also relate these two words "... fundamentally superior ..." (p.259) and "... metatheory ..." (p.263). The first words denote imperialism, while the second word denotes complementarism. Looking at these two quotations and these two words we can offer a warning to complementarism. The first quote seeks to see everything unified through a *favoured approach*, as this *favoured* app*roach* is fundamentally superior. The second quote seeks to see everything unified through their *domain of effective application*, as this is *appropriately fitted* by a metatheory. The metatheory becomes fundamentally superior, as the metatheory becomes distinct from the theories. The metatheory must speak of a favoured approach in order to dictate the possibilities for complementarism. This interrelationship between imperialism and complementarism may continue to confuse the intentions of complementarism. In order for this confusion to be allowed the complementarist must address the notion of 'metatheory', as the fundamentally superior meaning given to this word only seeks to push further complementarist aims into imperialistic aims. We must guard against this if we wish to maintain the two forms of pluralism in this fifth version.

The sixth version of pluralism is 'pluralism as democracy'. Democracy respects strength in the people and therefore stands for equal rights for those people:

> "For only with democratic involvement can the parts be convinced that the system is serving their purposes, and that they stand to gain from its continuance." (p.120)

The parts are the people, the system (in this example) is VSM. Democracy is the necessary pluralism that can sustain VSM as politically viable. This next quote clarifies this meaning, in promoting democracy it suggests that:

> "... only then can they [the parts] be expected to accept metasystemic constraints as legitimate and use the autonomy granted to promote efficiency rather than disruption." (p.120)

We have to be extremely careful here. Pluralism as democracy comes as a metasystemic constraint. The parts are needed to work like little efficient parts and not disrupt the more important metasystemic ideals of VSM. This is possible under democracy. No, the contrary. This is the antithesis of democracy, the establishment of metasystemic constraints is given as a form of acceptance, and not as a form of possible interpretation. The cybernetic logic becomes more important than any interpretation that could disrupt proceedings, and democracy is offered as an excuse for this dominating logic. In these two quotes lies an assumption that the parts need not concern themselves with this logic, as this logic is only for the concern of metasystemic management (the shrine to democratic involvement). This last version of pluralism is abusing pluralism, in its democratic form, in order to install a logic that is thought to be superior to other logics (this superiority becomes an irrelevance with such uses of pluralism).

These six versions of pluralism have attempted to capture the spirit of pluralism in Jackson's text. This spirit is predominantly positive, though the negative aspects have also been noted, as it is only with a holistic treatment of pluralism that we are able to develop its cause more thoroughly.

CONCLUSION

This is by far the most important of the four movements in this chapter. Important in that it goes into some detail as to how the five authors can be viewed through the four epistemological levels. To relate these four epistemological levels to these five authors is to show how Systems Thinking (in the guise of these five authors) can be seen architecturally. Accordingly, this third movement offers the reader the correlativity of the Architecture (as it proceeds from Dialectical-Forms to Pluralism along the second structural side) and Systems Thinking (in the guise of the five authors).

Each author relates in a different manner to the other authors, and this is the effect of the Dialectical base operating to evidence the intelligibility of oppositional thinking within the work of each Systems Thinker. This different manner is the correlativity that we seek, enabling us to refer back to previous movements in order to inform other movements. As in the second movement,

the overall effect of the third movement cannot be understood solely within the third movement. We need to progress onto the fourth movement in order to better understand the intentions of, not only this movement, but of the previous movements. This better understanding leads us to an *enriched understanding of each Systems Thinker*.

MOVEMENT FOUR: AN ENRICHED UNDERSTANDING OF EACH SYSTEMS THINKER

INTRODUCTION

This fourth movement begins in making explicit the claims of this fifth chapter as a whole. These claims correspond to the three previous movements. We developed an initial understanding of each author in the first movement, we then considered the incidence of 'positions' or the main debates in the second movement (essentially the first structural side), and the third movement evidenced the employment of the Architecture (essentially the second structural side). These three movements come together in this fourth movement.

The initial understanding helps to orientate the reader in relating the authors to a common context: the common context of 'themes', 'favoured words/phrases', and 'Systems Definitions'. The incidence of the main debates establishes a primary common context between the authors and the Architecture: a common context of consideration of 'Margins', 'Fiction', and 'Will'. The employment of the Architecture develops a secondary common context between the authors and the Architecture: a common context of employment of Dialectical-Forms, Cross-Dialectics, Cross-Generics, and Pluralism. The notion of 'common context' is therefore central to an understanding of this fourth chapter. We need, therefore, to clarify what we mean by 'common context'. A

common context enables comparisons to be made across otherwise diverse accounts of theoretical positions. We have shown this diversity from chapter two right up to the last movement (the third) in chapter five. This diversity can be exemplified by the many debates that have been tackled by this first stage. For example, the initial debate with regard to Architecture itself. Diversity has been generated throughout this first stage. In this fourth movement, however, we begin to recognise that too much diversity leads to nothing more than chaos. It is also recognised that chaos exists without much theoretical effort. And it must be recognised that diversity is chaos in a common context, and that such a common context can be provided by this last movement in this last chapter in this first stage. The importance of this last movement, therefore, is paramount, in that this last movement offers a common context for the whole of this first stage.

This common context becomes an investigation into the prospects for commensurability. To establish a common context is to promote the possibility for commensurability. We take the Architecture as it is represented in chapter four (developed from chapters two and three) and give it five versions. Each version refers to each Systems Thinker that is investigated in this fifth chapter. The combination of the four chapters (chapters two to five) allows us to develop five versions of the Architecture. And from these five versions we are able to promote the possibility for commensurability. This possibility is accentuated when we focus upon one of the twelve cells across the five versions. The choice of this particular cell rests upon two important criteria. The first criterion calls for generality in order to further enhance the notion of 'common context'. And generality is provided by 'Pluralism' in the Architecture. The second criteria calls for the most challenging debate. We have discovered that 'Fiction' has

shown itself to be the most thought provoking debate as it questions the systems thinker's notion of reality itself. The common context, accordingly, focuses upon the 'Pluralism-Fiction' cell in the five versions of the Architecture. This act of focusing proposes that we can consider the Architecture of Critical Systems Thinking as an act of commensurability.

Accordingly this last quarter of the last chapter of this first stage is divided into two sections: The authors' Architecture; and the Architecture as commensurability. The first section arrives in five subsections, for each author. Each subsection offers a tabulation and a brief discussion of the development of the Architecture cell by cell. The second section uses these tabulations in drawing out a form to further facilitate an understanding of commensurability across the five authors. This second section thereby ends by focusing on the 'Pluralism-Fiction' cell. These two sections promote the cause for commensurability. We are able to question this cause in the second stage: the Acuity of Critical Systems Thinking.

5.4.1 THE AUTHOR'S ARCHITECTURE

Five tabulations are given for five authors. Their development from the previous movements in this fifth chapter is shown and a brief explanation of each of the cells within the Architecture is given.

Table 5.5 Beer's Architecture

Beer's Debates Beer's levels	Margins	Fiction	Will
Dialectical -Forms	- Analysis/ Synthesis (problem/ solution) 1	- Power/Viability (emphasis on fiction in viability) 2	- Power/Viability (emphasis on power) 3
Cross- Dialectics	- CD of Stereo- typification (language propositions) 4	CD of S (Stereotypes as fiction) 5	- CD of S (will to power of *Homo Faber*) 6
Cross- Generics	- Literature/ Management (innovation) 7	- Literature/ Management (use of) 8	- Literature/ Management (personal) 9
Pluralism	- To see beyond artificial classifications (marginal classifications) 10	- To see beyond... (artificial fiction) 11	- To see beyond... (beyond will to power) 12

5.4.1.1 Beer's Architecture

Beer's Architecture is a combination of Beer's main debates and Beer's epistemological levels, a combination that directly applies the epistemological levels to the three main positions or debates. The question is asked: 'Which of Beer's levels (from Dialectical-Forms to Pluralism) relates most clearly to Beer's debates (from Margins to Will)?' It must be made clear here that in each level and in each debate there exists a choice for Beer's Architecture. A choice that

must be guided by the content of the Architecture as given in the fourth chapter. The levels are contextualised, the levels are given a meaning through the three debates.

The cells run from Dialectical-Forms - Margins (number one) to Pluralism - Will (number twelve). Cell one shows the analysis/synthesis DF. The marginal qualities of this DF are highlighted by the problem/solution DF in that Beer's Cybernetics wishes to question traditional 'analysis' and replace it with a more systemic 'synthesis'. The problem is shown, and a solution is proposed. The solution can be seen as marginalised from the traditional 'analysis'.

Cell two shows the power/viability cell. A cell that recognises the need for creativity in describing viable systems. As Beer notes, we are not determining absolute facts, but we are establishing descriptions of viable systems (1990, p.2). Descriptions that realise their constant debt to human creativity, the creativity that seeks viability through fictional devices.

Cell three shows the power/viability cell. A cell that recognises that human forces relate to unpredictability, and that this power of unpredictability is able to undermine viability. Solutions founded on human factors (as compared with viability factors) correlate with poor management. This cell emphasises the other side of the previous cell.

Cell four shows the CD of Stereotpyification. Stereotypification is an ability to marginalise discourses that challenge the accepted norms. Beer's emphasis upon this process shows his willingness to open up otherwise margi-

nalised discourses.

Cell five shows the CD of Stereotypification with an emphasis upon the fictional nature of stereotypes. Stereotypes rest upon a simplified reality, a cognitive dissonance that shows reality to exist as an ever reducing Weltanschauung. Such a Weltanschauung is fictional as it fails to respond to realistic complexities (which these two definitions of fiction (creative fiction (positive) and unrealistic fiction (negative)) do not fail to do).

Cell six shows the CD of Stereotypification with an emphasis upon the power relationships that call for such reductive measures as discussed directly above. Power relationships that need to control complexity, controlling by installing one view of reality, a stereotpyification of reality.

Cell seven shows the CG of Literature and Management with an emphasis upon Beer's innovative qualities. Beer's use of narrative is an example of a marginalised discourse (that of 'fiction' being employed in a management science text) being used. The form of such a discourse is uncommon, and its intentions are not clearly spelt out as they are in the core text.

Cell eight shows the CG of Literature and Management with an emphasis upon the use of fiction in Beer's work. In *Platform for Change* Beer uses a grouping of words to show that we need to change the manner in which we think, in which we process, in which we organise our methods of thought and problem

solving. Such grouping becomes 'poetical' and shows Beer's fictional intentions (used in the positive, creative sense here) within the more technically orientated discipline of Management science.

Cell nine shows the CG of Literature and Management with an emphasis upon the obvious will to power within *Homo Faber*. Homo Faber is the man of construction, who constructs in an ethical guise consisting of 'all construction is good'. Play becomes marginalised through the exercise of the Homo Faber's will to power. A will to power that worships efficiency through technicalised construction.

Cell ten shows the Pluralism of being able to see beyond artificial constructions in the marginal guise. Marginalised classifications will promote the separation of disciplines, showing that communication is unlikely or impossible. Economics marginalises psychology, mathematics marginalises anthropology: Beer's cybernetics shows these classifications as repressive marginalisations that hinder the management process (1990, p.x).

Cell eleven shows the Pluralism of being able to see beyond artificial constructions in the fictional guise. Man is organised through the means that show viability, which exists in all subjects, and viability exists in relating subjects together. Viability becomes more important than the 'fiction' (used here in its negative sense) that upholds artificial classifications. Viability becomes the creation (fiction here to be used in its positive sense) that sustains organisations (be they economical or psychological).

Cell twelve shows the Pluralism of being able to see beyond artificial classifications in the recognition of will to power. Will to power is an explanation of the tendencies within these subjects to marginalise 'other' subjects that look potentially dangerous (for example, the danger of psychological investigation within a positivistic economics). Will to power attacks the weaknesses of the potentially dangerous while being more conscious of its strengths.

These twelve cells make up the Architecture of Beer, and they will constitute one aspect of the Architecture as commensurability in the following section.

Table 5.6 Checkland's Architecture

Checkland's Debates: Checkland's levels	Margins	Fiction	Will
Dialectical -Forms	- Positivism/ Phenomenology (introduction of latter to systems science) 1.	- Innate/ Experience (the fiction of being beyond experience) 2	- Purposeful/ Natural (will as purpose) 3
Cross-Dialectics	- SSM development (challenging core) 4	- Social analysis (fiction as 'role playing' in organisations) 5	- SSM development (SSM considers will (as free)) 6
Cross-Generics	- Soft/Other systems thinking 7	- Management science/ socio-logical and political (heteroglossia) 8	- Hybrid science (will to power) 9
Pluralism	- Pluralistic process (from other margins) 10	- Pluralistic process (emphasis on Weltan-schauung) 11	- Meta-discipline (will to power) 12

5.4.1.2 Checkland's Architecture

The Architecture of Checkland is a combination of the main debates or positions and the epistemological levels. The epistemological levels are seen within the context of the three main debates. The following question is asked which will constitute the Architecture: 'Which of Checkland's epistemological

levels (from Dialectical-Forms to Pluralism) relates most clearly to the three main debates (from Margins to Will)? ' In effect we are looking at tables 5.2 and 5.3. We choose the most appropriate debates from 5.2 and relate them to the most appropriate levels in 5.3. The levels are then contextualised and given meaning through the three debates.

Following the same pattern of cell numbering as above, cell one shows the Positivism/Phenomenology DF. Here Checkland evidences his willingness to deal with the marginalised discourse of Phenomenology within a predominantly Positivistic discipline. The positivistic discipline is systems science (called Hard systems thinking by Checkland), and the marginalised discourse becomes soft systems thinking.

Cell two shows the Innate/Experience DF. The fiction (negative sense) of being beyond experience, in the case of the innate genetic inheritance (1990,p.20), is shown in opposition to experience. The notion of experience is restricted here to immediate experience, and bears no relation to past, historical, or potential experience. Checkland's DF in this case falls into the trap of the negative dimension of fiction in its inability to show the complexities of realistically bound experience.

Cell three shows the Purposeful/Natural DF. The human agent, as a purposeful agent, as an agent of will to power is recognised here by Checkland (albeit in a limited sense, see cell six). We are shown that the human purpose is to improve problematical situations, and the potential for an exploitive will to

power is clear. Will to power will stereotypify the conditions for improvement, it will single out one purpose, one purpose that continues the supremacy of the will to power.

Cell four shows the CD of SSM development. The Natural science core of systems science is challenged here by Checkland by the marginalised Social science. The challenged is in three dimensions: purposive/purposeful; Hard systems thinking/Soft systems thinking; Natural science/Social science. The left hand side of these three DFs shows the natural science side, and the right hand side the social science side.

Cell five shows the CD of social analysis. The values, norms, and roles within the organisational are challenged by oppositionary good/bad, expected/unexpected, and institutional/behavioural (relatively). The fiction of these values, norms, and roles therefore is either questioned or re-established according to the orientation of the Soft systems analysis. Fiction is created or shown to be a false creation in these three forms: values, norms, and roles.

Cell six shows the CD of SSM development. In this development the will within the agents is shown to be 'free'. In the unleashing of phenomenology within systems thinking, the will of the systems thinker is shown to be (capable at least as a long term aim) free. Free from positivistic determinations. However, will to power does not allow this. Will to power must have a construction which is continually constructed upon, strengthened, and made ever more efficient. The will to power does not allow the will to be free, as the will must always refer to some previous and future meaning.

Cell seven shows the CG of Soft and other systems thinking. The marginalised discourse of Soft systems thinking within the larger context of systems thinking becomes a battle between classifications, the marginalised soft seeks to challenge the supremacy of the core 'other' systems thinking. The soft challenges the manner in which the other is classified, what makes it a distinct classification.

Cell eight shows the CG of Management science and the sociological and political sciences. A heteroglossia (see section 4.8 in chapter four) needs to be proposed here. Systems thinking needs to show an ability to allow sociology, management science, and political science to speak in similar contexts. That context is the 'problematical situation'. One person (the systems thinker) speaks using the vocabulary, expressions, theoretical assumptions, methodological principles of the three (sociology, management science, political science) generical-forms. SSM must propose this in order to maintain consistency within Checkland's Architecture.

Cell nine shows the CG of Hybrid science. The will to power that Checkland admits to (though calls free will in open discussion) through the 'meta-disciplinary' status of systems science is used to call for a scale of 'systems complexity' which enables a measuring (a positivistic dimension) of the gaps between Boulding's hierarchy of real-world complexity (1988, p.104-106). The will to power resides as a 'meta' offering showing that measurement is the way to further increase this will to power.

Cell ten shows Pluralism as the pluralistic process. Different Weltanschauungen (in the Churchmanian sense) direct different classifications of

information. Marginalised Weltanschauungen are allowed to consider core classifications. The endless repetition of the Churchmanian dialectic shows the endless ability for the marginalised to be considered alongside the core in this pluralistic process.

Cell eleven shows Pluralism as the Pluralistic process emphasising the fictional content of the Weltanschauungen. Fictional because of the inevitable incompatibility between the core classifications and the marginalised Weltanschauungen. This incompatibility spells the existence of fiction in its negative sense. The core establishing a fiction in order to marginalise the (potentially dangerous) Weltanschauungen. This fiction can be explained only by the marginalised Weltanschauungen, since the marginalised Weltanschauungen experience it.

Cell twelve shows Pluralism as a Meta-discipline (see cell nine also). Checkland's recognition of the existence of a systems orientation in many different disciplines confirms, for him, the meta-disciplinary status of systems thinking. The call here is for a means to control other disciplines, in order to organise knowledge around the concept of system. Such desire to organise comes from the will to power. The will to power realises the potential of 'system' is application, and its general functionalist utility. This will to power is encouraged by Checkland.

These twelve cells together form the Architecture of Checkland. This will be further used in the following section of this chapter.

Table 5.7 Flood's Architecture

Flood's Debates Flood's levels	Margins	Fiction	Will
Dialectical -Forms	- Knowledge/ Interest (to question resolution) 1	- Foundationalism AntiFoundation-alism (AntiFound -ationalism as fiction based) 2	- Complement-arism/ Isolationism (will to manage) 3
Cross- Dialectics	- Systems thinking (development of critical) 4	- Systems thinking (creation of critical) 5	- Six scenarios (will based) 6
Cross- Generics	- GST/ Suppressive ideologies (GST as marginalised) 7	- Systems thinking/ social theory (views on truth) 8	- GST/ Suppressive Ideologies (suppressive will) 9
Pluralism	- Impossibility of singular history (development of Genealogy) 10	- Impossibility of singular history (fictions as historical) 11	- Plurality to be matched (to control variety) 12

5.4.1.3 Flood's Architecture

The Architecture of Flood is a combination of the epistemological levels and the Three main debates. The epistemological levels are given three contexts by the three debates. The question is suggested that will help to constitute the Architecture of Flood: 'Which of Flood's epistemological levels (from Dialectical-Forms to Pluralism) best relates to the main positions or debates (from Margins to Will)? ' The levels are then applied to the contexts of the three main

debates.

The cells are numbered from one to twelve as before. Cell one shows the DF of Knowledge and Interest. Flood, following Habermas, seeks resolution of this DF in the interest of self-reflection. A self-reflection that promotes the emancipatory interest, an emancipatory interest that "... reconstructs what has been suppressed." (Habermas, 1971, p.315). Such reconstruction adheres to the marginal theme as discussed in this discourse.

Cell two shows the DF of Foundationalism and Anti-Foundationalism. The fictional context proves itself by exposing the notion of shared truths. Anti-Foundationalism argues for the notion of shared truths which are dependent upon inter-subjective histories, all truths are historically contingent. Flood recognises this and attempts to synthesise Foundationalism and Anti-Foundationalism with the works of Foucault and Habermas. Such synthesis would be historically contingent argue the Anti-Foundationalists, while the Foundationalists would see this attempt as an uncovering of an *apriori* truth. Either way, such a synthesis would quieten such debate, and therefore such synthesis must be questioned from within the fictional context.

Cell three shows the DF of Complementarism and Isolationalism. The will to power surfaces in the complementarist desire to position itself at a higher level than the isolationist position of the past (Flood, 1990a, p.27). Complementarism wishes to control these isolated disciplines, and the will to power promotes this, and it is the will to power in this context that needs to be studied with reference to the desire for complementarism.

Cell four shows the CD of Systems thinking. The development of the critical strand of Systems Thinking has consistently shown itself to be interested and motivated by uncovering marginal discourses (see for example, Midgley, 1991, Charlton, 1991), marginal discourses that question the relevance of the hard and soft strands of systems thinking to contemporary problematics (such as organisational decision making, organisational goals, and coercive situations).

Cell five shows the CD of Systems thinking with reference to the creation of Critical Systems Thinking. Critical Systems Thinking was created (see Jackson 1991) as a response to the inabilities of Hard and Soft systems thinking. The main inability being the management of coercive situations. With the creation of an enlightened and critical systems approach certain systems thinkers have responded to the need to create fictional contexts, fictional contexts of balanced decision making and equal rights within the organisation. Fictional contexts as workable ideals, as realistic creations. Fictional contexts that respond to a plurality of Dialectical-Forms within this CD.

Cell six shows the CD of the six scenarios. The six scenarios are will based, as already suggested in cell three. Will to power becomes enacted through the desire to combat the arguments of isolationists, pragmatists, and imperialists. Will to power shows the weaknesses of all these three approaches. As the will to power promotes the resolution of theoretical contradictions, as will to power develops from within one discipline, and that discipline seeks resolution. Six scenarios are promoted by this will to power because it rests upon a desire for resolution of theoretical contradictions.

Cell seven shows the CG of General Systems Thinking and Suppressive Ideologies. The classification of suppressive ideologies relates uniquely to the suppression of GST as a viable framework for systems thinking. GST in this capacity is seen as a marginalised discourse, and Flood searches for examples of the suppressive ideologies that have succeeded in its marginalisation.

Cell eight shows the CG of Systems thinking and Social theory. Flood's call for a realignment of systems thinking by developing views on truth and meaning is a response to the fictional context. The plurality of truths, respected by Flood, is a plurality of fictions. Fictions that are created to document and narrate histories. The development of views on truth shows that more than one view on truth must be tolerated, and this shows an empathy toward the fictional context of truths. The fictional context of truths shows the systems thinker that truth is a creation that wishes preservation and protection, and the more successfully such a creation is protected and preserved the more successful will be its claim to truth-hood. The movement toward protection is contrary to the creative movement. Flood respects this creative movement and exemplifies such protective movements as linear sequential, thereby emphasising their positivistic nature.

Cell nine shows the CG of GST and Suppressive Ideologies. Where in the marginal discourse the marginalised nature of GST is investigated, here the will to power that motivates this act of suppression is investigated. This act of suppression considered GST (amongst other considerations) as a totalising rationale, and therefore a rationale to be guarded against. In fact, the suppressive ideologies show themselves to be totalising in their response to GST as a forum

for Cross-Generical discussion. The isolationist thinking of these suppressive ideologies leads them to marginalise any attempt to question such forms of isolation.

Cell ten shows the Pluralism of the impossibility of a singular history. Flood's development of a Genealogical study within systems science initiates the liberation of certain suppressed dialogues and discourses (the GST suppression for example). This pluralistic act supports the margins debate and seeks to reveal marginalised discourses.

Cell eleven shows the Pluralism of the impossibility of a singular history within the fictional context. We have already discussed the toleration of fictional histories in Flood's work (see above and movements two and three), and here we are able to refer to fiction within a clear pluralistic history. Flood's four main approaches to historical investigation (linear sequential; structuralism; world-viewism; and genealogy. See Flood, 1990a, p.113-119) must be related to the fictional conception of history. This conception has been advanced in the previous movement and the fourth chapter, it consists of a direct relationship between Foucault's methodological principles and Rushdie's historiographical metafiction. It is suggested that fictional accounts of history allow for narration to be taken as a serious influence on what is being narrated. Fiction as a pluralistic device shows and promotes pluralistic historical investigations, as history is what we know now about a fictional past that can never be separated from us; that is if we are to take seriously the study of history. Such serious considerations require a pluralistic framework, and fiction offers such a potential framework (the second stage of this thesis will develop this potential).

Cell twelve shows the Pluralism of Plurality to be matched. A plurality of 'intended meanings' within systems thinking calls for a plurality of research initiatives (Flood, 1990a, p.14). These initiatives will help to maintain the integrity of systems thinking and in this capacity the driving force is shown to be will to power. The results of these research initiatives may call for disintegration in order to truly investigate the plurality of intended meanings, since this may be seen as more responsive to the problems faced. However, if the unitary requirements outweigh the requirements for responsiveness (in the sense of being prepared to disintegrate in order to respond to the problematic being faced), then will to power is evidently at play.

This brief explanation of these twelve cells can and indeed must be read with an understanding of the development of this Architecture from the previous three movements in this chapter. There is, however, sufficient information within this brief synopsis to continue our investigation of commensurability into the following section.

Table 5.8 Flood and Jackson's Architecture

Flood and Jackson's Debates: Flood and Jackson's levels	Margins	Fiction	Will
Dialectical -Forms	- Simple Coercive/ Complex Coercive (liberation from coercion) 1	- Simple Pluralist/ Complex Pluralist (pluralist fictions) 2	- Simple Unitary/ Complex Unitary (will to unify) 3
Cross-Dialectics	- System of Systems Methodology (liberation from coercion) 4	- System of Systems Methodology (pluralist fictions) 5	- System of Systems Methodology (will to unify) 6
Cross-Generics	- Philosophy/ Systems Science (marginal discourse) 7	- TQM/Systems Science (fictional content of TQM) 8	- Philosophy/ Systems Science (will to power) 9
Pluralism	Different versions (alternative visions) 10	- Complementarism (respect alternative positions) 11	- Complementarism (*appropriate* theoretical positions) 12

5.4.1.4 Flood and Jackson's Architecture

The Architecture of Flood and Jackson is a combination of the epistemological levels and the three main debates. The epistemological levels must respond to the three main debates in order to constitute an Architecture. The constitution of

this Architecture must respond to this question: 'Which of Flood and Jackson's epistemological levels (from Dialectical-Forms to Pluralism) best responds to the three main debates (from Margins to Will)? ' The levels are then applied to the contexts of the three main debates.

The cells are numbered from one to twelve. Cell one shows the Simple coercive/Complex coercive DF. This DF respects marginal discourse in its attempts to firstly recognise the incidence of coercive factors, and secondly in its efforts to organise an approach in order to tackle coercive situations. And here we recognise that coercion exists to marginalise 'potentially dangerous discourses', therefore an approach geared towards coercion is an approach geared towards marginal discourses. This attempt is an attempt to liberate those within the coercive situation from such a situation.

Cell two shows the Simple pluralist/Complex pluralist DF. This DF treats the pluralism of interpretations as if they were fictions. To treat them as fictions is to accept their inevitable restrictions concerning comprehensiveness and validity. All interpretations lack validity if considered solely on their own terms. On their own terms they exist as mere fictions, fictions created by interested parties and motivated theorists, fictions that promote one outcome at the expense of another outcome. To create an Organised DF offers the potential for 'restricted fictions' to be questioned by other 'restricted fictions', and such debates can offer less restricted fictions. In effect, this offers some hope for fictions to be related together to create more realistic fictions.

Cell three shows the Simple Unitary/Complex Unitary DF. This DF completes the *System of Systems Methodologies* (along the DFs of the first main debate) and shows the potential for the exploitation of the will to power in systems thinking. This potential figures to unify, to unify against the wishes (whether expressed or otherwise) of those involved or those who witness the actions of those involved. This will to unify is seen as coercive, and seen as an example of the technical interest within TSI. This will must be seen through an emancipatory interest in order to unify knowledge with interest.

Cell four shows the CD of the System of Systems methodologies as liberation from coercion. The marginal debate would concentrate upon this act of liberation and accentuate the coercive situations over the pluralistic and unitary situations. This act responds to the Margins debate.

Cell five shows the CD of the System of Systems methodology as pluralist fiction. The incidence of fiction within this CD is best seen when the pluralistic (see previous movement in this chapter) dimension is concentrated upon. This concentration is likely to draw out 'fictions' as incomprehensible statements and unvalidated assertions. As fictions see the creation of 'means to validate truths' as yet another fiction, then the whole dimension within this CD offers much for the fictions debate.

Cell six shows the CD of the System of Systems Methodologies as an identifier of will to unify. The unitary situation seeks to unify, to cover up coercive

dialogue and instructions. This cell would show the incidence of will to power in its recognition of coercive dialogue and instructions parading as an 'organisational culture as unification'.

Cell seven shows the CG of Philosophy and Systems science. This CG shows the authors' attempts to apply a marginal discourse to a core discipline. The core discipline here is systems science (though it could be philosophy, however, the purpose of this whole thesis is to investigate the current situation of systems science and not of philosophy, therefore, for the purposes of this thesis the core must be seen as systems science) and its marginalised discourse is philosophy. The authors' attempts to introduce the marginalised discourse of philosophy within systems science shows a recognition of the need for a grand vision that can direct systems science. This grand vision is emancipation. And it can be shown that systems thinkers denigrate such a vision (see Jackson, 1991, for examples).

Cell eight shows the CG of TQM and Systems Science. This CG sets itself an aim to uncover the fictional content of TQM by applying it to systems science. The metaphorical analysis given in TSI of TQM is a beginning. However, a more thorough fictional analysis is required. For example, the fictional notions (here used in its negative sense) of 'improve quality' or 'set goals'. It must be accepted that TQM creates its own notions of 'quality' and its own 'goals', and that these notions do not exist in any real sense, as these notions change as people interact; interact to achieve 'goals' that change as soon as the goal is recognised, and change as soon as 'assessment figures' are 'realised'. Care is needed with TQM with regard to such positive appellations, as a fictional analysis would prove.

Cell nine shows the CG of Philosophy and Systems science in its will to power guise. Philosophy is considered as being a more 'far-sighted' discipline than systems science according to the authors. In this sense a more powerful discipline, in its ability to predict (with respect to the slower mechanisms of systems science in its non-philosophical form) possible short comings of systems science. This ability is driven by the will to power, as the will to power continually seeks ways to dominate and control forces that cannot be seen by others. The development of a more philosophically orientated systems science is, therefore, an explicit incidence of a will to power.

Cell ten shows the Pluralism of different versions. A pluralism that respects alternative philosophies, and in doing so respects those discourses that have been marginalised.

Cell eleven shows the Pluralism of Complementarism. A pluralism that considers the fictional content of alternative interpretations of one event. As soon as that event is past (and this is happening every time time is made into a conscious entity) it becomes a piece of fiction, ready for a willing interpreter to pick up the details and offer an interpretation of that event. No validation is ever possible, since that event can never be returned to, and if it could no validation would be necessary. This is pluralistic-fiction with reference to TSI.

Cell twelve shows the Pluralism of Complementarism in its will to power guise. Appropriate theoretical positions cohere with methodological orientation. The level of *appropriateness* is determined by the logic of TSI. A logic that wishes to organise theory with methodology, and to determine theory if no theory

exists. This logic wills to power the theory alongside the methodology, to unify the two levels within the systems science context. Appropriate (theoretical positions) to whom would be restricted if will to power is seen as being effective in this context.

These twelve cells constitute the Architecture of Flood and Jackson and enable an Architecture as commensurability to be enacted in the following section.

Table 5.9 Jackson's Architecture

Jackson's Debates / Jackson's levels	Margins	Fiction	Will
Dialectical -Forms	- Systems Rationality/ Social Rationality (incorporation of witnesses) 1	- Modernism/ Postmodernism (cf. 4.5) 2	- Alienated labour/ Distorted Communication (will to distort) 3
Cross-Dialectics	- Harmonisation of people and systems (people as marginalised) 4	- Harmonisation of subjectivity and objectivity (fiction of objectivity) 5	- Harmonisation of people and systems (will to power) 6
Cross-Generics	- Psychoanalysis/ Social theory (liberation of subject) 7	- Modernism/ Postmodernism (clarification, cf. 4.5) 8	- Social science/ Systems science (desire to control social elements) 9
Pluralism	- Different Rationalties (margins heard) 10	- Subjectivism (as fictions) 11	- Alleviation (will to control) 12

5.4.1.5 Jackson's Architecture

The Architecture of Jackson is a combination of the epistemological levels and three main debates. The constitution of the Architecture is arrived at once the epistemological levels respond to the contexts developed by the three main debates. Such a response is initiated by this question: 'Which of Jackson's

epistemological levels (from Dialectical-Forms to Pluralism) relates most succinctly to the three main debates (from Margins to Will)?' The levels can then be applied to the three debates, and Jackson's Architecture is the result.

Cells are numbered from one to twelve as above. Cell one shows the Systems rationality/Social rationality DF. This DF comes from Ulrich's Critical Systems Heuristics, and the manner in which Jackson employs this idea within his text shows an appreciation of its emancipatory interest, an interest that wishes to incorporate the social rationality of the witnesses within the decision making of the systems rationality of the involved. Such an incorporation respects the Margins debate, and uses the epistemological level at the Dialectical-Forms.

Cell two shows the Modernism/Postmodernism DF. This DF encourages a debate between 'those that seek Grand narratives' and 'those that seek contingencies'. The Grand narrative of 'emancipation' and the 'unification of systems science' show to the reader the modernist outlook of Jackson. The Lyotardian critique of Jackson's position would posit an overt emphasis upon the reactive forces within his thought. Reactive forces that reduce all knowledge to representation, representation that has been commodified for utilitarian purposes (see Deleuze and Guattari, 1983). The utilitarian purpose in this case is the unification of systems science. Unity spells the reduction of 'difference', the difference that is active, the difference that must be studied in the spirit in which it was created. The Dialectical opposition working within the Modernism/Postmodernism DF shows that the postmodernist active must be controlled by the modernist re-active; the forces of dissensus must be made consensual.

The fictional relevance is shown with the forces of dissensus, as fiction respects these forces. Therefore, we can see that the postmodernist position is more likely to respect the fictions debate.

Cell three shows the Alienated labour / Distorted communication DF. Jackson's interest within this DF is to challenge the forces that distort in both cases: distorting the relationship that labour has with nature (as the means to production); and distorting the relationship that man has with man (as the means to communicate). This DF shows the opposition between the historical-materialism of Marx, and the ideal speech situation of Habermas respectively. The first Form concerns man's (the subject) relationship with nature (the object). The second form concerns man's (the subject) relation with man (the subject). The first Form seeks an objective 'truth', a truth that reveals 'false consciousness'. The second Form seeks an inter-subjective 'truth', a truth that reveals distorted communication. Man's will to distort in both cases becomes the area of interest of immediate concern for Jackson, this is as a response to the Will debate.

Cell four shows the Harmonisation of people and systems CD. This CD sees people as marginalised by the force of over-technical systems. To re-address this marginalisation we need to create the conditions for harmonisation between that which marginalises and that which is marginalised. Jackson's employment of Habermas's Knowledge-constitutive interests is an attempt at such a harmonisation.

Cell five shows the Harmonisation of subjectivity and objectivity CD. This CD reinforces the efforts of the CD of cell four in that the general terms

'objectivity' and 'subjectivity' are considered as being means to classify the categories of 'people' and 'system'. People relate to the more subjective side, while system relates to the more objective side. In this cell the fiction of objectivity is to be shown, because any harmonisation of subjectivity and objectivity needs to lessen the dominating force that objectivity has over subjectivity. A lessening of this force can be offered within the fictions debate.

Cell six shows the harmonisation of people and systems CD with reference to will to power. The activity of will to power creates systems that can destroy the uniqueness of human subjects. However, this CD also recognises that this will to power is necessarily generated by human subjects, more specifically that this will to power can be seen as unique within each human subject. With a situation of self-destruction therefore, the complexities of this CD offer a realisation of this human capability and systems can be created that respond to its activity (examples of such systems include Foucault's Genealogy that sees the human as an extension of discourse and not discourse as an extension of the human).

Cell seven shows the Psychoanalysis and Social theory CG. This CG liberates the human subject from constraining social conditions. It is able to do this by challenging social conditions by entering into an equal dialogue with the subject that realises the forces that constrain him/her. The notion of an equal dialogue is important here, as equality is seen as lacking in social conditions, and the psychoanalytic generical-form can offer the initial conditions for a

re-dressing of the forces that create inequalities. Jackson promotes such a CG, and within the Margins debate shows an active responsibility toward marginalised subjects.

Cell eight shows the Modernism/Postmodernism CG. This CG tackles a more complex series of issues than cell two, in that it assumes the oppositional thinking of the previous DF, but also assumes the complexities of the previous CDs. These two assumptions allow this consideration of the Modernism/Postmodernism issue to be targeted at the classifications that distinguish one from the other. For example, Modernism can be classified as 'epistemologically dominant' and Postmodernism as 'ontologically dominant'. Epistemological dominance leads to theoretical consensus, as theory acts and reacts with theory unable to question reality outside of epistemological considerations, the real is seen as essentially stable. Ontological dominance leads to theoretical dissensus, as the real is not seen as essentially stable, questions are continually asked: which world is this? What is a world? (McGrath, 1987). The ontological dominance supports the fictions debate in its concentration upon fictional worlds as possibilities (as a possible response to which world is this?).

Cell nine shows the Social science / Systems science CG. This CG is interested in using social science to help the cause of systems science. The cause, overwhelmingly throughout Jackson's work, is a creation of the conditions for emancipation. These conditions require the theoretical maturity of social science (in opposition to the practical opposition of systems science). Practice as action

can however dominate through will to power. It is vital, therefore, that the theoretical aspirations of systems science do not turn into a practical, active dominance fuelled by will to power.

Cell ten shows the Pluralism of different rationalities. Marginal discourses are heard simply through the concept of 'difference'. If this concept is respected in Jackson's texts (and most indications are positive) then Pluralism in its Margins context can be promoted. 'Difference' does not reduce into unifying discourses, it allows opposing discourses to be heard in their own environments, and for the discourse as well as the environment to be taken into consideration (for example, in order to respect the difference with regard to advocates of commensurability and advocates of incommensurability, we must recognise their respective environments as elements of 'difference' between the two discourses (this necessarily becomes a major feature of the second stage, the Acuity of Critical Systems Thinking)).

Cell eleven shows the Pluralism of subjectivism. The fiction of subjectivism refers to Checkland's understanding of pluralism (Jackson, 1991, p.180). Jackson restricts Pluralism to subjectivism in his analysis of Checkland. This pluralism becomes fictional as it fails to consider material conditions (in Jackson's words) and as it fails to respond to pluralism as complementarism (Jackson's words referring to Ulrich's *Critical Systems Heuristics*, 1991, p.211). Fiction as an inability to consider material conditions and Fiction in the way in which pluralism itself is used in two different contexts to critique in two different ways. Pluralism becomes fictional in the first case as it fails to respond to the 'real' (material) conditions. A failure to respond to the 'real' makes any discourse fictional by

nature: Checkland's discourse is shown as being fictional. Pluralism in the second case becomes fictional as it takes on two different meanings in two different contexts. For pluralism to change (unannounced by Jackson) according to the context is for pluralism to confuse signified for signifier. The signified is the SSM of Checkland, and the CSH of Ulrich. The signifier is the meaning of pluralism. The signified determines the signifier, and thereby the meaning of pluralism becomes a fiction, as it loses meaning (in the negative sense of fiction).

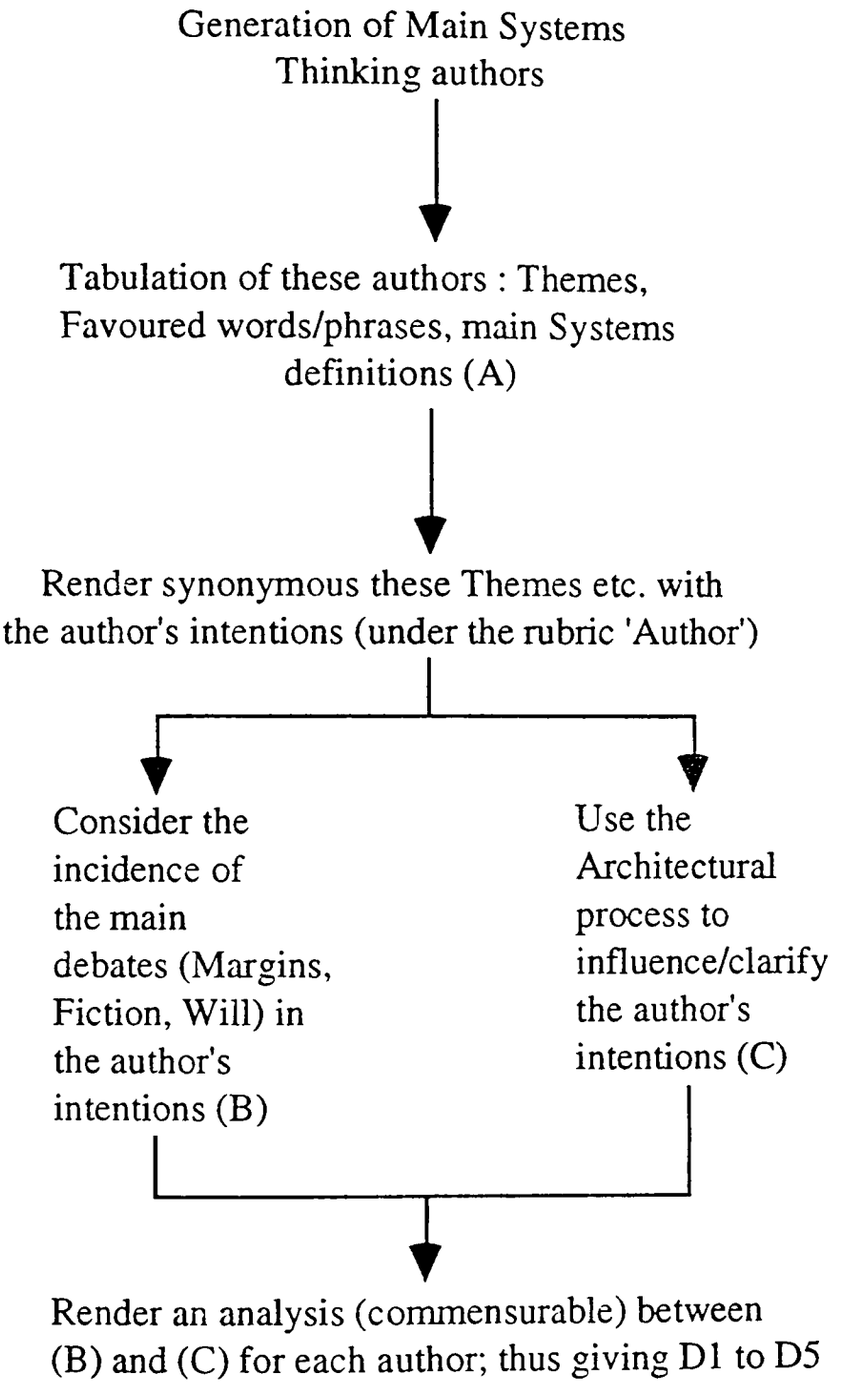
Cell twelve shows the Pluralism of alleviation. Jackson wishes to alleviate pluralism, in order to control the ever increasing complexity that pluralism brings. Reference in Jackson's text is made here to Beer's VSM (p.130). The construction of different VSMs may help to alleviate pluralism. Pluralism in its will to power context is very clear here. Pluralism is that 'creature' that if left will become uncontrollable. Therefore, we must seek to control now, to alleviate pluralism. Will to power recognises this problem and acts to alleviate.

These twelve cells constitute the Architecture of Jackson. They must be read with a thorough understanding of the three other movements in this fifth chapter. Armed with an understanding of this section of the fourth movement we are able to proceed onto the Architecture as commensurability, the next section in this fourth movement.

5.4.2 ARCHITECTURE AS COMMENSURABILITY

After an extensive development of an Architecture for Critical Systems Thinking we are able to witness a small contribution to the general concerns of the systems movement (taken from an explicit Critical Systems perspective, though using authors from a spectrum of Systems thinking: Beer as predomiantly an Organisational Cybernetician; Checkland as predomiantly a Soft Systems Thinker; Flood, Flood and Jackson, and Jackson as predominantly Critical Systems Thinkers). But, of course, in order to witness such a contribution, we must be explicit about the interests of such a movement. The interests of a movement can best be examined with a commensurable analysis of the claims and counter-claims of the authors (the main authors) in Systems Thinking. These claims show themselves most markedly in the 'Themes' and 'Favoured words/phrases' (as evidenced in the first movement **(A)** of this fifth chapter). The claims are then made the substance of each author's intentions and must become synonymous with each author's intentions. This is not to restrict the flexibility (of interpretation) of each author, but the contrary, to enable a fluidity of interpretation to be re-enacted through the main debates (as evidenced in the second movement **(B)** of this fifth chapter) and the Architectural process of Dialectical-Forms through to Pluralism (as evidenced in the third movement **(C)** of this fifth chapter). The claims of the whole of this fifth chapter, can, therefore best be shown diagrammatically:

Figure 5.12 The claims of the fifth chapter

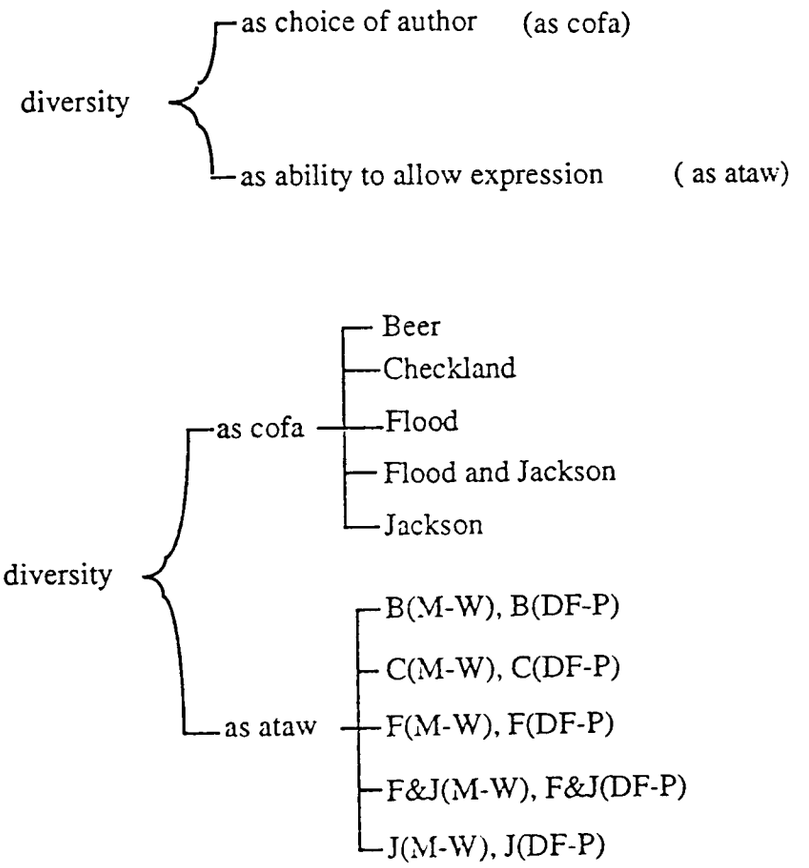


The aim of this fifth section is to generate an analysis for each author, where a comparison is instigated for each author around the resultant tabulations **(B)** and **(C)**. The author is still synonymous with the author's intentions in **(A)**, but is now implicated in the tabulations **(B)** and **(C)**. The uncomplicated use of the author in **(B)** and **(C)** requires some form of commensurable analysis. Such a form must focus upon one author at a time, with the aim of giving a direct comparison with the tabulations in Chapter four. The issues and the processes (the incidence as re-active, and the use as pro-active) of each author generate an interesting spectacle alongside the tabulations in chapter four.

The main thrust, however, in this analysis of the intentions of each author (through an understanding of the 'main debates' and the 'Architectural process') is an investigation into the possible and necessary framework for an investigation of commensurability: under what conditions is commensurability (in this case, the Systems Thinking case) possible? That is, commensurability across the 'Generation of Main Systems Thinking authors'. It is extremely important here that each author should be chosen within a general interest for diversity (diversity of claims, as well as diversity of instrumentation (by this what is meant is that the authors considered and their consideration of other authors, as an example Checkland's use of Habermas and Jackson's use of Habermas, share similar instrumentation at one level (use of Habermas in order to support their cause of developing systems thinking), but at another level (that of their interpretation) their instrumentation differs quite radically (Checkland using Habermas to show the emancipatory possibilities of Soft Systems Thinking. Jackson using Habermas in order (amongst other things) to offer a critique of Systems Thinking (including Checkland's use of Habermas)))), and also that this diversity should

be able to 'speak' (to show itself). By 'being able to speak' I take the Heideggerian (1954) notion of listening to the words, letting the words speak. This diversity should be able to speak. It is able to speak in two occasions, firstly in the consideration of the main debates (tabulated in section **(B)**), secondly through an opening given by the Architectural process (as tabulated in section **(C)**). These two occasions giving these two notions of diversity, which then allow us to consider the problematics of commensurability across the five authors:

Figure 5.13 Diversity



Key

B: Beer
C: Checkland
F: Flood
F&J: Flood and Jackson
J: Jackson

M-W: Margins to Will
DF-P: Dialectical-Forms to Pluralism

The two main things that commensurability requires are 'a means to be commensurable' and 'an interest to be commensurable'. The means are given in the stages of tabulation **(B)** and **(C)** and the interest is stimulated by the generation of the authors' intentions **(A)**. In this way we witness that commensurability requires diversity (as diversity is given as 'cofa' and 'ataw'). And it is diversity that raises the concern for commensurability, and it is commensurability that attempts to destroy diversity by halting proliferating diversity in order to offer comprehension in the form of a common context. This is perhaps why the generation of diversity (as 'cofa', and as 'ataw') is such an important process, and this is why so much effort has been awarded to this process (ie chapters two to four, and chapter five movements A to C). The comparative effort of diversity with regard to commensurability is shown in the following tabulation:

Table 5.10: Diversity and commensurability

Effort for: Diversity	Commensurability
Chapters 2: Structure 3: Process 4: Content 5: Author's intentions, Debates, and levels (movements 1 to 3)	Chapter 5 : Comparisons between authors (movement 4)

If we weight each of the four chapters equally and each of the sections in each of the chapters equally, then the following ratio is given (Diversity: Commensurability):- 95.8 %: 4.2 %

From this extremely favourable ratio, we can claim that diversity is able to dictate commensurability. Diversity must continually reinforce the inherent instabilities of any commensurable analysis, and it does this with the sheer weight (95.8 %) of ideas, information, interpretations that proliferate around the 'feet of commensurability' (4.2 %). However, we must not forget the power of this minority, since commensurability stimulates rupture, thereby adding to diversity. This is why the battle between commensurability and diversity has no conclusion except the continuation of commensurable diversity: which is the thesis of this Architecture.

Commensurability, using the five tabulations, shows the most precise articulation of the application of the Architecture of Critical Systems Thinking within the thesis. With this precision we are able to compose the contents of each author's tabulation. To do this effectively would require another thesis. Effectively here refers to 'a comparison of all the cells of every author with all the other authors'. This would be comprehensive with regard to the authors proposed. This also shows the (possibility for a) generation of diversity. In order, however, to concentrate upon the effectiveness of this thesis (in its explicit wish to generate diversity), which inevitably incorporates the restrictions of space, we can effectively use the space to consider one of the twelve cells across the five authors.

Perhaps the most revealing cell to consider across the five authors is the 'Pluralism-Fiction' cell. The reasons for this choice are two-fold, each reason referring to each structural side of the Architecture. The reason for the choice of 'Pluralism' is that Pluralism constitutes an 'organising attitude' of the three previous epistemological levels; necessarily it contains the three previous levels in a coherent manner (second structural side). The reason for the choice of '-Fiction' is that throughout the fifth chapter it has shown itself to be the most challenging of the three main debates; it challenges the systems thinker's notion of 'reality', and how that reality is constructed (first structural side). Armed with these two reasons we will begin our investigation of 'Architecture as commensurability' in the Pluralism-Fiction cell.

To clarify the area of investigation we will tabulate the Pluralism-Fiction cell:

Table 5.11 Commensurability across the Pluralism-Fiction cell

Author	Beer	Checkland	Flood	Flood and Jackson	Jackson
Pluralism -Fiction cell	- To see beyond artificial classifi-cations	- Pluralistic process ('W' as fiction)	- Impossi-bility of singular history (history as a fiction)	- Comple-mentarism (respect alternat-ive posi-tions)	- Subjectiv-ism (as fictions)

In this cell we have Beer's 'artificial classifications'; Checkland's 'pluralistic process'; Flood's 'impossibility of singular histories'; Flood and Jackson's 'complementarism'; and Jackson's 'subjectivism'. These are the five moments of Pluralism within the 'Fictions' debate across the five authors. Each moment offers a view upon fiction, and this view arrives as an analogy, an analogy across each author:

Beer: fiction as **artificiality**

Checkland: fiction as **Weltanschauung**

Flood: fiction as a **history** (amongst the four others)

Flood and Jackson: fiction as a **complementarist** position

Jackson: fiction as **subjectivism**

The relative simplicity in presentation that has now been achieved allows for the Architecture of commensurability to operate in an effective manner. The effective manner will compare the words that constitute the analogous position of each author (in bold).

If there exists commensurability across these five authors, then communication of these analogous positions is possible. We can recall that Beer can be seen as an Organisational Cybernetician; Checkland as a Soft Systems Thinker; and Flood, Flood and Jackson, and Jackson as Critical Systems Thinkers. And the Architecture as commensurability asks: 'Can the analogous positions of these five authors (from these three paradigms within Systems Thinking) offer the possibility for inter-paradigmatic communication leading to commensurable positions?' To respond to this question do we need to "... recognise each other as members of different language communities and become translators." (Kuhn, 1970a, p.202)? The Architecture as commensurability can, therefore, be seen as a translator between the language communities of Organisational Cyberneticians, Soft and Critical Systems Thinking. What needs to be translated are the five analogous positions: artificiality, weltanschauung, history, complementarist, and subjectivism.

The positions all refer to the pluralist-fiction cell. They all are constituted by the three movements in this chapter, all the positions have been filtered through the intentions, the debates, and the levels. Commonalities already exist, commonalities of form, presentation, and direction. What is needed now is a commonality across the five positions.

If each paradigm houses a particular meaning, where 'history' means something different in the Cybernetic, Soft, and Critical paradigms, then can a paradigm exist between the paradigms, and can this paradigm be called an Architecture as commensurability, where the Architecture forms the means to compare? The Architecture as commensurability houses a meaning different from the three paradigms, since its meaning seeks commensurability according to the four chapters in this first stage. The meaning of the Architecture creates the analogies, and proposes the comparisons, it is a discursive and discussive meaning. Artificial for Beer becomes artificial for the Architecture in order to see history in the Architecture form espoused by Flood. We retain the intentions from each author as the intentions initiated the Architecture. Necessarily, however, we show artificiality within a direct relationship with history (and so on). This direct relationship becomes the immediate meaning for the Architecture (the less immediate being the previous movements). By clarifying this relationship we open up the possibility of an Architecture as commensurability.

Artificiality for Beer refers to classifications that neglect the notion of viability in favour of 'areas of investigation', for example biology centres upon the living cell, while sociology centres upon the group (made up of biological cells). Beer argues that such classifications are meaningless unless they are viable in their own right. If such viability does not exist, then the classification is artificial.

Weltanschauung for Checkland refers to a pluralism of world views that need to be tolerated. These world views are restricted only offering partial views upon reality, but that reality is constant, and it manifests itself in its origin.

Viability for Checkland relies upon opposing Weltanschauung being brought together for a new synthesis to be achieved. This synthesis is an improvement upon the previous Weltanschauung as it recognises the weaknesses of the Weltanschauung. However, Checkland cannot escape the restriction that any new synthesis must be understood, and can only be understood by it being adopted as a new Weltanschauung. The fiction of the restricted previous Weltanschauung has been replaced by the improved fiction of the new Weltanschauung. The understanding of Artificiality, however, has helped to shape this new Weltanschauung, and in this relationship the prospects for an Architecture as commensurability begin.

History for Flood arrives to us in four forms: linear-sequential; structuralist; world-view; and genealogy. Each form can be complemented by another form, and in some manner an improved form can be witnessed. The way in which this occurs relates to Checkland's formulation of a new Weltanschauung (if we accept throughout that all world views are restricted) in that pluralism must be tolerated (a pluralism of historical interpretations) because the fictional context of each form has been realised (fiction here used in its negative sense). The mechanism of the Weltanschauung is considered in Flood's 'world view' form (Kuhnian normal to crisis back to normal), and this suggests the immediate relevance within Flood's work.

Complementarism for Flood and Jackson relies upon a mechanism that uncovers metaphors which then direct the systems thinker toward a systems methodology. As more than one metaphor can be tolerated at one time (because viability is respected, the restrictiveness of one weltanschauung is noted, and the

impossibility of a singular history is taken seriously) more than one methodology can be employed at one time. The fiction arrives in the form of the metaphorical analysis, and pluralism arrives specifically with the methodological intervention.

Subjectivism for Jackson is important in that "The only way we can get near to a view of the whole system is to look at it from as many perspectives as possible." (1991, p.137). These perspectives on their own constitute a restricted fiction. Together, however, as subjectivities, they represent the closest that we can get to an objective truth. The manner in which we can combine these 'many perspectives' is similar to Beer's quest for viability (in that each 'whole system' can only be whole if it is viable according to self-reference), Checkland's quest for synthesis (the combination of a dialectically fashioned Weltanschauung), Flood's quest for historical complementarism (the combination of historical approaches that enables the systems thinker to come closer to past events and emerging future ends (Carr, 1964)), and Flood and Jackson's quest for methodological complementarism (the combination of metaphorical world views with commensurable systems methodologies).

These five analogous positions become analogous to each other. They reinforce the theme of the Pluralism-Fiction cell and reinforce the claims of the authors (as respected by the first movement). The Architecture as commensurability has shown the ability of these five authors to exist within a commensurable framework. Commensurable because each author calls for an ever exacting notion of truth involving the notions of 'pluralism' and 'truth'. Each of the individual understandings that each author privileges has been guided into an intricate debate with the other authors. This debate has revealed the possibility

for a commensurability to exist. This, therefore, can be viewed as the initiation of the Architecture as commensurability. We need to further concentrate upon such an effort in order to show the potential that exists for commensurability across these five authors. Commensurability revolves around each authors' consideration of the two terms of pluralism and truth, and commensurability shows itself when these two terms are taken seriously (as they indeed are by these five authors).

CONCLUSION

This fourth movement of this fifth chapter has developed the notion of a common context for the five authors considered. The previous movements show themselves as constitutive elements in the Architecture of each author. The Architecture is shown in five authoritarian forms which can be compared to the Architecture of Critical Systems Thinking established in the fourth chapter. This comparison allows the reader to continue the general theme of this movement in considering the Architecture as commensurability. In order to achieve this, commensurable Architectural frameworks for each author are required, and an interest for the commensurability of these frameworks is needed. The first requirement is given in the first section, and the second requirement becomes the express wishes of the second section. Together these two requirements allow for the Architecture to be viewed as a possibility for commensurability.

The possibility for commensurability has developed with the correlativity that has been the basis of these four movements in this chapter. Correlativity has gradually built up connections across the works of the five authors, and these connections have reached a stage that permits an analysis of commensurability. Such an analysis is clearly documented in this final movement. Interests for commensurability are stated, and commensurability is attempted. The success of such an analysis is dependent upon the correlativity achieved throughout this chapter. If the themes correlate to the first structural side of the Architecture, if the favoured words/phrases correlate to the second structural side of the Architecture, and if the Systems Definitions correlate to the combination of these two structural sides (as given in this fourth movement), then we can offer good prospects for commensurability.

Overall, this final movement has achieved the possibility for commensurability as it has achieved correlativity throughout this last chapter in this first stage. We end the *Architecture of Critical Systems Thinking* in a positive sense, and await the attack that will be given by the *Acuity of Critical Systems Thinking* in the second stage.

CHAPTER SIX: THE VALUE OF STAGE ONE: THE ARCHITECTURE OF CST

We began this first stage with an introduction to the whole notion of 'architecture' as it can be found in any detailed dictionary. We discovered that six main definitions of this word are available, and they are: Art/Science, Structure, Action/Process, Style, General Construction, and Computing. A common 'supporting rôle' is shared with the Structure and General Construction definitions, and accordingly we arranged the six definitions into six cells, showing commonalities in a systemic manner, and placed the two cells Structure and General Construction in a supporting rôle at the centre of the six cells (see Figure 1.1 in the first chapter). These two cells are seen as 'everyday' definitions of 'architecture', and they are used in this first chapter to support the 'non-everyday' definitions. The 'non-everyday' definitions are given by the four other cells, and consequently, the chapter focuses on these four cells in order to develop the overall potential debate concerning the ArCST. As the discussion of these four cells progresses we realise an ability to capture the definition of the 'non-everyday', and this definition must be seen with the 'everyday' definition. The 'everyday' definition is 'structural longevity', and the 'non-everyday' definition is 'relational modification'. Structural longevity refers to the established definition of architecture, where the physical structures that exist are intended to exist in the long term. Relational modification builds upon the stability of this definition. Relational modification is the manner in which relata become

modified as they are brought into contact with other relata. For example, how words change their meaning as they are brought into contact with other words (an example being 'Critical' and 'Architecture', which if brought together would each modify their relationship with regard to each other). Relational modification is the more abstract to the more physical Structural longevity. When a relata affects another relata it does so at different rates and at different times because the relata is maintaining a relationship with other relata which are also changing their relationship with other relata. At this point we can begin to see the abstract complexities of Relational modification, but at the same time realising the important supporting rôle of Structural longevity. These two definitions, therefore, are the output of our initial understanding of the ArCST, and they will shape the entire first stage of this thesis.

The second chapter develops directly from the first chapter in its visible construction of an ArCST. This visible construction is the Structural longevity. Once we have constructed a visible entity we begin to realise the potential that it has for structural longevity, in that visibility in its repeatability becomes longevity. And it is this three way relationship that we concentrate upon in this chapter. Visibility refers to the three Tables: 2.1, 2.3, 2.4. Table 2.1 makes visible the intentions of the first structural side, from Margins to Will. Table 2.3 makes visible the second structural side from Dialectical-Forms to Pluralism. Table 2.4 inter-relates Tables 2.1 and 2.3 to give the Architecture of Critical Systems Thinking. Each Table facilitates the comprehension of the Architecture, allowing the combination of two orthogonally opposite Tables to be easily combined into the basis of the first stage. Such facilitation of comprehension also depends upon repeatability. In the visibility, in the physical dimensions of the Architecture

established in Table 2.3, we offer grounds for repeatability. If we allow the Architecture to be made visible again, we preserve the physical dimensions of it, we repeat it. The visibility becoming the repeatability, the recognition of its physical dimensions. And in preserving its physical dimensions in this way, we are, in fact, ensuring the longevity of the Architecture. The Architecture will last as long as we preserve its physical dimensions. Structural longevity is totally dependent upon the preservation of form that becomes the over-riding logic of the second chapter in its call for structural consistency. Structural consistency is upheld firstly, in the manner in which the two structural sides are brought together, and secondly, in the manner in which the Architecture maintains its basic form all the way to the last section in the last chapter in the first stage. Consistency is enhanced when the two structural sides become one Architecture, as the consistency that was in both structural sides extends to form the twelve cells that seek to develop and reinforce the intentions of the two sides. We can witness, therefore, that chapter two's over-riding logic of structural consistency is taken seriously and developed not only in chapter two but throughout the entire first stage. We will call upon this logic again as we proceed through this summarising chapter. The next chapter stands to enhance this logic in its logic of continued understanding, and it is this logic that we must now look at.

Having introduced both the notions of Architecture that we consider to be useful, the notions of structural longevity and relational modification, and having developed our understanding of the first notion of structural longevity, we are now in a position to tackle relational modification. Relational modification operates with structural longevity to fulfill two of the objectives of the third chapter. The first objective operates relational modification upon the episte-

mological levels, and the second objective operates relational modification upon the main debates. The first objective thereby operating upon the first structural side in that the three vertical flows that become the visibility of this operation operate along the first structural side in its three dimensions (please make reference here to Table 3.1). And the second objective thereby operating upon the second structural side in that the four horizontal flows that become the visibility of this operation operate along the second structural side in its four dimensions (please make reference to Table 3.2). These two objectives, therefore, maintain the structural consistency developed in the second chapter, in that the two structural sides are made more structurally consistent through an appreciation of the flows that constitute the two structural sides. Relational modification operating along the first structural side supports structural consistency in 'allowing the polemic to be heard'. The polemic is the three main debates, and the allowance to hear them is given by the epistemological levels. The epistemological levels respond to the challenge offered by the main debates by modifying their relationship with the main debates. Where responsiveness (and here we are talking *within* the Architecture, and therefore we must be talking about *intra*-responsiveness) directly relates to relational modification: to be responsive is to modify upon relating to another relata. Relational modification operating along the second structural side supports structural consistency in forcing the main debates to show themselves as responsive to the intellectual concerns of the Systems community. This is shown by the application of the epistemological levels upon the main debates. If the main debates respond to the intellectual concerns of the Systems community (and here we are thinking about the change that those concerns will undergo as different problematics become increasingly important), they respond through the test that is provided by the four episte-

mological levels. Such a test directly relates to relational modification in that the debates must modify to the relata that is the epistemological levels. Together, these two objectives form two flows that become the over-riding logic of the third chapter: the logic of continued understanding. Continued understanding operates within the Architecture as process. It is complicit with the over-riding logic of structural consistency, in that structural consistency provides the stability for the continued understanding to operate. Continued understanding seeks to enter into a questioning of the structural consistency, but it is only able to do this if the logic of structural consistency is obeyed: the logic of structural consistency determines the logic of continued understanding. To understand is to understand within a structure. To understand is to be consistent with that structure in the very act of understanding. To this extent, therefore, structural consistency is required in continued understanding. But all discussion of such logic is empty without an attempt to content such logic, and the contentment of the logics of structural consistency and continued understanding is provided for in chapter four, which naturally becomes our next interest.

The logic of structural consistency provides us with the visibility, repeatability, and longevity that we require in any contentment of an architectural stability. The logic of continued understanding provides us with the flows, the relational modification, and the process that we require in any contentment of an architectural interpretation. Stability is the basis, interpretation is the improvement of that basis. As we have already stated above, interpretation requires a basis: the logic of continued understanding requires a logic of structural consistency. The basis is the two structural sides brought together to give twelve cells that require contentment. The interpretation is the manner in which contentment can be

achieved. Interpretation is the process upon the structural basis. This fourth chapter follows this process within the structure. Twelve cells require contenting (three main debates (see Table 2.1) giving three vertical flows (see Table 3.1) multiplied by four epistemological levels (see Table 2.4) giving four horizontal flows (see Table 3.2) resulting in twelve cells), but the logic of continued understanding means that not all cells can be contented. The logic of continued understanding can be seen as a balancing mechanism between the vertical and horizontal flows. If these two flows are balanced, then cellular contentment follows, because firstly, the main debates are allowed to be heard by the epistemological levels, and secondly, the main debates respond to the intellectual concerns of the Systems community. If, however, these flows are not balanced, and the only way that this can happen is if the vertical flow dominates the horizontal flow, then cellular contentment does not follow. If the vertical flow dominates the horizontal flow, then the epistemological levels disallow the main debates to be heard, the epistemological levels dictate the main debates. Such an imbalance leads to cells which become 'satellites of critique'. Satellites of critique possess a *will to critique* that operates on bordering cells, this enables the satellites to critique contented cells. The satellites of critique operating within the Architecture establish an Architecture of Autocritique (see Figure 4.1). Such an establishment can work to minimise the overpowering of the vertical flow upon the horizontal flow by ensuring a continuous dialogue between satellite cells and their bordering contented cells. This continuous dialogue would keep the Architecture contemporary and responsive to the intellectual requirements of the Systems community, thereby ensuring a better balance between the two flows within the Architecture. However, only three satellite cells exist alongside nine

contented cells, thus showing the potential for a well contented ArCST. Now that we have shown how the Architecture can be contented, we are now in a position to introduce the application of the Architecture to Systems Thinkers.

The application of the Architecture can be seen as a dialogue between Systems Thinkers, where the dialogue is provided by the structure, the process, and the contented form of the Architecture. The structure offers a common representation of Systems ideas, the process offers a way in which we can clarify such a representation of ideas, and the contented form can be used as a working representation of comparable ideas. Together, therefore, chapters two, three, and four offer clear possibilities for a common representation of ideas. These three preceeding chapters show the potential for an application of the ArCST. The ArCST can be applied to Systems Thinkers who are likely to make some contribution to the general architectural debate. Such a contribution must be as extensive as possible, involving a range of Systems Thinkers. The proposed Systems Thinkers range from an Organisational Cybernetician (Beer), to a Soft Systems Thinker (Checkland), to a pragmatic Critical Systems Thinker (Flood and Jackson), to a liberating Critical Systems Thinker (Flood), to a realist Critical Systems Thinker (Jackson). Such a range offers much potential debate, and the Architecture stands as an ability to structure, process, and content such debate. The application begins with an initial understanding of each Systems Thinker, this constitutes the first movement of the fifth chapter. In this movement we ask: what are the themes of each author, what are the favoured words/phrases of each author, and what is or are the definition(s) of Systems that each author provides the reader with? The value of this application of the Architecture, and here we are applying the first chapter's initial understanding of Architecture, becomes

relevant as we proceed through the three following movements. In the second movement we ask of the Systems authors: what is the incidence of the three main debates in your work? The themes in the first movement directly relate to such incidences. We will use the example of Beer. Beer's themes included 'Autonomy' and 'Viability', and these two themes directly relate to the debates upon 'Fiction' and 'Will'. The autonomy required when one creates other languages cannot be over-estimated, since the laws (-nomy) of the self (auto-) come to life in the (self-) creation of a language (requiring laws in order to be communicable). Beer's incidence of Fiction arrives in the creation of a language (of viability). The theme of viability that correlates with the incidence of the will debate in its two forms of 'will to cohere' and 'will to survive' does so when we show viability as a " ... constraint only in terms of minimal cohesion. " (Beer, 1979, p.173). Viability as a theme, therefore, becomes an incidence of the will debate in terms of will to cohere in 'minimal cohesion' and 'will to survive' in the necessary constraints for survival. In the third movement we consider how the five Systems Thinkers can be seen through their employment of the four epistemological levels. Such employment relates to the first movement's initial understanding of the employment of favoured phrases, where the authors' expressions evidence the way in which they think (epistemologically) about their main themes (in the debatable sense). We will use the example of Checkland. A favoured phrase of Checkland is 'Purposeful action', and this phrase evidences his desire to see a 'soft' outcome from the Hard-Soft Dialectical-Form which he proposes. This phrase, therefore, evidences the way in which Checkland thinks about his theme (of the crebibility of SSM), and the way in which he tackles this theme is through the Dialectical-Form of Hard verses Soft Systems Thinking. We can evidence, therefore, that Checkland thinks not only about Hard verses Soft, but that his

thinking is geared toward 'Purposeful action' (as opposed to Purposive action). In this way, the initial understanding helps us to correlate with the employment of the four epistemological levels, and this correlation enhances the general application of the Architecture. In the fourth movement we develop the notion of a common context for the five Systems Thinkers. The previous movements are constitutive elements to this common context. The common context is an Architecture for each author. The Architecture is shown in five authoritarian forms which can be compared to the contented Architecture of chapter four. Each author's Architecture relates to their Systems Definitions offered in the first movement. Where the Systems Definitions attempt to combine the author's work, the author's Architecture is a combination of the second and third movements (the debates and the epistemological levels). This comparison and the combinations allow the reader to continue the general theme of this movement in considering the *Architecture as commensurability*. The possibility for commensurability has developed with the correlativity that has been the basis of these four movements in this fifth chapter. Correlativity has gradually built up connections across the works of the five authors, and these connections have now reached a stage that permits an analysis of commensurability. The success of such an analysis is dependent upon the correlativity achieved throughout this chapter. If the themes correlate to the first structural side of the Architecture (second movement), if the favoured words/phrases correlate to the second structural side of the Architecture (third movement), and if the Systems Definitions correlate to the combination of these two structural sides (fourth movement), then the possibilities for commensurability look promising.

Commensurability hinges on correlativity, and as we continue to study the details of it through Systems ideas, then we can continue to be hopeful with regard to commensurability across the diversity of the Systems idea.

We find the overall value of the first stage as resting with an introduction to Architecture as structural longevity and relational modification; continuing these two architectural notions to establish two logics: a logic of structural consistency and a logic of continued understanding which then structure an ArCST and show how it operates; combining these two logics to content an ArCST; and applying structural longevity, relational modification, structural consistency, continued understanding, and the contented Architecture to contemporary Systems Thinking.

The overall value of this first stage, however, is an investigation into commensurability, and we must posit that the *Architecture as commensurability* is possible. We now await the investigation into the Architecture that will be provided in the second stage by the *Acuity of Critical Systems Thinking*.

CHAPTER SEVEN: INTRODUCTION TO STAGE TWO: THE ACUITY OF CST

The Architecture as structural longevity impressing upon us the logical requirement for structural consistency becomes the problematic of the Acuity of Critical Systems Thinking. The logic of structural consistency is the basis of the credibility of the first stage. To question in order to dis-lodge this predominant logic is to show the Architecture of Critical Systems Thinking as merely an impressive desire to construct in a critical manner. As we have stated in the *preface*, there exist two urges in Critical Systems Thinking. Firstly, an urge to construct in a critical manner, and secondly, an urge to be critical about such constructions. The first urge has created the first stage, the *Architecture of Critical Systems Thinking*, and the second urge has created what will become the second stage, the *Acuity of Critical Systems Thinking*. In order to show, therefore, whether the Architecture of Critical Systems Thinking is or is not merely an impressive desire to construct in a critical manner, we need to be critical about what has been constructed in the first stage. The problematic of structural consistency proposes an Architecture as commensurability in chapter five, and we need to ask in this chapter (in order to prompt the second stage) whether or not this thesis on commensurability is tenable or not. Tenability itself will also need to be questioned. In short, therefore, we need to question the possibility and the extent of structural consistency as it applies to the Architecture. This chapter will set out an introduction to how this structural consistency can begin to be questioned.

Chapter eight is the elevated process over structure. This elevation allows the Acuity to begin by directly questioning the structural consistency of the Architecture. This chapter is, therefore, effectively a de-construction of the Architecture. A de-construction that has four distinct stages: the extraction of the content of the Architecture (see Table 8.1); the loss of connection between the structural sides (see Figure 8.3); the loss of connection between the debates (see Figure 8.5); and the de-constructed two clouds (see Figure 8.6). This de-construction highlights the structural consistency of the Architecture as a dependency. To show this dependency we need to highlight the four distinct stages in their relationship with the notion of structural consistency. The extraction of the content of the Architecture is necessary as a primary re-tracing of the chapters two to four, where in chapter four we contented the Architecture by combining the logics of chapter two and three. We are not interested in the content, but we need to extract it in order to re-trace the structural consistency of the Architecture back to its conception. The loss of connection between the structural sides becomes inevitable once we lose the content, because the structural consistency that related the content to the two structural sides has been discharged. And now we are perhaps beginning to see the extent of structural consistency, and the ease with which we were able to extract the content. The loss of connection between the debates occurs when the first structural side loses its structural consistency (running from initiation of marginal debates, exemplification of marginal debates, and the motivation behind marginal debates). The de-constructed two clouds occur when the structural consistency of the Architecture has been displaced by two desires: a desire to construct, and a desire to compare. At this fourth stage we realise that structural consistency looses all its impressive qualities, and we are left with these two stark desires. These four

stages are detailed in the eighth chapter as the Architecture is de-constructed more specifically via the Dialectical-Forms (left untouched specifically for more theoretical work by the four stage de-construction); the Architecture is then presented as a 'self' to the de-centred Acuity (and here our interests turn to identity); and finally the Acuity finds itself de-centred and re-defines itself through intertextual knowledge. This processurally dominated chapter has severely questioned the structural consistency of the Architecture and offered alternative policies with regard to critical construction. The next chapter develops from these alternative policies to offer a critical construction for the Acuity.

The Structure of the Acuity develops on from the two clouds of 'desire to construct' and 'desire to compare'. These two clouds propose an opportunity to the Acuity, an opportunity to develop a structure that does not neutralise meaning as the Architecture is accused of doing in chapter eight. In order to not neutralise meaning, chapter nine looks at the acute significance of three words which become three subsections: Interpretation, Representation, and Meaning. We require a structure that maintains and does not neutralise meaning. Consequently, a structure is developed that Interprets a Representation, and maintains meaning by developing meaning. The structure develops into two forms: a Basic structure of the Acuity and a Structure of the Acuity. Both seek to represent interpretations of the many meanings of the word "is". The Basic structure is a square-based pyramid that has the existence of "is" as its base and the employment of "is" in a sentence as its point of Acuity (see Figure 9.1). With this structure we are able to represent (using the pyramid) interpretations (in the sentence form "is") of the many meanings of the word "is". The 'many' is emphasised in the Structure of the Acuity (the Basic structure being used as an operational indication) which

replaces the square-based pyramid with a cubed-based pyramid (see Figure 9.2) in order to represent more meanings of the word "is", and thereby maintain more meanings. With this structure we need to look at interpretation, representation, and meaning in order to ensure that we do not enforce Architectural prejudices upon the Structure of the Acuity. Accordingly, Interpretation is guarded against essentialist results, severely questions self-referentiality, sees that truth has an inescapable linguistic existence, and that we can no longer interpret with the faith of certainty that correspondence theory offers us in the first stage. Representation is caught between representationalists and antirepresentationalists. Representationalists see language as separate from reality, while antirepresentationalists see reality as socially bound within language. The Architecture has both representationalist and antirepresentationalist moments. However, the overriding logic of structural consistency is fundamentally representationalist in orientation and, therefore, the Architecture is fundamentally representationalist in orientation. Our discussion of meaning looks at its relationship with validity. Meaning and validity can be caught in a Habermasian Dialectical-Form that portrays the fundamental logic of the Architecture, or they can be caught in a régime of truth that shows us that we must listen to language rather than arrogantly presume a linguistic mastery. Throughout this complex chapter we establish the Structure of the Acuity as being aware of the need to look again at the words interpretation, representation, and meaning. Now we have shown a process and a structure of the Acuity we can consider contenting the Acuity.

The contenting of the Acuity develops from chapters eight and nine. These two chapters evidence to the reader that throughout this second stage, process dictates structure, and that this process is our involvement within language. An

involvement that enables the Acuist to show the word 'content' as both noun and verb. The noun shown as structure, and the verb shown as process. As process dictates structure in this second stage then verb dictates noun. Accordingly, we need to see how the noun 'content' is constituted by the verb 'content'. We discover that it is constituted by movements within grammar which are called tropes. We use the Structure of the Acuity and relate it to two tropes in particular, metaphor and irony. These two tropes are seen as being the most prevalent and relevant within Systems Thinking, in that metaphor has recently taken on an abstract importance since the publication of Morgan's (1986) *Images of Organisation*, and that irony offers a realistic abstract opposition to Dialectical-Forms (where this opposition manages to escape the Dialectical rules). We then attempt to content the Acuity, but realise that a trope is unable to content anything except theoretical frustration. We look at metaphor's relationship with philosophy through the relevance of the Platonic-Forms upon the Architecture (through the Dialectical-Form) and witness a downgrading and a reliance upon metaphor. We then offer an 'Ironology' as an introduction to the potential for ironical studies, follow this with an overt Socratic study of Irony, and end with irony's relationship to self-creation and humour. Armed with this basic knowledge of irony and metaphor, and the basic knowledge that the Acuity cannot be contented, we seek to apply these ideas to a problematic that is causing much interest in Contemporary Systems Thinking: the problematic of Paradigm (in)commensurability.

Chapter eleven will apply the Acuity in its form of the three previous chapters (chapters eight to ten) to the problematic of paradigm (in)commensurability. This problematic includes two possible outcomes: paradigm com-

mensurability and paradigm incommensurability, therefore, in order to show that we are interested in the problematic that forces people to commit themselves to either commensurability or incommensurability we need to call it paradigm (in)commensurability. We shall begin by introducing the notions of will and representation. These two notions shall be introduced through the work of Schopenhauer and Nietzsche, and help the theoretician to consider how different authors see the relationships between reality (Schopenhauerian world as will) and appearance (Schopenhauerian world as representation). Will and representation are then given a paradigmatic context through the introduction of two main paradigmatic thinkers (which have by far the greatest influence upon paradigmatic thinking in Systems Thinking) Kuhn and Burrell and Morgan. The incidence of a dualistic strain becomes the next concern when we begin to relate paradigmatic thinking to a Cartesian separation of mind and body. Dualism must be studied in some detail in order to relate it to paradigmatic thinking, accordingly we will study the scientific dependency upon dualism, and offer an anti-dualism of scientific activity through the works of Peirce, Rorty, and Nietzsche. We will then be in a position to relate dualism to paradigmatic (in)commensurability. Here we will see Kuhn positing an extended world of language, and a non-extended world of shared and similar stimuli and thinking processes. Here we will also see Burrell and Morgan suggesting a 'knowledge orientation' and a 'power orientation' following on from their subjective and objective distinctions. The irony of paradigm (in)commensurability arrives as a direct application of the lack of content of the tenth chapter. Irony needs to be related to both cases. We find Kuhn and Burrell and Morgan as examples of paradigm incommensurable thinkers, and we find the Architecture of Critical Systems Thinking as an example of paradigm commensurability. Kuhn falls for dramatic irony. Burrell and

Morgan fall for a Socratic irony that highlights the negative dialectic. The Architecture as Critical Systems Thinking falls for a double irony where the Acuity at the upper level sees the Architecture being forced to choose between paradigm commensurability and paradigm incommensurability. In the final section we will be asked to consider pardigm (in)commensurability as a linguistically dictated contingency. To self-create is to respond to the contingencies of language through the continued act of making a difference in the act of creating and re-appropriating our vocabularies. This eleventh chapter will apply the Acuity of Critical Systems Thinking, in its many enunciations throughout the second stage, to the current problematic of paradigm (in)commensurability. Such an application will not result in a simple yes or no position, rather, such an application will admire the operation of irony upon the entire discussion and discussants.

The Acuity of Critical Systems Thinking critically looks at the construction that is the first stage. It develops a running critique of the structural consistency of the Architecture, a fundamental critique that has severe consequences for the scope and effectiveness of the Architecture. The challenge of the Acuity begins with de-construction and ends in irony, and between these positions lies a Structure that attempts to study the complexities of language in the realisation that language cannot be studied in the sense of creating a critical distance (see *preface*) between power and validity. Instead, language is the power that dictates validity, and we are merely here to work upon and clarify these validations in the hope of validating our own efforts. This lack of critical distance has been

destroyed by the operation of the Acuity upon the Architecture, and the effects of this lack will be adressed throughout this second stage, and in particular in chapter twelve.

CHAPTER EIGHT: THE PROCESS OF THE ACUITY OF CST

INTRODUCTION

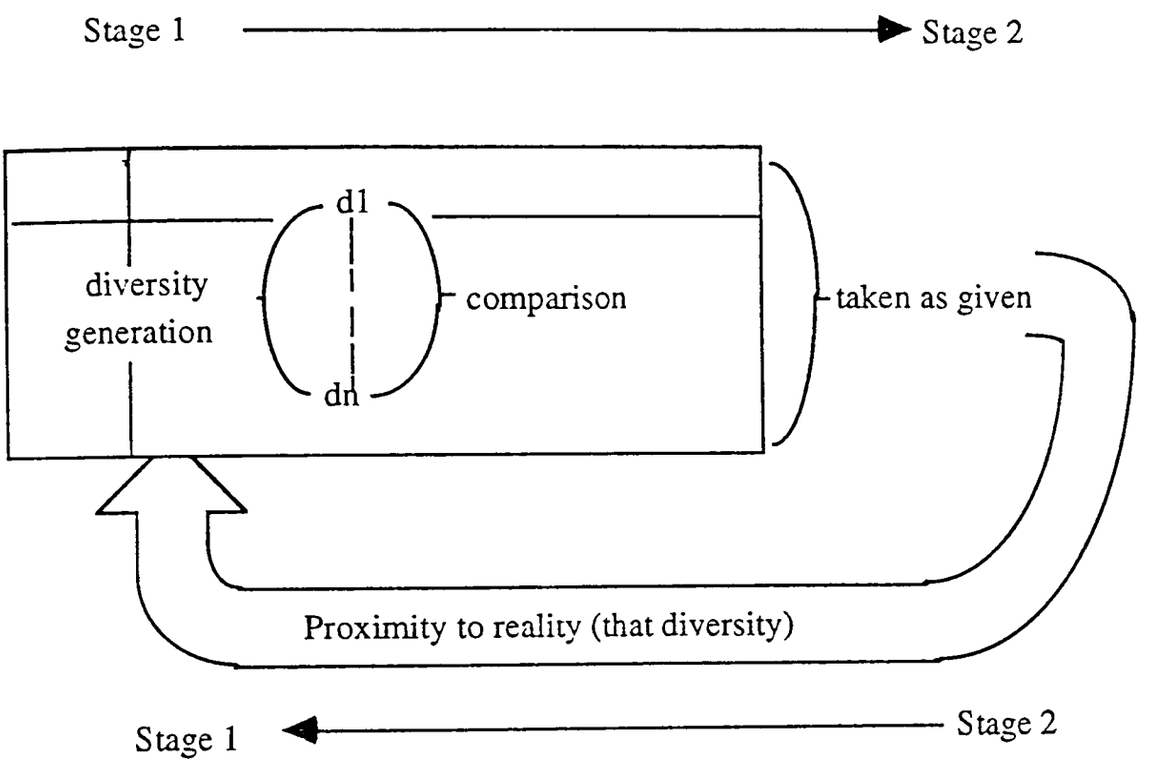
The Acuity of Critical Systems Thinking advances *'process'* before it advances *'structure'* (chapter nine). This is the reverse of the Architecture which discussed the 'structure' (chapter two) prior to its discussion of the 'process' (chapter three). The reason for this reversal is nothing more than a necessary re-tracing of the Architecture, because the Architecture discussed, and therefore emphasised, the structure over the process. The Acuity must proceed over the Architectural structure before it is able to suggest a structure. In order to reach for the (remnants of the) structure, it is necessary to work through the process that has developed from the structure. In the Architecture the process follows the structure. In the Acuity, therefore, the process must be tackled in order to see the structure. In the Architecture structure is emphasised over process (it is the edifice that carries meaning). In the Acuity process is emphasised over structure (it is meaning that dictates the edifice).

We need to see beyond the process used in the Architecture in order to see and understand the structure (but do we witness a structure, or does it appear as endless process?), since it is the structure that is dominant in Architectural studies, and therefore, it is the structure that we must take seriously. But in taking this structure seriously, the only tools that we have (that are taken

seriously in the Acuity) are *'tools of process'*. Tools of process merely guide. They suggest routes to the Acuist. Tools of process offer no structures, no solutions. Tools of process offer ways to dis-solve, to de-construct. We can witness this in four distinct stages: firstly as an extraction of the content of the Architecture (an extraction of the fourth chapter); secondly, as a loss of connection between the epistemological levels and the main debates (chapter 2.3, the bringing together of the two structural sides); thirdly, as a loss of connection between the main debates (chapter 2.1, the structuring of the first structural side); and fourthly, as a recognition of two clouds where before we recognised the Architecture (the intention of the whole of the first stage). Before we detail this four stage process, let us consider the general relationship between the first and second stages.

We again travel through the same process as the architecture in stage one. However, now we have a different interest. Where in stage one our interest was in construction (diversity generation and comparison), now our interest is in 'proximity to reality' (diversity as architectually given, proximity to that diversity as the guiding interest). Let us now consider both the Acuity and the Architecture of Critical Systems Thinking in one diagram (Figure 8.1), and let us focus on the 'main thrusts' that constitute both stages:

Figure 8.1 The main thrusts of the two stages



Main thrusts : Stage 1 : Generation and Comparison
Stage 2 : Promitity to that Generation

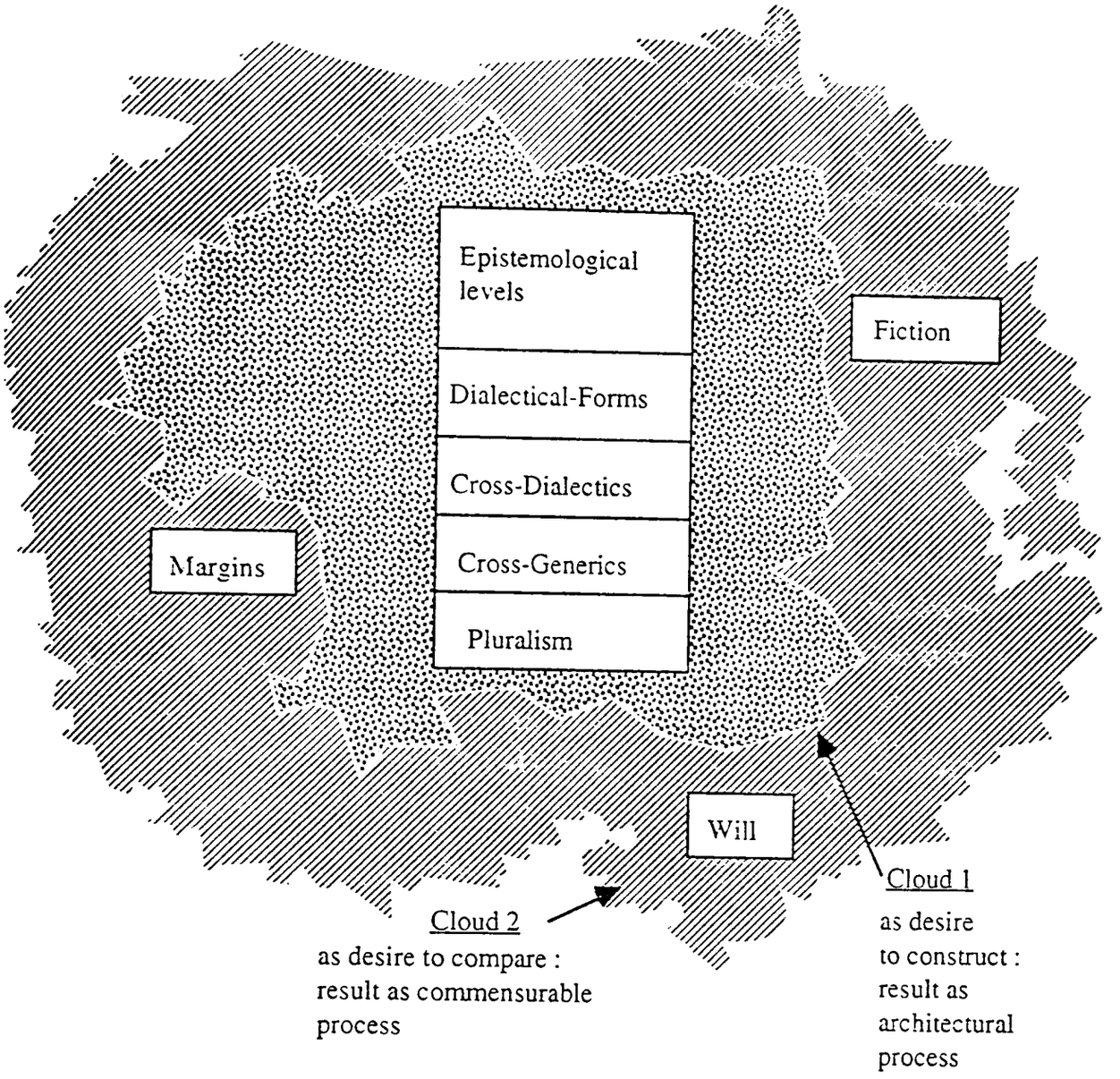
Where the first stage saw the need to construct (in order to investigate commensurability), the second stage sees the need to de-construct (in order to investigate 'the thing', where the 'thing' is 'that reality' which needs investigation, 'that reality' which promotes investigation, and 'that reality' which becomes hidden under an architectural structure).

Stage 1 generated diversity in a constructive manner and continued this manner in a comparison of this diversity. This constructive manner is taken as given in the second stage. In the language of the second stage (which must make a break, or a distance, from the first stage) this manner is questioned in a quest to 'get close to the thing'. It can be suggested that construction, or rather the constructive manner, is a recognition of the impossibility to 'get close to the thing'. In the case of the first stage the constructive manner builds an architecture around 'Margins', 'Fiction', and 'Will'. These three debates each could be 'the thing' that is being recognised, where 'the thing' generates diversity from a recognisable centre, 'that thing' being an energy for diversity. The architecture builds around these energies, 'these things', in order to eventually compare them in a similar discourse. To recognise this process is the energy of the second stage. The second stage sees the discourse as a 'cloud' around the thing, as a mis-re-cognition of the thing. The second stage is a realisation that all that can be achieved is a series of clouds, clouds as representations of human effort, where the human effort is the Architectural effort to construct a means to think about current issues of importance within Systems Thinking. We are beginning to realise, however, that the 'things' that we label as important cannot be really discussed. The thing becomes lost, as if it were never found, and the issue becomes a cloud. We are only able to suggest that

clouds can be compared to other clouds since they agree upon a desire to construct such clouds, but constructions beyond this become highly problematical (as we shall find out through this second stage). This, then, in the language of the second stage, is an initial understanding of the first stage. This second stage requires a complete re-orientation of the way in which we thought about 'things' in the first stage.

This abstract notion of 'cloud' can better be shown in a diagram. Following the format of the architecture (and this must be strictly followed in the Acuity) we can show two distinct stages: the constructive stage (diversity as a plurality of constructions, chapters two to four, and movements one to three in the fifth chapter) and the comparative stage (diversity being subjected to a singular construction, as commensurability. Movement four of the fifth chapter). Accordingly we can develop two clouds: the first cloud as 'desire to construct', the second cloud as 'desire to compare':

Figure 8.2 The Two clouds



We are suggesting in this second stage that the first stage can be seen as twin desires. This manner of seeing the second stage allows us to become closer to the overall intentions of the Architecture. It can be seen from the diagram that the 'architectural process' has been disengaged from the 'commensurable process'. This disengagement arrives as a result of the attempt, by the second

stage, to 'get close' to the structure of the first stage. In order to further explain this disengagement we need to evidence four distinct stages which develop from the Architecture to the Acuity. This deconstructive process requires a running pictorial commentary that uses the *tools of process* to establish four distinct stages in the de-construction of the ArCST:

Table 8.1 Extracted Content

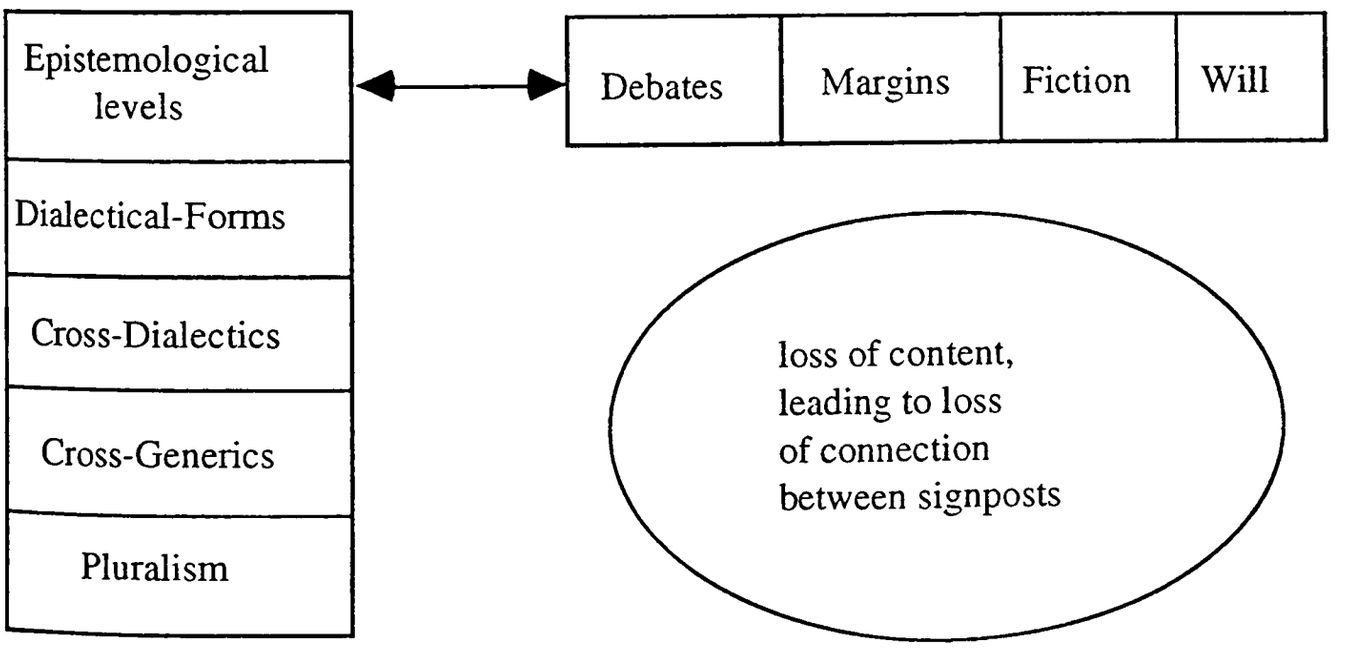
Debates Epistemological levels	Margins	Fiction	Will
Dialectical-Forms			
Cross-Dialectics			
Cross-Generics			
Pluralism			

Firstly, the content of the original architecture is extracted since the second stage is not interested in the constructive manner of the first stage, in the sense of constructive content. The Acuity, however, is interested in how

the architecture is constructed, not 'what are the contents of this architecture?'. We therefore extract the four epistemological levels and the debates, and are left with the synthesised two structural sides, the determining factors of the architecture: the four epistemological levels and the debates.

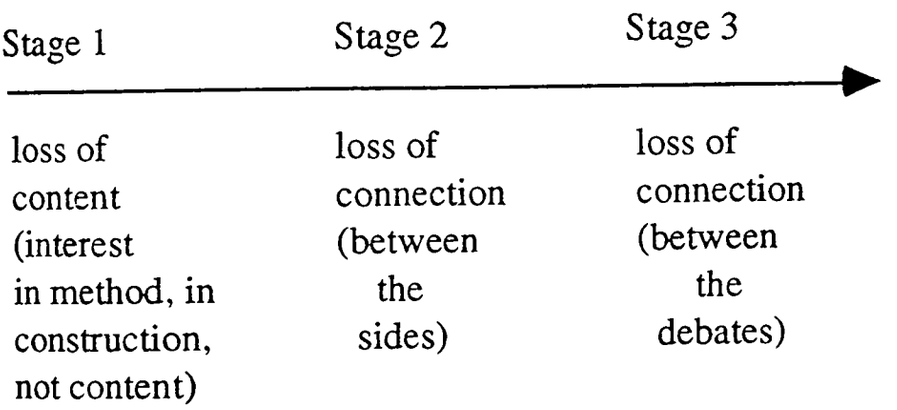
Secondly, the two structural sides (of the four epistemological levels and the three main debates) lose their connection when they lose their collective content, in the sense that the combination of the two structural sides actually enforces the stability of the overall Architecture. Once the content of this combination is lost, then the relationship between the two structural sides cannot help but be affected. The relationship between the two structural sides becomes gradually weaker as the content that combines them is gradually lost.

Figure 8.3 Loss of connection between sides



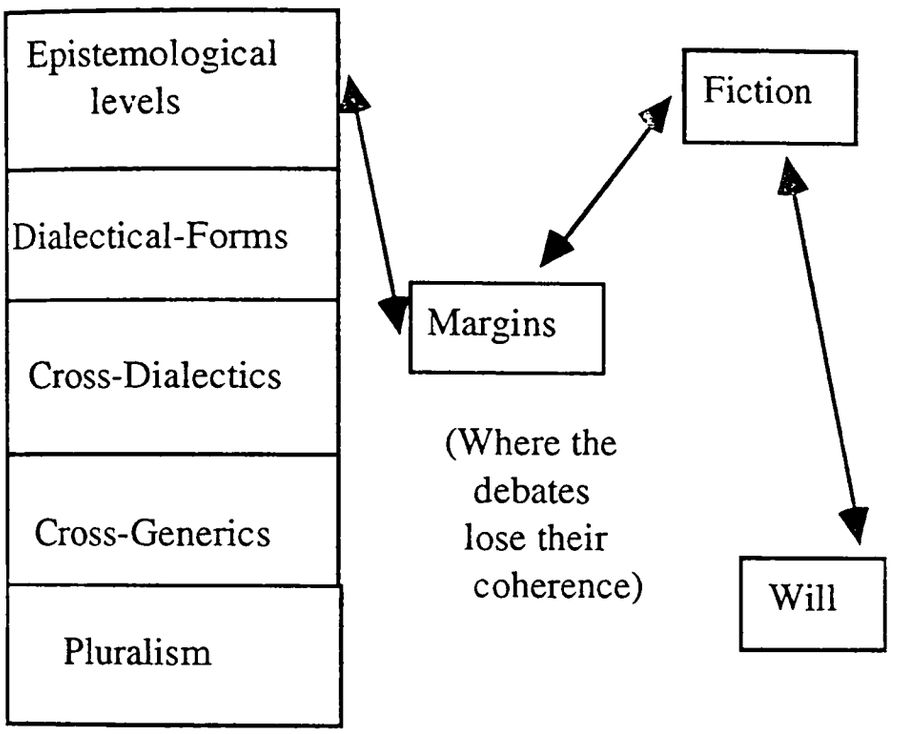
Thirdly, the debates themselves become fragmented, they lose their integrity through their loss of connection with the four epistemological levels (comparable to the second stage which lost the connection because of their loos of content). We are now able to synthesise these movements within the ArCST into three clear stages.

Figure 8.4 Three stages



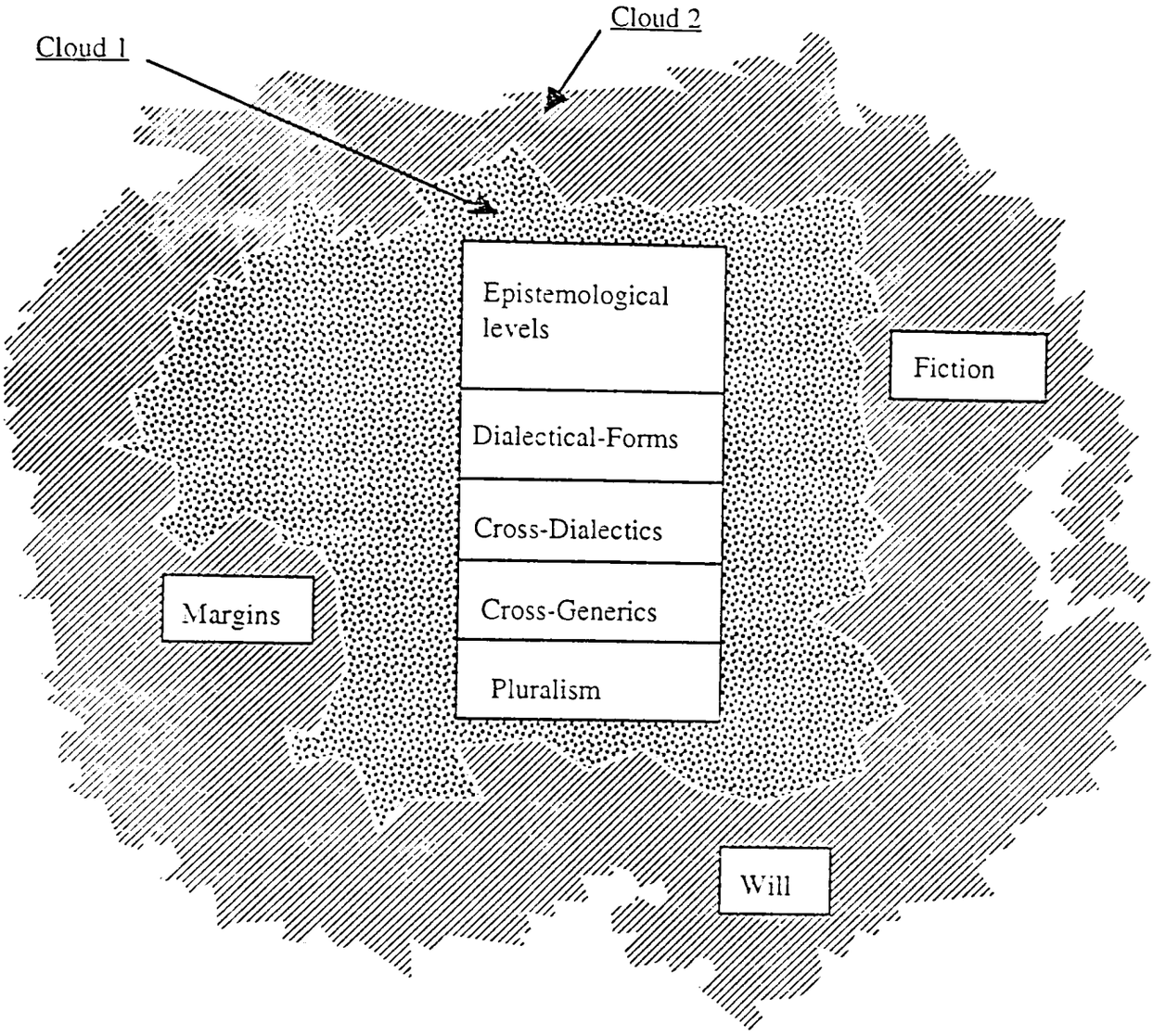
There is a need to show the third stage:

Figure 8.5 Loss of connection between debates



The fourth stage is the 'cloud stage' where the debates become separated from the epistemological levels. Consequently two clouds are formed, the 'cloud as desire to construct' and the 'cloud as desire to compare'. The development from the third stage to the fourth stage is thus:

Figure 8.6 The Two clouds



The loss of connection now has a more precise (despite being itself esoteric) relationship, ie between the debates and the epistemological levels. The desire to construct is the vertical supremacy of the Architecture that is represented by the Epistemological Levels. The desire to compare is offered by the horizontal debates. Together these two desires represent the intentions of the

Architecture. The Acuity of Critical Systems Thinking is, therefore, an attempt to understand the relationship between the two clouds, and also an attempt to understand the clouds. One interpretation is given in the following quote:

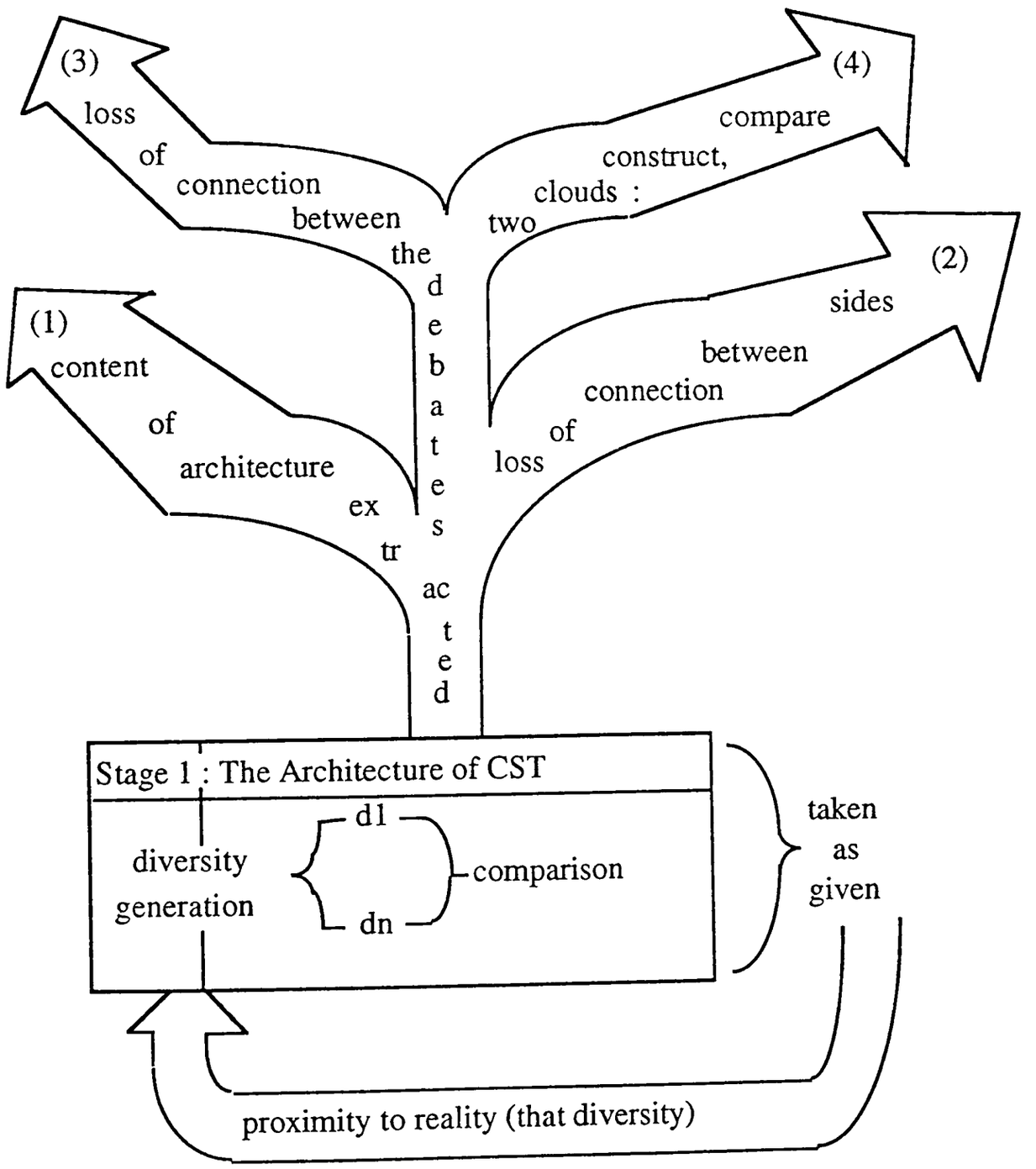
> "... we are as backward as any savage, though education helps us to conceal this from ourselves and others."
>
> (Bellow, 1992, p.13)

In this quote we witness a play between two 'clouds': the savage cloud; and the education cloud. We could classify the savage cloud as 'the issue', 'the debate', 'the concern'. We could classify the education cloud as 'the construction', 'the knowledge', 'the architecture'. To this extent, therefore, we need to understand these clouds, and their relationship to the 'constructive' and 'comparative' desires. We show in the Acuity that the Architecture is an example of that 'cloud' (shown earlier as two clouds: desire to construct and desire to compare) which protects ourselves from recognising that we are as backward as any savage. If we continue to tackle the problematics that this cloud raises then we will begin to recognise how acute epistemological exercises need to be, how we need to exercise an Acuity upon constructions. Throughout this chapter we will question the constructive method of the Architecture, questioning the reasons why constructions are made, and the reasons that are given in justification of the constructions.

To re-iterate. In the first stage, the Architecture of Critical Systems Thinking is built and compared. In the second stage we look very closely at this building process in order to understand the issue(s) that may lay before it, or are a

consequence of such building. In the Acuity we therefore have one main de-constructive aim that requires a clear process to be recognised. Using the diagrams already explained we can show the process in this manner:

Figure 8.7 The process of the Acuity



Stage 1 is contained, in a neat constructive manner, while Stage 2, in its de-constructive manner, cannot be so contained. The first stage is the 'Architectural box' that generates diversity and compares that diversity. The second stage is the process from the box that cannot be contained, the process that takes the Architectural desire as given and seeks to 'get close to that diversity' by extracting the content, losing the connection between the sign-posts and debates, and discovering the two clouds of construction and com-parison. The Acuity works in detail upon the given construction of the Architecture in its generality.

An attempt has been made here to contain the second stage, but as we read through this chapter we will begin to realise its inadequacies. Stage 2 is the 'attempt toward proximity', which develops into four distinct stages (the four branches). This diagram is, therefore, the 'Acuity of CST'. It is the process that will be implicitly followed from the 'Architecture of CST'. It will keep to the basic chapter format shown in the first stage (the only change being the necessary process before structure), and in keeping to this strict regime will allow for a clear de-construction of that which has been constructed.

In order to appreciate this second stage and its relevance to the efforts of the first stage, we must give this eighth chapter three moments. A first moment that offers an Acuity of de-construction for the reader (section 8.1). A second moment that offers a comparison, where the 'self' is Architecturally given, and the Acuity de-centres the self (section 8.2). And a third moment

that shows the relevance of these preceding moments for the process of the Acuity as *Intertextual knowledge* (section 8.3). These three moments will theoretically develop the process of the Acuity.

8.1 DE-CONSTRUCTION OF THE ARCHITECTURE

De-construction begins wherever it finds itself. This is not an arbitrary position as the de-constructed beginning is always subject to historical necessity, in this case the historical necessity of the Architecture of CST. Historical necessity can be seen here as the whole rationality that embraces the Architecture. The historical necessity of the Architecture involves a whole interpretation of the 'metaphysics of presence'. It is the metaphysics of presence that develops the Architecture. We can clarify this 'metaphysics' with the adoption of Dialectical-Forms within the Four Epistemological-Levels. As stated in the first stage, the Dialectical-Forms rely upon two 'presences': oppositional thinking and intelligibility. To oppose is to oppose a 'presence' with another 'presence' that recognises the 'presence' of the other. To be intelligible is to assume a 'presence' with that which needs to be made intelligible. These presences assume that each Form (or each concept) can be seen in the light of intelligibility, that each Form can be seen as a separate point, recognisable overtime and indeed more and more recognisable as we 'recognise' it more. To this extent we can suggest that the Dialectical-Forms assume a 'homogeneity of concepts', in that we assume that the recognisability of the Dialectical-Forms improves along with our trained cognition: it is

assumed that the relationship between the cognition and the Dialectical-Form favours ever increasing recognisability. It is necessary for the Dialectical-Forms to assume this in order to show the possibility for the construction of an Architecture. For in order to construct there needs to be a high degree of certainty, and we here witness that this certainty is artificially created by enforced notions of recognisability. The consequences of this enforced certainty become the concern of this second stage and this section in particular.

The Architecture of CST employs Dialectical-Forms from Plato and Hegel at a foundational stage. Plato's *dialecktike* and the Hegelian method wish to divide in order to clarify and enhance future re-unifications. The Hegelian method, though not closely resembling the Architecture, nevertheless shares a desire to replace method (in its certainty and repeatability) for truth. Truth is unrepeatable, but we only possess repeatability as method as a means to 'shadow' truth. Accordingly, as we wish to discover truth we are forced to seek a method that becomes as unrepeatable as possible. The Dialectical is as unrepeatable as possible precisely because it lies in ever changing correspondence between two inter-related opposites. We posit the Dialectical method, therefore, as potentially the nearest way in which we can discover truth, but in our enthusiasm we fail to recognise that the Dialectical method is not truth but method, in effect we cannot help but mistake method for truth (we can only question the 'correctness' of a method, and we mistake this correctness for truth itself). The method to achieve truth becomes truth itself (Gasché, 1986) as thought is represented as systematic and genetic in its holistic constitution. We need to think about the relationship between 'truth' and 'method' and not simply espouse a 'method' regardless of the complexities of

'truth'. We need to de-construct the most common method in the ArCST, we need to de-construct the Dialectical-Forms. We begin in stating that de-construction "... includes the de-construction of dialectics, in both its Platonic and Hegelian sense." (Gasché, 1986, p. 122) as it questions the self-exposition of truth as a concept. For De-construction, truth is not an isolatable commodity that exposes itself in conceptual convenience, rather, truth belongs to a space anterior to the metaphysics of presence, anterior to the Dialectical-Forms. The Architecture of CST employs the metaphysics of presence, the Acuity of CST questions the metaphysics of presence. The Acuity suggests the interested reader should look at logical inconsistencies (with a focus upon 'possession of reality') and conceptual homogeneity.

Logical inconsistencies arrive because of the appeal to the ethic of logical consistency. This ethic has two specific forms, *ethico-teleological* and *ethico-ontological* (Derrida, 1977). This ethic has dreams of totality, cohesion and plenitude which are enacted through teleological plenitude (more observations, more Dialectical-Forms imply an increased proximity to truth) and ontological totality (this plenitude will eventually lead us to a totality). In order for these dreams to show more than themselves they must suppress contradictions, and the best way to suppress contradictions is to continually repeat the 'same' action upon the 'same' concept:

> "Hence the history of philosophy is the expression of the need to think these concepts, again and again, in a satisfactory and desirable manner - satisfactory, that is, according to the principle of non-contradiction." (Gasché, 1986, p. 127)

This repetition allows for an 'evasion of insight' in that discrepancies are overlooked in the interests of non-contradiction, an evasion of insight that recognises the constant need for conceptual homogeneity. Conceptual homogeneity can be disproved by the process of conceptual formation (the Architecture is here represented as the 'concept' and the Acuity is represented as the 'process')(Gasché, 1986, p.128-130), the process has four stresses:

1. A concept develops from predicates where one central predicate is determined by the other predicates.

2. A concept develops in its effort to create an interval from 'what it is not', but this interval constitutes the concept, and paradoxically the concept must include 'what it is not'.

3. Concepts develop within conceptual chains constantly relating to a plurality of other concepts, where their meaning is dependent upon their position within the chain.

4. One single concept has more than one function.

The Architecture responds to the ethic of plenitude in its desire to identify a plurality of discourses within Systems Thinking within the totality that is the Architecture. The success of the Architecture depends upon its ability to establish conceptual homogeneity, and this establishment is stifled by the

Acuity. Conceptual homogeneity raises its possibility upon the impossibility of suggesting an incoherent thesis. Once we see certainties within a thesis, once we see repetition, we begin to have faith in that thesis, as that thesis can be depended upon as a receptacle for repetition, and this can be seen as one of the main agencies of the Architecture. Conceptual homogeneity becomes structural consistency (one of the requirements of the Architecture) once conceptual visibility becomes a priority. Conceptual visibility is the height of non-contradiction in that a structure is developed in isolation in order to show the benefits of organised isolation. Conceptual visibility requires 'closure' and a 'fixed origin'. The Architecture becomes closed as soon as a line is constructed between the epistemological levels, and between the main debates. Further closure becomes inevitable when the epistemological levels are applied to the main debates. This application shows the fixed origin, from the centre to the borders. It is fixed according to the influences from the borders, but to maintain the borders (and why construct a border if the wish is not to maintain that border) is to restrict such influences. The 'closure' and the 'fixed origin' are the unifying principle of the Architecture:

> "Structure is first the structure of an organic or artificial work, the internal unity of an assemblage, a construction; a work is governed by a unifying principle, the *architecture* that is built and made visible in a location. " (Derrida, 1978, p.15, my emphasis)

The unifying principle of the Architecture is provided within the Architecture, fostered as a unity of form and meaning. Where the form of the Architecture

is the meaning of the Architecture, this act secures the morphological and geometrical dominance of the Architecture, a dominance that relegates the notion of 'Architecture as metaphor' (see chapter ten) within the unifying principle. The shape and construction of the Architecture is seen as more important, in its repeatability, than the metaphorical nature of the Architecture. Acuity reverses this dominance, not by some will, but by a necessary opening of the Architecture. This opening becomes the 'infrastructure' of the Architecture (Gasché, 1986, p.145-156). The complexity of this term becomes evident when Gasché notes that it is pre-ontological and pre-logical. These two terms refer to infrastructure as not being present or not being absent (pre-ontological) and therefore resisting the logic that is the metaphysics of presence (pre-logical). Infrastructure is the difference between, the opening within, the maintainer of contradictions, infrastructure "... will speak within contradiction without contradiction. " (Gasché, 1986, p. 151). Infrastructure will speak within the Architecture about the Architecture. The Acuity is able to show the contradictions within the Architecture by respecting the infrastructure of the Architecture (and here we must note that 'infrastructure' is non-Marxian, as it seeks to maintain the contradictions that the Marxian dialectic seeked to historically overcome), the main contradictions arriving with the structural and conceptual unities within the Architecture.

These conceptual and structural unities are the 'dream' of the 'metaphysics of presence', as once the Architecture produces an entity, that entity can be possessed in its own simplicity. Possession becoming a logical contradiction, since to possess is to ignore conceptual interdependency. It must be the case that the Architecture must be able to stand up to critical attacks, and in order

to remain after those attacks it must produce an ethic of 'self-identity': the Architecture must be able to identify itself in order to maintain itself. But with what does it identify itself? With the Acuity. And yet the Acuity shows us that the Architecture is built upon logical contradictions, and if this is the case then all notions of self-identity are lost through a de-constructed self (the interest of the following section). But if the Acuity is ignored or ontologically restricted, then the Architecture maintains its self-identity despite it being identified as lacking a self. This problematic is developed by Calvino in *Invisible Cities* (1974). The emperor, Kublai Khan, wishes to have access to his vast empire: his ambassador Marco Polo visits and narrates. The Emperor, in his Cartesian vulnerabilities, supposes that he could be dreaming himself and his world into existence: his ambassador visits and suggests an 'other' to narration. The Emperor likes the suggestion: his ambassador plays chess with him. This three stage process begins with a question: how can I (the emperor) possess the real (my empire)? (1) And must be satisfied with the inexhaustible play of differences that is the game of Chess. The game of Chess is to represent the emperor's empire more 'realistically' than narration but the emperor is forced to realise that the more 'present' the cities become the more invisible they become (Franke, 1989)(2). The emperor cannot 'possess' his cities, he can only de-construct their metaphysical categories (3), a de-construction that shows the emperor that each city is an antithesis of originality, that originality that demands possession. To posses, therefore, is to possess nothing, an abstraction, an invisibility (Origins are before construction, before presence, before convention). His desire for possession produces the game of chess, a 'generative model'. This is analogous to the Architectural generative model that deduces all 'cities' and in doing this deduces nothing:

> "The mentality with which the real has been sought in our civilisation has always been imperial; it is always only with designs of possessing comprehensively and controlling the real that we have been interested in it at all. " (Franke, 1989, p.36)

The Architecture must also be guilty of this possessing urge and the ensuing imperial mentality. In the quest to find the 'essence', the 'real', the Architecture discovered, in its Acuity, that 'what is not really there is what counts', 'what is not real is more real', 'what is invisible is more visible': in our effort to generate sight we see nothing. It is the case, according to Calvino (1986), that we can never force change, as things are always more complicated than we thought. We can never force an Architecture upon CST, instead we must respect the plurality of discontinuity of the Acuity of CST. The logic of Calvino appears to dispel logic as a continuous force, in that an Acuity must offer "... a discontinuous city - a happiness, a fulfilment which does not and cannot remain self-identical." (Franke, 1989, p.41). We cannot possess an Architectural logic that preserves its self-identity, instead we must seek discontinuity through the serious play of difference within the fundamental (to the Architecture) Dialectical-Forms. We must not struggle to overcome the Dialectical-Form, instead we must affirm the *différance* of the Dialectical-Form (Franke, 1989, p.38). This affirmation searches for logical inconsistencies (lying beyond the scope of the Architecture) and conceptual homogeneities (lying as the scope of the Architecture) as a de-construction of the first stage.

8.2 ARCHITECTURAL SELF AND DE-CENTRED ACUITY

The de-construction of the Architecture continues with an appreciation of the manner in which the Architecture develops a notion of 'self'. Such a development is necessarily challenged by the de-centred Acuity. In the introduction we witness the de-centred Acuity as it questions the construction of the Architecture, a questioning that cites four processes: the extraction of the Architectural content; the loss of connection between the two structural sides; the loss of connection between the debates; and the de-constructed 'clouds'. It is useful here to establish a clear relationship between the constructed Architecture and the de-constructed clouds, as the de-constructed clouds are the furthest away from the constructed Architecture (if we accept the logic of the process in this second stage). The constructed clouds precisely form one epistemological level upon another epistemological level; one debate in accord with another debate; one epistemological level in response to a debate; and the consequential contentment of the Architecture (we must, however, note the existence of 'satellites of critique' which can be seen as a pre-cursor to the Acuity in its critical approach to the unity of form and meaning within the Architecture). The de-constructed clouds cannot accept such a precise relationship between the levels and the debates and the consequential contented form. Instead we find the issues and the epistemological levels clouded. The meaning of the Architecture becomes clouded in that the 'form' can no longer neutralise the 'meaning'. In its constructed form the Architecture allowed itself to preserve, or neutralise, meaning in its precise "... meaning rethought as form;" (Derrida, 1978, p.5). The Architectural form necessarily restricts meaning

within its Dialectical foundation: meaning must respond to the Dialectical-Form, meaning must be intelligible and potentially oppositionary. In this response we find meaning being lost within the form, effectively neutralised. The cloud of Acuity shows this act of neutralisation as an attempt to isolate the Architecture from historical and pragmatic aspects (Gasché, 1986, p. 142) to deprive meaning of its formlessness, a formlessness that

> "... creates meaning by enregistering it, by entrusting it to an engraving... whose essential characteristic is to be infinitively transmissible." (Derrida, 1978, p.12).

Here, in the Acuity, the meaning (the formlessness, the cloud) creates the form as it passes along the engraving. As it transmits, the meaning highlights the form (for a moment): the Architecture is given an Acuity.

The form of the Architecture, in its neutralisation of meaning, creates its 'self'. The clouds of the Acuity, in its accreditation of meaning to form, creates a 'de-centred self'. A useful parallel can be drawn here with Tseëlon's (1991) work on the 'self'. She presents the self as 'Cartesian' and 'Post-Cartesian'. The Cartesian self represents the romantic (autonomous self, supremacy of emotions) and modern (essential qualities, clarity) selves in their oppositional Dialectic of the 'deep interior' (see Gergen, 1992, for a brief summary of his tripartite romantic-modernist-postmodernist selves) and the 'external part'. This Dialectic operating as a stabilising device for truth can be seen as having some relevance for the construction of the 'self' within the Architecture.

> "The move from the Cartesian to the Post-Cartesian self marks an ontological shift from coherence to fragmentation, and from essentialist entity and ontological unity, to ontological dialectics." (Tseëlon, 1991, p.4).

We find an ontological dialectic that places Cartesian 'production' against Post-Cartesian 'reproduction', though we must take care here, as we can begin to see the power of the Architecture in its attempt to stabilise the Dialectic into neutralised 'meanings'. As stated above we must resist such stabilisations as they reduce meaning to form. Such reductive attempts are at play in Tseëlon's work in that the Post-Cartesian only has meaning when reduced to a form (reproduction) alongside the Cartesian form (production): the Post-Cartesian is merely an extrapolation of the Cartesian, a reproduced 'form' (this being one of the many problematics of postmodernism: the problematic of 'the extrapolation of the problematics of modernism'. In this sense there is no 'post' modernism, but merely an 'extrapolated' modernism, or an 'exaggerated' modernism which shows the folly of the initial Cartesian production). To develop an understanding of the reductive qualities of the Architectural self with regard to the formless qualities of the clouds of the Acuity we must look at Foucault's self (a self that is entirely dependent upon the constructive 'wishes' of social practice, (Dews, 1989, p.38)).

Foucault's self is given form when the meaning of the 'unthought', the 'other', and the 'transgression' are considered (Lemert and Gillan, 1982). The 'unthought':

"... relies on the assumption that knowledge, being historical, not pure, is always created by the imposition of some limit.... The unthought, therefore, forms the limit within which actual knowledge is produced...[an actual knowledge where] Thinking is Man's reflection on the Other in which he knows himself." (Lemert and Gillan, 1982, p.137)

The unthought helps to control knowledge by placing a limit upon knowledge (an example from Foucault's volumes on sexuality could be the 'unthought practice of masturbation'). The thinker must focus only upon what 'must be thought', and this is very strictly given in every discourse. The unthought is the cloud in the Acuity in that meaning dominates form to such an extent that the form (and consequent meaninglessness) of the Architecture can be isolated as the 'thought' (being limited by the Dialectical-Forms throughout). The unthought relies upon the 'other' as man's thinking must reflect upon the 'other' in order to know him-self. The 'other':

"... characterise[s] the problem of the subject. If one attempts, as does Foucault, to criticise the anthropological notion that knowledge is rooted in the subjective consciousness which in turn is taken as a medium for an original truth, then knowledge must be relational.... Foucault's solution, however, is not that of Phenomenology, and kindered movements, in which the Other is the Alter of a subjective Ego and, as such, a mere displacement of subjectivity into intersubjectivity. Foucault's Other is the

> Unthought, a theoretical space, itself without limits [formlessness Acuity], which defines the limit of socially acceptable thought.... Thought is not the expression of the inner truth of the Subject... [but an Architectural statement] with respect to that which it is not, hence in a void [or a cloud] that cannot be formally described. This is why Foucault's writings always situate his concepts and descriptions in unfamiliar terms." (Lemert and Gillan, 1982, p. 134)

The Other is the continual reference for the 'self': The Acuity is the continual reference for the Architecture. Without the formless that is the cloud, the constructed form would have no meaning, and yet the constructed form is at pains to distance itself from its de-constructed 'other' as this shows what is being 'politically repressed' by the constructed Architecture. Such a relationship between the Acuity and the Architecture does not strictly obey the Dialectical-Forms in their oppositional and intelligible manner (to do this would mean being subsumed within the constructed Architecture) but shows the limits of oppositional thinking by showing the limits of intelligibility (as politically given and politically enforced). The relationship between the Acuity and the Architecture can, therefore, be seen as an understanding of the Dialectical-Form, but not as necessarily being involved within the rationality of the Dialectical-Form. A rationality that supports oppositional thinking only in an intelligible form **can** be understood by a rationality that views this intelligibility as a repression of the 'Other to intelligibility', where the Other is not 'a mere displacement of subjectivity into intersubjectivity' but a definition of the constitution of the 'Self', a 'Dialectically-Formed self'.

To further show the Acuity that constitutes the Architecture we must consider Foucault's notion of 'Transgression'. As already stated above, Knowledge is always constructed by the imposition of some limit and, therefore, can never be seen as pure:

> "As an alternative, Foucault holds that knowledge is gained only by the criticism of knowledge. Thinking, therefore, is a continual *transgression* of established norms of truth. Thinking is a political act because these norms are socially constructed and maintained." (Lemert and Gillan, 1982, p.137, my emphasis)

It is the act of transgression that becomes the establishment of any notion of 'truth'. Truth is not to be located in a subject, a self, or a concept (the structural emphasis given in stage one), but in the process that establishes these subjects, selves, and concepts (note here that a plurality of structures must be tolerated since a plurality of structures goes some way to understanding the constitutional complexity of processural truths). In the act of transgression we find that the notion of 'truth' is little more than an 'accepted method'. As we have seen already in this chapter, the method becomes the truth (in the Platonic and Hegelian interpretations), the 'accepted truth' is the 'accepted method'. The benefits of this movement from truth to method are reflected in the apparent successes of the Architecture, where the Architecture represents the 'method as truth' thesis in three particular phases (Dialectical-Forms, Cross-Dialectics, Cross-Generics) and in doing so defines 'truth' as a relational modification of these phases (Pluralism). The escape of endless relational modifications

necessarily becomes one of the main problematics of the Architecture, endless self-references are not sufficient (in the Habermasian sense). Instead we must transgress in our criticism of knowledge in order to continually show the 'established norms of truth', and it is the process that discloses these 'norms of truth' that necessarily becomes the 'truth', but not in a singularity. Transgression in its search for historical and pragmatical contingencies overturns 'truth' as 'norm' and continues to show that 'norm' is the only 'truth' in an Architecture that can only witness the stabilised 'norms manifesting themselves as truths'. Transgression is the process of the Acuity that continually overturns the 'method as truth' thesis of the Architecture.

We can begin to recognise the process of the Acuity through these three meanings which offer a form that can criticise the intentions and manifestations of the Architecture. The three meanings being: **Unthought, Other,** and **Transgression.** The process of the Acuity '*transgresses* toward the *unthought* to the *other*', as it searches for contingencies in its transgression, contingencies that are repressed in the unthought and in the other. These contingencies do not establish truths but de-establish truths and act to show the potential de-establishment of potentially limited truths. The process discloses these limits within the Architecture. However, we must always recognise that the historical profundity of the Architecture (in its structural bias) will always force reduction of process into structure:

> "So deep does structure run in our mental habits that when we actually try to analyse process we turn it into structure." (Cooper, 1989, p.480).

Contingencies are processural phenomena, but they can only be understood Architecturally when one structure is opposed to another structure. The transgressive nature of the Acuity shows the structural limitations of 'strength and weakness' (the apparent strength of universals and the weakness of contingencies) and how they must be re-addressed in order to witness and create our own contingencies:

> "The line between weakness and strength is thus the line between using language which is familiar and universal and producing language which, though initially unfamiliar and idiosyncratic, somehow makes tangible the blind impress all one's behavings bear." (Rorty, 1989, p.29)

To impress is to witness the creative force of the process upon the structure. Meaning dictates form, no unity is privileged between meaning and form, only the creation of contingent meanings can offer tangible forms (since to be tangible is to possess the possibility of being 'touched', a physical presence) which then make an impression upon the Architecture. The de-centred cloud of the Acuity transgresses the constructed self of the Architecture by creating contingent meanings (from the Other and the Unthought) and in this way the process dictates the structure, the structure becoming a poor relation.

Having shown how we can de-construct the Architecture (8.1) to reveal the Architecture as self and the Acuity as de-centred self (8.2) we are now in a position to offer a possibility for intertextual knowledge (8.3).

8.3 THE ACUITY AS INTERTEXTUAL KNOWLEDGE

Intertextual knowledge states that any article or text

> "... is intelligible only in terms of a prior body of discourse - other projects and thoughts which it implicitly or explicitly takes up, prolongs, cites, refutes, transforms..." (Culler, 1976, p.1381).

Any article or text only makes sense as an intertextual article or text. This intertextuality has important implications for the process of the Acuity, in that intertextual knowledge must be aware of its own fictive qualities. Awareness of this allows the Acuity to emphasise the fictive qualities within the Architecture. We can emphasise this in two ways, firstly as a relationship between Philosophy and Literature (though in this eighth chapter we differ from the earlier Cross-Generics in that we now must recognise the effects of the two previous sections upon these two Generical-Forms), and secondly as a concentration upon the problematics of referentiality; asking, for example, is it possible to escape the complexities of the signifier in order to meet a signified? In the main case in this essay, the signifier is the relationship between the Acuity and the Architecture, while the signified is the prior texts within Systems Thinking (more specifically Critical Systems Thinking). It must be noted here that a step has already been taken in that we must assume that every text in Systems Thinking (in order to be recognised as being responsive to a contemporary problematic which has been highlighted by previous texts)

necessarily refers to other texts, and in fact gains more respect when it offers a plenitude of citations (see for example Jackson's (1989) review of Flood and Carson's *Dealing with Complexity*). The paradox is already clear: that which is signified is caught within the codes and rules of the signifier (intertextuality), and is a signifier for further signifieds (which are signifiers for.....). The question reduced: Is there an origin to the problematic that we are addressing, and what is an origin? Two routes (necessarily joined): Philosophical Literature, and referentiality.

The origin is lost once we enter into the space of discourse that we call 'conventional discourse', and yet it is conventional discourse that calls for origins (and origins can masquerade as 'universals' or 'rational consensus' or 'truth'). This apparent paradox lies with the desires of the authors to 'rest' their weary intellects in a haven that is guarded against the proliferating complexities of the modern epoch. This desire would resist a complex relationship between Philosophy and Literature as being 'non-philosophical' and regard all subsequent investigations into referentiality as a 'shying away from any attempt to intervene in problematical situations'. This desire must be highlighted (and has been in the first stage), but more importantly, we must realise that

> "... utterances or texts are never moments of origin because they depend on the prior existence of codes and conventions, and it is the nature of codes to be always already in existence, to have lost origins." (Culler, 1976, p.1382).

The problematic of intertextuality recognises this notion of 'lost origins', and in doing so relates all texts within a dialogue with other texts, as

> "... an act of absorption, parody, and criticism, rather than as autonomous artifact which harmoniously reconciles the possible attitudes towards a given problem... " (Culler, 1976, p. 1383).

Intertextuality, therefore, would see texts as being absorbed by their own call for signification (the signifying act of the text incorporates the text rather than the conventional notion of the text incorporating the act of signification). Texts are not independent, they can only exist when plotted alongside other texts that signify texts, texts are absorbed by the act of signification, unable to respond to a signified outside of this act. The reason why texts are unable to independently respond to a problem outside of the act of signification is because the problematic has been created by the act of signification, and a text only stands as a recognition of the potency of that particular act of signification, this is to say that: "... writing cannot be contained within the limits of a book... " (Norris, 1987, p.46). Traditionally we have come to believe that a book must exist as a totality, as an independent entity (see Hartman's (1981) literary treatment of these ideas). This recognition of the limitations of referentiality has important implications for the signified 'Systems Thinking'. We will now expand upon these implications in expanding upon the relationship between signifier and signified (the Acuity is here acting to pronounce this interest within the Architecture, and by doing so may affect its structural concerns, and by implication its practical worth).

Plato condemned literature as dangerous in

> "... failing to engage with reality while giving the appearance of doing so. Philosophy in contrast, he regarded as dangerous in a positive way, integral to the life of virtue." (Lloyd, 1992, p.37).

Literature can also be dangerous in a positive sense for Harrison (1991) in that it can engage in possibilities of what the world can be like through a Derridean notion of différance. Literature must be taken seriously, and with notions of deferred meaning (to question the concerns of referentiality) is able to open up possibilities that cannot be encapsulated by direct philosophical reference. There is an acceptance in some forms of Literature (notably post-modern) that reference to the outside world cannot be taken for granted, and in response to this, Literature offers 'possibilities' that offer re-inventions of the outside world, and also go some way to show that nothing can be present in itself, and if nothing can be present in itself then nothing can be directly acted upon in itself. Such varieties of Literature have developed with philosophical developments to such an extent that many forms of (historiographic) Literature (Eco's *The Name of the Rose* for example) reflect the concerns of contemporary philosophical investigations (Rorty's *Objectivity, Relativism, and Truth* for example). We may call this concurrent development 'Philosophical Literature'.

Philosophical Literature has as one of its main projects an interest in the problematics of referentiality. In maintaining the theme of this chapter we

will concentrate upon the referentiality of the 'self'. The notion of self (as discussed above) relies upon non-present notions, notions that cannot be referred to as they have become conventional and therefore out of the reach of theoretical abilities. Philosophical conventions have created this, and yet philosophical conventions wish to unproblematically continue to refer to the 'self'. Philosophical Literature, however, has the ability to re-create these conventions in a manner that enables a serious study of the conventional to take place (for example, the questioning of the convention of authoritarian sovereignty in Rushdie (1981), where authoritarian sovereignty forces the author to become non-present, to be outside of critical consideration). We must not, however, replace Philosophical Literature with Literature, as much Literature remains caught up in an acceptance of the conventional, and here we must make recourse to Plato as representing the conventional philosophy within literature. Plato wished to convey genuine truths (original truths) through *mimesis*, where material things could be ignored (along with the problematics of referentiality) and the philosopher could appeal to Forms (Dialectical-Forms) that could be known essentially as if 'written on the soul'. For Plato, a Form can be genuinely known in the mind, and the 'original' is that which comes directly from the soul through a process of mimesis. The Platonic original is, therefore, a restoration of a self-present meaning and truth (Norris, 1987, p. 57). This notion of the original, and its methodological assumptions, exist in many traditional Literary texts (for example, Victor Hugo's *Les Miserables*) and remains a challenge to the tenets of Philosophical Literature. The Platonic legacy still exists as one of the major elements in Western traditional thinking, and in order to contemplate the problematic of referentiality within Philosophical Literature we need to pursue its main aims a little

longer. The Platonic original can be reached directly by 'speech', and 'thought', we need look no further than the Socratic dialogues to reveal this. But in order to elevate these two 'truth-seekers' Plato must denigrate 'writing' (a paradox considering that the only way we can seriously study the Socratic dialogues is by reading). This denigration of writing is most clearly evident in Plato's *Phaedo* (1989) where the death of Socrates is seen as an occasion of profound philosophical importance. The Platonic soul is of greater importance than the body:

> "In matters of this sort philosophers, above all men, may be observed in every sort of way to dissever the soul from the body." (Plato, 1989, p. 49)

The Platonic soul correlates with speech, the Platonic body correlates with writing. These two correlations, to some extent, explain the privileging of speech within Plato's works, as Socrates' death is seen as the final release from the bodily torments that have lead him to death. As the soul is superior, the death of Socrates can be seen as a blessing. Socrates drank the poison which became the cure (*Pharmakon* in Ancient Greece meant both 'poison' and 'cure'):

> "I thought that in going to the other world he could not be without a divine call, and that he would be happy..." (p.490).

One of the clearest assertions of the ascendency of the soul with direct reference to the limitations of the body within which it is housed while on earth, is given on pages 497 and 498. Let us now briefly study this in relation to the visibility of the Architecture and the 'cloudiness' of the Acuity:

> "And he attains to the knowledge of them in their highest purity who goes to each of them with the mind alone, not allowing when in the act of thought the intrusion or introduction of sight or any other sense in the company of reason, but with the very light of the mind in her clearness penetrates into the very light of truth in each; he has got rid, as far as he can, of eyes and ears and of the whole body, which he conceives as only as a disturbing element, hindering the soul from the acquisition of knowledge when in company with her - is not this sort of man who, if ever man did, is likely to attain the knowledge of existence?"

The 'introduction of sight' is writing, as writing can be seen, in the same way the body can be seen. The 'light of the mind' is an intelligible entity that is necessarily divorced (or 'dissevered') from the body (Platonic Dualism) in order to allow the direct penetration of the 'light of truth' to the soul. The soul cannot be seen in the same way that speech cannot be seen. If the 'knowledge of existence' is to be known, it is to be known only intelligibly, intelligibly through the Dialectical-Forms. To complete the Platonic picture, we must relate this form of knowledge gathering with the Dialectical process, this is succinctly given below:

> "Are not all things which have opposites generated out of their opposites?... And in this universal opposition of all things, are there not also two intermediate processes which are ever going on...?" (Plato, 1989, p.502-503)

This oppositional arrangement allows Plato to collapse oppositions, to collapse the complexity of writing to the authenticity of speech. The *Pharmakon* in its undecidability (Cooper, 1989, p. 486) corresponds to the complexities of writing, where one word has two meanings. Two meanings that need to be reduced to one meaning in speech. Two meanings that are always co-present within the written word. Two meanings that must be separated by time (to *defer*) and space (to *differ*) in the act of différance. For Cooper, the *Pharmakon* must be seen in a processural way in order for the act of différance to be taken seriously. A process that must be documented in writing as it is writing that requires temporal and spatial differentiations in order to be stabilised. For Derrida, the oppositional arrangement is not generated from opposing terms, but from the process of différance, a process that is continuously absent (as the Acuity eludes detection), unlike the two opposing terms which in their Platonic certainty can be called upon to oppose their opposite in order to arrive at a balanced truth (as the Architecture wishes to be detected). This difference between Plato's structural project of constructing opposing terms in a Dialectical fashion and Derrida's processural project of showing how absence dictates the movement of différance is the difference between the Architecture and the Acuity. The Intertextual qualities of the Architecture can be highlighted by the Acuity but only to a limited extent, since the Architecture

seeks to elevate structure over process (the Dialectical-Form over the différance) while the Acuity wishes to elevate process over structure (the différance over the Dialectical-Form).

CONCLUSION

The Acuity of CST elevates process over structure. Introducing this theme, the Acuity directly addresses the structural aspects of the Architecture by showing the de-construction of the Architecture in four distinct stages (the extraction of the content; the loss of connection between the 'signposts'; the loss of connection between the 'issues'; and the de-constructed cloud). These four stages are then used to highlight the structural dependencies of the Architecture, dependencies that are shown in three sections: the de-construction of the Architecture; the Architectural self and the de-centred Acuity; and the Acuity as Intertextual knowledge.

The de-construction of the Architecture offers a criticism of the 'metaphysics of presence'. Two examples of this metaphysics are to be found at the foundation of the Architecture, in the Dialectical-Forms. Platonic and Hegelian oppositional thinking and intelligibility are questioned, and a relationship between 'conceptual homogeneity' and 'structural consistency' is proposed. The 'possessing urge' of the Architecture is the result of this

structural consistency and this is related to an antithesis of originality. This first section, overall, questions the construction of the Architecture by employing Infrastructural devices.

The Architectural self is compared to the de-centred Acuity in the second stage. Developing upon the first section, the Acuity is now able to demonstrate a clear relationship between 'form' and 'meaning' within the Architecture. The Architecture privileges form over meaning in order to maintain the 'self'(identity) of the Architecture. However, this leads to a major paradox, and is discussed by the de-centred Acuity. The de-centred Acuity is able to recognise the Architecture's relationship between form and meaning as its processural nature de-constructs form to reveal meaning. This section ends with a Foucaulvian notion of self which 'transgresses toward the unthought to the other'. Foucault's self is a contingent self, a de-centred self, a self that can criticise the assumptions of the Architecture.

The final section explains Acuity as Intertextual knowledge. Intertextual knowledge is constantly aware of the loss of originality through the prior existence of conventional discourses. Nothing is 'pure', truth is not 'pure', as notions of truth are dependent upon prior notions of truth. The fictive qualities of this 'loss' are related to the Architecture in an effort to develop a Philosophical Literature that is not dependent upon the Generical-Forms. This 'loss' is then related to Platonic notions of originality and a debate concerning authenticity and the denigration of writing is entered into. These Platonic notions are seen as inherent to the structural consistency of the Architecture, in that the Generical-Forms are reliant upon Platonic references to the

Dialectical-Forms. To this extent the Platonic project of Dialectical-Forms is Architectural in nature, while the Derridean project of de-construction (différance) is Acute in nature.

We could summarise this eighth chapter as offering a processural critique of the first stage, the Architecture. The process of the Acuity has been intertextually related to the structure of the Architecture.

CHAPTER NINE: THE STRUCTURE OF THE ACUITY OF CST

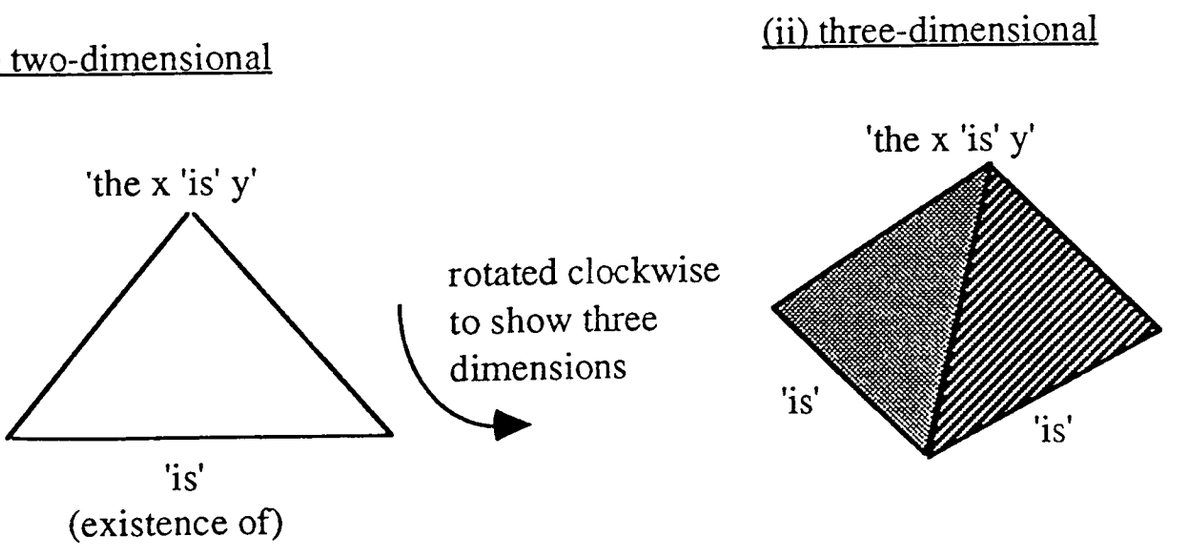
INTRODUCTION

The Structure develops as a result of the process of chapter seven. If we refer to chapter seven, we will see that the process culminated in the two clouds that enabled a de-construction of the first stage. The two clouds are: the 'cloud as desire to construct', and the 'cloud as desire to compare'. These two clouds become the 'structure' of the Acuity. This structure, however, is not a stability, as the conventional meaning of the word would lead us to believe. Instead, this structure is an 'opportunity'. An opportunity to benefit from the processural understandings of the Architecture that were achieved earlier. This opportunity has given a clarity to the twin desires of 'construction' and 'comparison', where construction relies upon the foundational and contradictive Dialectical-Forms, and comparison relies upon extrapolations of this basic contradiction (see section 8.1 for the methodological details). In recognising these twin operational desires within the Architecture we must accept that an opportunity exists to develop a structure (to construct) that does not neutralise meaning (to compare, where the accreditation of meaning to different projects shows the potential for comparisons to be made. Such a potential becomes the interest of the last section in chapter five)(see section 8.1 again in order to clarify the 'unifying principle' of the Architecture). In beginning to respond to this

opportunity we need to closely appeal to the structural value of the three words: **Interpretation**, **Representation**, and **Meaning**. These three words must be referred directly to the structural intentions of this chapter. They rely upon the understanding of the Architecture given by the previous chapter, they interpret this process, represent it, and give it meaning. However, a meaning that develops from a process that does not neutralise meaning. We are able to do this when we strictly adhere to the conditions that are passed on from the Architecture to the Acuity, these conditions firstly privilege structure over process (stage one), and continue (necessarily) by privileging process over structure (stage two). The first stage proceeds within a structure, the second stage sees opportunities to structure as it proceeds. As already mentioned, an example of this opportunity is the two clouds. This chapter interprets these two clouds as 'a **structure** that maintains **meaning**' (reference must be made here to the structural neutralising of meaning that forces a critique from the Acuity in chapter eight). The three words can now be directly related to the structural intentions of this chapter: the **structure** will be developed by an **Interpretation** that becomes a **Representation**; and the maintenance of **meaning** will be developed by **Meaning**. The interpretation is, therefore, represented, and the meaning (as a concept that requires study) will be maintained as a consequence of our study into interpretation and representation. This direct relationship now enables us to introduce the make-up of this ninth chapter. The first section, 9.1, will consider Interpretation as a structural feature of the Acuity. The second section, 9.2, will consider Representation as a structural feature of the Acuity. And the third section, 9.3, will consider Meaning as a structural feature of the Acuity.

The use of the three words, Interpretation, Representation, and Meaning needs to be very precise because the structure of the Acuity is not wanting to cover as much ground as possible, in an Architectural style. Instead, the Acuity is wanting to 'pin-point' by involving as little ground as possible. The interest that motivates this activity admires detail more than it admires generics (or indeed Generical-Forms). To represent this interest we will construct what will be the *'Structure of Acuity'*. The Structure of Acuity takes its main inspiration from Wittgenstein's *Philosophical Grammar*. This Structure must be seen alongside the Structure of the Architecture in order to achieve an adequate understanding of the intentions of this Structure: the generality of the Architecture to be compared to the specificity of the Acuity.

Figure 9.1 The Basic Structure of the Acuity



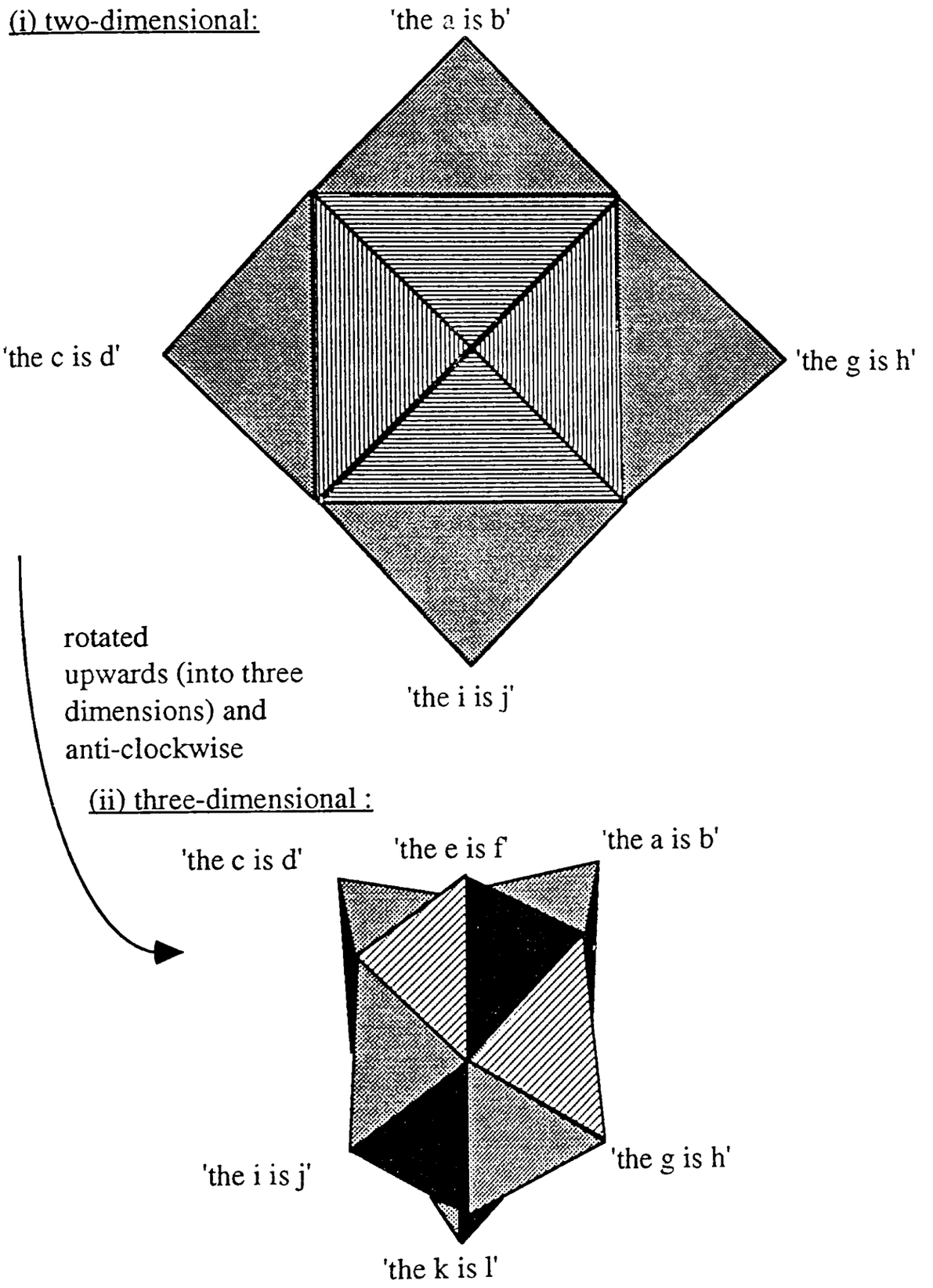
The Basic Structure of the Acuity (Figure 9.1) is the 'detail' of the Structure of the Acuity. The Basic Structure is a square-based pyramid, represented here by a side-view which is triangular, which is then rotated clockwise to show the three dimensional pyramid. The square base rises to a 'pin-point'. The square base represents the existence of the word "is" in its non-meaning state (where 'non-meaning' refers to a formalism of the existence of "is", where the form dictates the meaning). The pin-point represents the operation of the word "is" within the meaning state (within a sentence). (The relevance of these terms will become clearer as we proceed through this introduction). In order to clarify the significance of this structure to the words Interpretation, Representation, and Meaning we need to refer to Wittgenstein. Wittgenstein's notion of *meaning-bodies* (1990, p.53-54) is the starting place for this structure. It is suggested that the word 'is' has different *meaning-bodies*, where the word 'is' takes on different *meanings* when it becomes operational within different sentential *bodies*. For example, "..."The rose **is** red" has a different meaning from the "is" in "Twice two **is** four"..." (Wittgenstein, 1990, p.53, my emphasis). In the first meaning-body "is" can be seen as the existence of a visible quality (to be red) upon a physical substance (the rose). In the second meaning-body "is" can be seen as an equality between two abstract, mathematical terms. In both these cases the meaning of "is" within the body of the sentence is different, and yet the word "is" shows no visible change. To begin to understand the operation of "is" is to begin to understand the detail of language, to begin to understand the Basic Structure of the Acuity. The Basic structure of the Acuity attempts to **Represent Interpretations** of the many **Meanings** of the word "is". The possibility of the many interpretations is given by the existence of

"is" at the base of the pyramid. The possibility of the many representations is given by the pyramidal structure. And the possibility of the many meanings is given by the general sentence 'the x "is" y'.

In order to clarify the *Basic Structure of the Acuity* a more extensive *Structure of the Acuity* is proposed (see Figure 9.2), where the Basic structure rests upon a two-dimensional square, the Structure rests upon a three-dimensional cube. The Structure of the Acuity shows the way in which "is"becomes operational in six *meaning-bodies*, each of the meaning-bodies corresponding to each side of the cube (this is compared to the one meaning-body in the Basic Structure). As more meanings can be represented in the structure, it better demonstrates the intentions of the chapter. The Structure begins with a 'centre' that represents the existence of "is" and works out to the detail of its meaning-bodies. The existence of "is" becomes the Architectural structural base, and the meaning-bodies become the structure of the Acuity. We must remember here that the Architecture is built using 'homogeneous' squares (see chapter two for the construction of the Architecture as a 'three by four' celled matrix) that are able to reside alongside themselves without any question of form dictating meaning. However, the Acuity is not given this privilege. Instead, the Acuity is a series of points that rely upon the Architecture for initial constitution (the basic "is" as a constituent within the plurality of meaning-bodies) but cannot be easily organised as if 'no tormenting space' exists between them (the reader will notice that each point necessarily separates out from other points and that this act of separation is vital for the maintenance of the meaning of the meaning-body). The difference, therefore, between the constitution of the Architecture and the constitution of the Acuity is the ease

with which cells can come together to form larger cells as compared with the impossibility of organising 'pin-points' that take up no recognisable space, and only take up space when reference is made to a *meaning-body*. Each meaning-body is separated from other meaning-bodies, but their commonality is the Architectural base (while the existence of this base is questioned, which is one of the main aims of this chapter). To be more precise, therefore, we must state that the *Structure of the Acuity* is the opportunity of the plurality of meaning-bodies, or in a more structural manner, the separating points. This maintains a high level of consistency between the Architecture and the Acuity, where the structural base is preserved in order to show how it can be developed. This consistency becomes the first instance of the preservation of meaning that the Acuity strives for. The Acuity preserves the meaning of the Architecture in order to develop meaning-bodies. It is consistent to maintain this structural base. However, to maintain it unquestioningly would lead to dogmatism. Accordingly, the Acuity uses the Architecture to develop its own meaning-bodies where the meaning-bodies separate out from the base (The Acuity opens up the meaning of the Architecture).

Figure 9.2 The Structure of the Acuity



The Structure and the Basic Structure will be referred to throughout this chapter. It will be referred to in three main ways: as Interpretation (9.1), as Representation (9.2), and as Meaning (9.3). This chapter, therefore, comes after the process of the Acuity as it attempts to Interpret, Represent, and accredit Meaning, to that process in offering a structure that develops directly from the constructed Architecture.

9.1 INTERPRETATION

Interpretation increasingly becomes a question of stressing the relativity of interpretations. This relativism not only affects the interpretations but the interpreters as well, as the relativity of interpretation "... increasingly commands the attention of both ... philosophers and literary theorists ..." (Stout, 1986, p.103), and here we witness the relevance of Philosophical Literature to this structural discussion (see the previous chapter). Relativism therefore exists as a relativistic term itself. Relativism with regard to terms, phrases, interpretations in general, and relativism with regard to the plurality of disciplinary interpretations; relativism across philosophy and literature in this case. Relativism, however, only has meaning if absolutism has meaning. To question and release the pretensions of absolutism is to release the same pretensions in relativism (because of their dialectical construction). To interpret, therefore, need not be a relativistic act as one moves form one idea to another idea, assuming this movement is a conscious act. For example, when one interprets an article in a journal one moves from the article to other articles, to other

articles that appear similar. Some interpretations are more relevant than others. We can suggest, therefore, that the act of interpretation is the connection between signs. But, it will not end or begin here as these signs are also interpretations (of other signs). Interpretation, therefore, is a continuous process. However, this is not to say that 'signs are interpretations' - we must not reduce the act of interpretation to the act of representation - interpretation is the organiser of signs. Interpretation, therefore, attributes different meanings to different signs. Throughout this basic introduction to interpretation we must remember that there exists no *essential* sign that corresponds to an *essential* act of interpretation. At the same time the possible relativity of interpretation and of signs is not an endless relativity, it is a finite relativity, made finite by its own contingency. To take the relationship between signs and interpretations within a certain time is to recognise their contingency, and this contingency restricts endless notions of possible relativities. We can suggest, therefore, that at any time a sign and its interpretation will have their own contingency. This contingency is not essential because it is not ahistorical. This contingency temporarily places a boundary around endless relativism. This contingency is shown by the many 'pin-points' on the Structure of the Acuity. And it must be recognised here that these pin-points are finite, made finite by the demands of space and time. To recognise this finitude is to recognise the possibility for Acuity. The possible relativism of interpretation, therefore, can be dispelled in two main ways, firstly by being conscious of the act of interpretation itself, being conscious of the way in which signs are organised; and secondly, by recognising the contingency of any interpretation, each interpretation being bounded by a finitude.

The finitude of interpretation, however, is often mistaken as truth. As if interpretation is able to transcend the conditions that call for the transcendental act, and then claim to be a 'true interpretation'. This call is the search for a non-empirical truth which raises problematics with regard to this transcendental act:

> "... the search for non-empirical truth about the conditions of the possibility of describability raises the self-referential problem of its own possibility." (Rorty, 1991b, p.54)

A 'true' interpretation must 'correspond' with the conditions of the possibility of describability. The Architecture sets down such conditions in its four epistemological levels (see chapter two) in that each debate must 'correspond' to the possibility of describability that is given in each epistemological level. These conditions become the 'truth' of the Architecture. In this second stage, however, these 'truth conditions' must be scrutinised. They can be scrutinised in three main ways, which all relate very clearly to the problematic of interpretation with reference to the Structure of the Acuity. The three main ways to question the Architectural premises are, and here we are directly questioning the (Architectural) sentence employed at the beginning of this paragraph: firstly, to question the overall problem of self-referentiality (the relationship between the conditions and that being conditioned such that the conditions are beyond being conditionable); secondly, to consider what a 'true' interpretation is to look like (when the conditions are satisfied by that which is conditioned

by them); and thirdly, to consider correspondence theory (the exacting relationship between the conditions and that being conditioned). We will look at each of these in turn.

Self-referentiality is a problem for any theorist who wishes to organise particulars within universals. Quite simply, these universals can organise particulars but cannot be referred to themselves. It is as if they do not exist in the same world, as if there are two worlds, a world of particulars and a world of universals. Perhaps this requires a little explanation. Looking at Plato's (1989) *Parmenides* we can recognise the problem of self-referentiality:

> "Every part is in the whole, and none is outside the whole. ...But if all the parts are in the whole, and the one is all of them and the whole, and they are all contained by the whole, the one will be contained by the one; and thus the one will be in itself. ... But then again, the whole is not in the parts ... [therefore], it must be in something else, or cease to be anywhere at all ... The one then, regarded as a whole, is in another, but regarded as being in all parts, is in itself ..." (p.393-394)

This is the problem of identifying the 'whole' (the universal) in relation to the parts (the particulars). The parts make up the whole, but the whole is not in the parts, it is in all parts, which is being in itself. (There is a very subtle difference here between 'the parts' and 'all parts'. Plato is suggesting here that the whole 'connects' the parts but is not a part itself). Therefore, the parts can

be identified as belonging to the whole, but the whole cannot be identified with the parts, that is to say, the whole has no self-referentiality because the whole has no 'self'. An example of such a 'self-less' entity, within the Architecture, is the Platonic Forms. The Platonic-Forms can organise the debates, but the debates cannot organise the Platonic-Forms (with their Hegelian and Marxian moments), this explains the vertical supremacy (see section 3.1) within the Architecture which creates 'satellites of critique' which promoted the existence of the Acuity as a critique of the Architecture. This example within the Architecture clearly shows the problem of self-referentiality, and more importantly, how it can all too easily be overlooked (by the relatively easy suppression of the un-contented satellites of critique by the contented cells). The problem of self-referentiality is considered by Wittgenstein, in *Tractatus, Logico-Philosophicus*:

> "Objects can only be *named*. Signs are their representatives. I can only speak *about* them: I cannot *put them into words*. Propositions can only say *how* things are, not *what* they are. The requirement that simple signs be possible is the requirement that sense be determinate." (as quoted in Rorty, 1991b, p.56)

When we interpret we can only *name* the object being interpreted, the name becomes the sign, the sign that enables us to speak *about* them. However, we are only able to use this sign, we cannot *put* the object *into words*, the sign is only a linguistic representation of the object. And representations only allow questions of manner (how) to be phrased, as questions of identity (what) become

self-referential. In order to relegate the problematics of self-referentiality within the control of this 'name-calling' process sense must be determinate, that is to say that the faculty that allows us to interpret objects must be immediate to those objects, or the 'name-calling' process is only a convenient classification procedure and is not problematic in itself. The name-calling process, therefore, cannot be objectified because of its immediate position, its 'non-objective' interface role between the interpreter and that which is to be interpreted. If it cannot be objectified, then the world has no substance (in this instance), and therefore sense cannot be determinate, and description becomes impossible because all that we have is the 'name-calling' process, we do not have the objects themselves. The objects themselves exist 'outside' of language. This 'name-calling' process is the condition of the possibility of description, of interpretation: "So the condition of the possibility of description must itself be indescribable." (Rorty, 1991b, p.56). If the conditions are indescribable then we have no means to know if the conditions are useful, good, practicable, ethical, (the list continues as far as the conditions affect what we do). This, then, is the self-referential problem, a problem of the Architecture. This problem will be further considered in the two remaining ways (true interpretation and correspondence theory) to question the Architectural premises.

True interpretation becomes a problem as an effect of the problem of self-referentiality, as true interpretation relies upon the control of self-referentiality. Truth is taken to be the basic concept in any interpretive act, where, in the Architectural example, the Platonic-Forms demonstrate truth without recourse to the conditions that 'allow its presence'. To show this traditional

view of 'truth' we must compare it with another view of truth. By implication of the logocentric (see chapter eight, first section) grounds of the traditional view upon truth we can suggest that two notions of 'truth' are not possible, but two notions of 'truth' may actually be possible from the view of the non-tra-diitonal. The non-traditional view of truth develops as humans develop. Truth is to be found as a contingency within language. As language is a human (re-)creation, then it follows that truth must be a human creation (Rorty, 1989; Lang, 1990). If this is so, then the traditional view of truth can be seen as an example of a human creation of truth, and therefore can relate to the non-traditional within this general contingency. (Notice that the nontraditional is not a 'meta-position' guiding the traditional (as this would immediately invite the problematic of self-referentiality). Instead both can be related within the general contingency, vague though it appears without a given context). This non-traditional view of truth relates to the Structure of the Acuity in that the many 'pin-points' represent the 'alternative' contingencies that exist, and we are now beginning to lose our conception of 'truth as singularity' and beginning to replace it with 'truth as alternatives'. The battle for such truths exists as re-descriptions of the traditional views. We must study the contingencies of language in order to understand the truths that are allowed as alternative truths. If we consider language to be productive, in that it produces statements and other organisations of ideas, then we can suggest that truth must be productive, in that it produces an ability to persuade. If we accept this, then we can accept that philosophy is not a means to 'detect' nonsense, or violations of language (violations of truth, nonsense as nontruth), but a means to detect unproductive behaviour:

> "... the sort of behaviour that sends one over and over again, down the same blind alleys (Eg. alleys labelled 'realism', 'idealism', and 'antirealism')." (Rorty, 1991b, p.58)

In the traditional view of the role of philosophy we can see that truth is often equated with 'well worn alleys' with habitual methods that lead to habitual truths, where method is substituted for truth and the process is able to go on endlessly undetected and accepted. Instead of going down habitual alleys, we must recognise the contingency of truth as a property of the mediator between world and agent, a mediator that holds truth, a mediator that is process, a mediator that speaks through man. Man recognises the pattern of language and must conform to that pattern in the hope of making that pattern more productive and specific, and it is within that pattern that truths are shown to us.

Finally in this section we need to look at 'correspondence theory'. Correspondence theory is announced with the Augustine problematic:

> "Every word has a meaning. This meaning is correlated with the word. It is the object for which the word stands." (Wittgenstein, 1968, p.109)

Every word corresponds to an object in the world. Language is a servant to the truth-seeking traditional philosopher, language obeys and recognises the human need for truth. Truth is out there waiting to correspond with words for the convenience of the thinking agent. It is the world that corresponds with the

philosopher and language is the neutrality through which truth travels. It must be the case that, despite the attempts to consider language as a problematic throughout the Architectural stage, that its dependency upon the Platonic-Forms forces correspondence theory to be partly taken seriously, and that this 'partly taken seriously' allows language to be simplified at some stages in the Architecture. To avoid this potential abuse of language we must sustain the Platonic-Forms as an alternative within the Structure of the Acuity, but not allow it to be a foundational force as it is within the Architecture. We will discuss correspondence theory again in this chapter and the following chapter, but its relationship with interpretation (interpretation of the world, interpretation of language with language) has been briefly given here, and now we must move onto interpretations that become representations.

9.2 REPRESENTATION

Re-presentation is the theoretical attempt to show something again, to re-enact its presence. Its presence is the immediacy we find in its reality. Its re-presentation is the mediation between the agent and the presence, the agent wishing to repeat reality. When we say 'this rose is red' we are wanting to re-present the colour of the rose, the existence of the word "is"becomes operational in this word game. But if we are shown the rose, and are asked 'is this the red rose?' we become confused, confused because the sentence earlier belongs to a different 'game' to the question now phrased. The sentence earlier operates solely within a language-game that makes no reference beyond that

language-game. In the sentence 'this rose is red' we see grammatical sense. In 'is this the red rose?' we are forced to re-present but realise the impossibility of this, because asking the question and forcing the representation is an attempt to refer beyond the grammatical rules of the language-game. The confusion lies with the connection between language (the sentences) and reality (the presence of the colour). But the confusion is more confused, as the connection between language and reality is given in language:

> "The connection between "language and reality"is made by definitions of words, and these belong to grammar, so that language remains self-contained and autonomous. " (Wittgenstein, 1990, p.97)

The argument here (more the work of the later Wittgenstein than the early Wittgenstein, as references from *Philosophical Grammar* are regularly made throughout *Philosophical Investigations* (the main representation of the ideas of the later Wittgenstein)) is that as soon as an agent begins to think that language is a representation of something other than language then an inevitable gap will always exist between direct experience and linguistic expression (Altieri, 1976, p.1400). That gap then becomes larger as it is filled more and more with more complicated notions of representation, in the futile task of wanting to make their lives 'more realistic' as if 'more realistic' implies an ability to see beyond language, to see beyond the means to communicate, to see beyond the means to see.

> "... there will always be a gap between direct experience and linguistic expression, a gap which we try to fill with concepts of representation and of the necessity for a person self-consciously to mediate between signs and sources of meaning. But the terms by which one expresses his self-conscious awareness are always themselves mediated, impersonal, and subject to the temporality of differing and deferring." (Altieri, 1976, p.1400-1401)

This gap has no origin because we are unable to represent an act outside of the grammar of language, and we need to represent outside the grammar of language if we wish to find an origin to the 'unreality of language'. To accept this 'reality of language' is to accept that the self-conscious person is an 'imperson', made impersonal through the act of mediation, but an impersonal act that allows personal traits to exist in its own contingency.

In order to further develop this discussion of representation we must evidence two persuasions: the representationalists and the antirepresentationalists. Representation, traditionally, is seen as an uncomplicated exercise. "... the essential feature of language is its capacity to represent the way things are." (Brandom, 1976, p.137, as quoted in Rorty, 1991a, p.151). For the 'Representationalists' (as Brandom calls them, examples are Russell, Tarski, Frege) the primacy is with 'reality'. This, of course, assumes that it is possible to distinguish between 'reality' and 'language' (as the second chapter suggests, in its definition of Dialectical-Forms, that reality and language are implicated in each other), though we need to distinguish between reality and language in

order to show the limitations of language as opposed to the 'unrealistic' expectations of language. And it is the 'Antirepresentationalists' (examples given are Dewey and Wittgenstein, though the later Wittgenstein would be more precise) that call for this distinguishing feature of language. For the antirepresentationalists language is a social practice, where assertability, truth, and meaning are squeezed in as best as they can (Rorty, 1991a, p.151). Language cannot represent anything other than itself. Language rules dictate where truth becomes a possibility, how certain ideas can be asserted over other ideas (through a discriminating use of vocabulary for example), and how meaning is dictated by the process of interpretation which is dictated by language. For the antirepresentationalists "... the medium of representation is now taken to be language itself." (Bolton, 1979, p.62). The representationalists privilege the agent, as central, as seeking to understand reality, as being in control of language, language as the servant; the agent could be put in contact with reality through the relative (to reality) simplicity of language. The antirepresentationalists are unable to privilege the agent, as the agent only exists (or rather her meaning of her existence, given by language) because of language; we become the servant of language, forced to listen to its etymological routes, forced to find our own personal significance through the impersonal linguistic grammar.

The existence of representationalists and antirepresentationalists helps the systems thinker to think about the possible relationships between the Architecture and the Acuity. To begin with, the Architecture is not simply a representationalist's model and the Acuity is not simply an antirepresentationalist's model. As we have already stated, the Architecture is based upon

Dialectical-Forms that are unable to escape the problematics of self-referentiality, and now we need to ask what is the relevance of self-referentiality to the debate between the representationalists and the antirepresentationalists? Self-referentiality is the indescribability of the conditions of describability. The Dialectical-Forms are seen as the conditions of describability, through which the debates (Margins, Fiction, and Will) are described. The debates are unable to describe the Dialectical-Forms (and their more complex developments, Cross-Dialectics, Cross-Generics, Pluralism) because they are shaped (described) by the Dialectical-Forms. It is the Dialectical-Forms that allow the debates to be represented. The Dialectical-Forms, therefore, can be seen as a 'language' that enables the agent to see 'how things are'. The relationship between the Dialectical-Forms and the debates is mostly in one direction, the 'Dialectical-Forms' enable the systems thinker to see 'how the debates are'. This is a representationalist's view of language, where language becomes subservient to reality. The Architectural reality is the debates and the language is the Dialectical-Forms (and its developments). To state simply, however, that the Architecture is a representationalist's model is to disregard some of the contents (see chapter four) of the Architecture. We must recall that the 'Fictions' debate, in particular, existed as a 'self-conscious-self-creation'. Such a creation explicitly recognises the self-creation of all language forms, and this includes the Dialectical-Forms. If we continue the argument we can see the beginnings of an antirepresentationalist's model within the Architecture manifesting itself in the Fictions debate. If the Fiction's debate is able to proceed as it wishes to within the Architecture, then the Architecture will begin to adopt an antirepresentationalist's point of view. This, however, is not the case. The Architecture must

remain structurally consistent, and to remain structurally consistent is to sustain the dominant vertical flow of the Architecture (from the Dialectical-Flows to Pluralism). The need for structural consistency is the need for representationalism to defeat all attacks from antirepresentationalism, for Dialectical-Forms to defeat (or control, regulate) the Fictions debate. This defeat is inevitable because in order for the Fictions debate to be allowed to voice its content (its particulars) it must be represented by the Dialectical-Forms. The struggle for the sustenance of representationalism is, therefore, provided for by the need for structural consistency within the Architecture. But the existence of representationalism is not a simple one, it is challenged most strongly by the Fictions debate.

We can see the Fictions debate as a commonality between the Architecture and the Acuity. The Philosophical Literature of the eighth chapter clearly derives from this debate, where Philosophical Literature is offered as a recognition of the loss of authority centred within a debate concerning the problematics of referentiality. This loss of authority is a response to the inability to privilege the agent as in control of language, as using language to understand reality. The Fictions debate uncovers these notions, but is necessarily constrained (Architecturally speaking) by structural consistency, which can be seen as a dictate coming from the representationalist's notion that we can use language to understand reality, where structural consistency compares to an organised body of knowledge which is there to understand reality.

Structural consistency has no means to representation within the Acuity. The Structure of the Acuity resides to understand language. Meaning-bodies

develop from "is"in a differed (spatial) and deferred (temporal) form. The spatial and temporal dimensions of the Structure disallow any direct comparison between different meaning-bodies. As each meaning-body represents language it develops its own grammar, its own rules. We can understand the rules from another meaning-body, but they have no relevance for the meaning-body within which we do this. This lack of relevance relates to a lack of structural consistency which relates to the continued possibility to 'listen' (in a Heideggerian sense "It is language that tells us about the essence of a thing, provided that we respect language's own essence." (1978, p.324)) to language. The structural consistency of the Architecture prides itself in 'containing truth', the Platonic-Forms 'open truth' to those who possess a soul that is not hindered by the disturbing elements of the body (Plato, 1989, p.497-498). This structural consistency is the form of anthropomorphism that promotes arrogant humanism, the sovereign man who opens up the truth, who speaks meaningfully:

> "... [I]t is not man who speaks meaningfully, but language itself speaking through man." (Steiner, 1989, p.111)

And if this language is to be represented we cannot impose some notion of structural consistency that will facilitate the task, to do this is to supersede validity (as truth conditions for language, an imposition upon language) over meaning. This relationship between validity and meaning accordingly becomes the interest of the next section.

9.3 MEANING

Let us begin this last structural section by explicitly stating that meaning comes from language and not from man. Meaning comes as a result of the operation of language. For example, we look into the German language and discover that "The German word for 'meaning' is derived from the German word for 'pointing'." (Wittgenstein, 1990, p.56) and that 'pointing' is an essential mechanism of the Acuity (the 'pin-points' in the *Interpretation* section, 9.1), an operation that involves interpretation and representation. Interpretation as the 'presence to see'; Representation as the ability 'to see again'; and Meaning as the 'comparison between one representation and another representation'. These three moments within language are the structural minimum of the Acuity, where the structure itself is seen as another language, as having a meaning, as providing an interpretation, and as suggesting a representation. We can see, therefore, that meaning is completely a 'language-like phenomenon':

> "There is no meaning or meaning-bearer behind language which is not itself a language-like phenomenon." (Wheeler, 1986, p.10)

Wittgenstein takes this 'language-like phenomenon' seriously when he considers the Augustinian notion (see section 9.1, 'correspondence theory') of language as "... a part of language." (1990, p.57). The manner in which Augustine attempts to reduce language to a 'naming-process' becomes nothing

more than another language-game that has none of the original intentions (to understand language once and for all) fulfilled. Apparently and traditionally, "... the essential thing in a word is its meaning." (Wittgenstein, 1990, p.59). But is it not possible to exchange words, assuming we maintain the same meaning or the same place? Can we not exchange one word for another that has the same meaning? Can we not exchange one word for another by placing it in the same place? If we maintain the place or the meaning the word becomes irrelevant. That is the meaning of the word, as the essential thing about the word is its meaning (and here we follow the logic in order to show the logic and to realise its boundaries). What is important, therefore, is not the meaning of the word but its place within the grammar of the language. This leads Wittgenstein to say: "... the place of a word in grammar is its **meaning**." (1990, p.59, my emphasis). And again we see that meaning is dictated by language, here by its grammatical position within language. The meaning of a word is not given by the linguistic agent (the observer of language) but by its grammatical position. We listen to the word in its position and we hear the meaning of the word. We do not impose a meaning, the meaning is imposed upon us (that is if we continue to talk about 'impositions').

We must now take this understanding of meaning and relate it to validity. We have discussed validity already in this chapter, with reference to the validity of interpretations. We will develop this understanding in order to appeal throughout to the Structure of the Acuity. In talking about the validity of interpretations we realised that 'truth' cannot exist independently of language, and indeed, truth is a contingency of language. If we relate meaning to validity, therefore, they both become contingencies within the grammatical

position of a language. In order to further enhance our understanding of the relationship between meaning and validity we are required to evidence (at least) two competing arguments (arguments that are often supporting the same cause but seem unable to recognise it at cost of defeating their own arguments). We will maintain some consistency with the first stage here when we call upon the competing positions of Foucault and Habermas. Habermas's position seems at first quite clear:

> "... we can only understand the meaning of any given speech act when we *know* the conditions under which it can be accepted as valid." (Visker, 1992, p.17)(This is taken from Habermas's (1987) *Philosophical Discourse of Modernity*, pages 312-3 and 319-21)

We need to know the conditions that will tell us what is valid and what is not valid. In order to know these conditions we must make reference to the 'horizon of meaning' dominant at the time. But this 'horizon of meaning' changes as the conditions that spell validity change: this is the reciprocal relationship that Habermas wishes to maintain, and by maintaining it, shows that both meaning and validity are equally important within speech acts. However, Habermas seems to see meaning as being shown to be valid in terms of the validity conditions, and for all of this to be shaped by 'knowing'. Visker (1992) calls this a 'theoreticist' bias, ie that the horizons of meaning and the conditions of validity "... can be exclusively seen in terms of knowing, of *theoria* ..." (p.17). And to see things with a theoreticist's bias is to privilege validity over meaning. Therefore, the Habermasian emphasis is upon 'validity'

rather than 'meaning'. We can suggest, therefore, that this emphasis seeks validity 'outside' of language, as Habermas wishes to show that validity claims, because of their theoreticist bias, are able to transcend space and time to reveal a universal validity (built upon notions of sincerity, rightness, ideal speech). Habermas (1987, p.322) criticises Foucault in attempting to destroy this possibility of transcendental validity in his asymmetrical relationship between meaning and validity. For Habermas, Foucault allows meaning to consume validity, to relegate validity. Habermas accuses Foucault of conflating meaning and validity. Habermas sees this conflation as due to Foucault's untenable and unenlightened power-knowledge relationship. It is not the problem of validity that changes (as is the case if truth is dependent upon power), but rather only the conditions of validity that change with the horizons of meaning (1987, p.320).

We find Habermasian consistency as highly dependent upon the proposed symmetrical qualities of the Dialectical-Forms, where meaning and validity are seen in a reciprocal relationship. The illocutionary act is always opposed to the expected perlocutionary effect in a Dialectical-Form. The desired effect within this Dialectical-Form is always consensus:

> "... all participants pursue illocutionary aims without reservation in order to arrive at an agreement that will provide the basis for a consensual coordination of individually pursued plans of action." (Habermas, 1984, p.295-296)

The perlocutionary effect in the equally (ideally) opposed speakers is always a desire for consensus that will preserve their illocutionary aims. The three relevant levels here are semantic, pragmatic, and empirical. The semantic refers to the understanding of meaning, the pragmatic to coordinative agreement, and the empirical to possible further developments. All levels can be seen within the Dialectical-Form that admires opposition (in this case between the speakers, and between the 'aims' and the 'effects') and intelligibility (the clear understanding of dialogue). The Dialectical-Form also extends to the notions of validity and meaning, where "*We understand a speech act when we know what makes it acceptable.*" (Habermas, 1984, p.297). Understanding relates to 'meaning' and acceptable relates to 'validity'. Meaning is regarded in the semantic level, while validity is regarded in the pragmatic and empirical levels. The Dialectical-Form preserves these levels and the relationship between validity and meaning. Essentially, therefore, the accusation directed at Foucault is that he allows meaning to consume validity, he allows meaning and validity to exist in an asymmetrical relationship.

Foucault's reply to these accusations will now be considered and the relationship between meaning and validity with regard to the Structure of the Acuity will follow.

For Foucault, meaning relates to validity through the concept of 'régime of truth' (Foucault, 1980), though the conception of 'meaning' and the conception of 'validity' in Foucault's work differs from Habermas's conceptions (and these different conceptions can explain to a certain extent the different conclusions). The régime of truth:

> "... is a question of what *governs* statements, and the way in which they *govern* each other so as to constitute a set of propositions which are scientifically acceptable, and hence capable of being verified or falsified by scientific procedures." (Foucault, 1980, p.112)

The régime of truth is the politics of the scientific statements, the régime governs the acceptability *before* the statements are validated scientifically, the régime is what makes 'truth' 'true'. There exists a procedure prior to the Habermasian conjecture of the reciprocal relationship between validity and meaning, a procedure that allows some statements to enter while disallowing others, and this procedure occurs before 'validity' is considered or given some conditions in which to clarify itself. Foucault, therefore, dissatisfied with the Habermasian relationship between meaning and validity, has opted to study the conditions that allow validity and meaning to exist. These conditions are processural rather than structural, and here we must make reference to the previous chapter (in particular section 8.1), as History exists as 'discontinuous events', as contingency, as Acuity. "History has no 'meaning'..." (Foucault, 1980, p.114), as history is a genealogy of relations of force existing at various levels. Here Foucault situates language within the concept of a historical 'battle' involving power and not involving meaning, and it is this 'battle' that produces the conditions that allow for validity and meaning to exist. However we can suggest here that Foucault's conception of language is overly restrictive in that power cannot be divorced from language in its constitutional space. To clarify this idea we can suggest two notions of language: language as meaning (the Foucaulvian conception) and language as power (the necessary conception to

relate Foucault to the Structure of the Acuity). These two notions then enable us to better understand the Foucaulvian dismissal of Dialectical-Forms (considered essential for a Habermasian understanding of validity and meaning). Foucault sees Dialectical-Forms as a 'logic of contradiction' and a 'structure of communication', a structural logic that evades "... the always open and hazardous reality of conflict by reducing it to a Hegelian skeleton ... [and] avoiding its violent, bloody and lethal character by reducing it to the calm Platonic form of language and dialogue." (1980, p.114-115) (Here we are combining the Hegelian Dialectic with the Semiological reliance upon Platonic Forms). Foucault, therefore, considers Habermas as reducing the complexity of genealogical relationships existing between meaning and validity to a 'Hegelian skeleton' and a 'calm Platonic form'. Such a reduction wishes to maintain the possibility of an 'empty sameness' that is the transcendental subject (see section 8.2) witnessing the universality of validity. Meaning and validity cannot be prepared for 'Dialectical dressing' as their genealogical status disallows such a transcendental subject to exist (the constitution of language as a régime of truth). The Foucaulvian reply to the Habermasian accusation of meaning-validity conflation is that these two terms only exist because the régime of truth allows it. The régime, however, does not allow for a 'dialectical dressing' of these two terms and consequently the régime disallows the Habermasian position.

The structure of the Acuity is a representation of a plurality of different meaning-bodies always existing as interpretations and previous interpretations (the contingency of language demands this). The structural informing of each meaning-body comes from the interpretation and consequential representation

of the justification of the meaning-body. All meaning-bodies exist as contingencies in that interpretation questions their (previously interpreted) justified existence as soon as representation allows meaning. No Dialectical process is at play here. Interpretation has no traditional feeling of Cartesian doubt that must be conquered. Instead, interpretation fits rules and language games to the meaning-body which consequently help to clarify a variety of possible contexts (Wittgenstein, 1968 p.201-212). The Foucaulvian introduction of power as a constitutional measure in language helps to further clarify the non-dialectical nature of the Acuity. Power does not respect equal oppositions, as power seeks to destroy oppositions. In the same breath power constitutes language as the means to interpret, represent, and accredit meaning to a variety of situations. This apparent paradox resides in the complexity of language and its many possible interpretations. We are given meaning-bodies in the Acuity through the effects of this power, and validation proceeds after as a human effort to control the processes at work within language, within the Structure of the Acuity.

CONCLUSION

The Structure of the Acuity is an opportunity to show an understanding of the developments made upon the Architecture in the previous chapter. The two 'clouds' of 'desire to construct' and 'desire to compare' have been given a structural consideration in their relationship to the meaning-bodies in the Structure of the Acuity. The Structure has the 'square base' of the Architecture

as the existence of "is". This base houses the two desires, the basic construction and the means to compare. An **interpretation** that becomes a **representation** and an accrediting of **meaning** shape this chapter, and their relevance to a basic understanding of the Acuity is provided. Accordingly, this chapter must consider Interpretation, Representation, and Meaning.

Interpretation is established as an 'organiser of signs'. Interpretation is active while signs await action. The Structure of the Acuity must, therefore, be seen as active. Activity is a contingency, a finitude which the Structure must painfully admit. No interpretations are essential interpretations because the contingent nature of the Structure of Acuity always sees itself within a finitude of interpretation. This notion of finitude causes some problems for the Architecture and three problematics of interpretation are worked on: Self-referentiality, True interpretation, and Correspondence theory. Self-referentiality questions the Architectural authority with regard to the employment of Dialectical-Forms as a universal shaper of the particular. True interpretation exists bound within language (as a plurality) rather than as a human attempt to escape the contingency of language (to seek singularity). Correspondence theory assumes that language is a servant of man, able to correspond between language and object in the continual quest for the universal truth. These three problematics all relate to the Architecture, and the Acuity is able to specify these within the Architectural generality.

Representation also has traditional and nontraditional aspects. The traditional assumes a human agent as being wholly responsible for the re-presentation of established truths or potential truths. In this scenario lan-

guage is apart from reality, language re-presents reality, language is inert, language is the servant. To challenge this 'representationalist' view of representation is the antirepresentationalists. The antirepresentationalists see language as a social practice, and the establishment of truth as being thus socially bound. For the antirepresentationalists language dictates where truth becomes a possibility through the grammatical nature of language. The debate between the representationalists and the antirepresentationalists is instigated within the Architecture by the Structure of the Acuity. The representationalist moment is provided for by the Dialectical-Forms. The antirepresentationalist moment is provided for by the 'Fictions' debate. The existence of structural consistency as an Architectural priority, however, stifles this potential debate and the Architecture is left looking in a representationalist manner, when considered by the Structure of the Acuity.

Meaning is a linguistic quality, and not a human quality. This basic premise of the Acuity is developed. The meaning of a word is shown as its allocated place within a grammar (or its scope within a language game). Accordingly we must listen to language in order to show the meaning of words: this is in complete opposition to the traditional allocation of meaning from a human agent. To further develop this radical notion of meaning we must relate it to validity in a broad sense. This is achieved when Habermas is brought alongside Foucault. Habermasian adherence to Dialectical-Forms is highlighted in his attempt to create a symmetrical relationship between meaning and validity. Foucault evidences a régime of truth that is able to dictate both meaning and validity. This régime of truth is linguistic in nature as it is identified

with the Structure of the Acuity. This Foucaulvian notion of régime thereby establishes a direct relationship between power and language in this consideration of meaning.

Overall, this chapter has provided a working structural response to the complexity of arguments shown in the previous chapter. What is required now is an understanding of the possible contents of such a structure, thus showing the Acute manner in which this second stage is prepared to tackle the developments made in the first stage.

CHAPTER TEN: THE CONTENT OF THE ACUITY OF CST

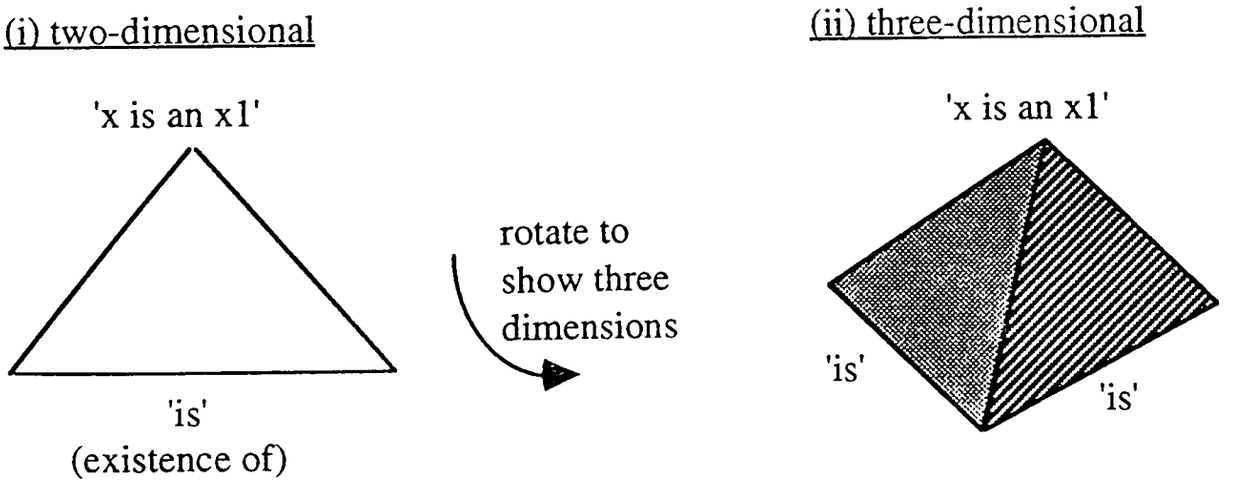
INTRODUCTION

The content of the Acuity is not a content, it is not a content because there is no scheme that demands a content, as a scheme exists in ignorance of the power of language. Instead the content of the Acuity is both a resemblance to and an antonym of content. The notion of 'content' in this chapter shows the inability to content content (the verb 'to content' acting, or failing to act, upon the noun 'content'). We show that content relies upon a stable notion of 'substance', and for there to be 'content', there must, first of all, be something that can be 'contented'. Or we can say, in order for the noun to exist (content) we must look before the existence of the noun, we must look at the constitution of the noun, we must look at the verbal constitution of the noun. We postulate, therefore, that the verb 'to content' leads to the noun 'content'. If we question the existence of the noun 'content' then the next step is to consider the verb 'to content'. The Architecture is 'content' in its own terms (the terms expressed throughout the first stage). However, the Acuity questions this contentment of the Architecture by questioning the process by which it is made content. As we have seen in chapters eight and nine the process by which the Architecture is made content is governed by the grammar of language. Accordingly we shall consider, in this chapter, the resemblance to and an antonym of content in their

grammatical roles. The grammar of language does not allow the thinker to see content as a singular force, but only as a consequence of less precise forces, including the act of resemblance and the incidence of an antonym. Grammatical forces treat content not simply as a stability, a substance, but more importantly as a movement, as a *trope*. Content "... has meaning only insofar as a language refers back to a closed system (*la langue*) which is independent of its object, and precisely because of this exteriority can speak of that object." (Lyotard, 1989, p.31). As we question the exteriority of language we are forced to question the stability of meaning. The meaning of content is given by a closed system. This closed system has an internal and an external function. The internal function is shown by Saussure (see Lyotard reference above) to consist of 'associative' and 'syntagmatic' relationships. The associative associates the word (in this case 'content') with other words which can be substituted for it (for example, 'capacity'). The syntagmatic determines the position and function of the word in all possible statements (looking at all of the uses of 'content' within all used statements). The external function is referential (this has been discussed in the last chapter). This closed system is closed for the purposes of stability. The internal functioning shows firstly how words are associated with other words, and secondly, how these words function sententially. This first relationship becomes the concern of this chapter because we are concerned with how 'content' can be substituted for other terms, and here substitution concentrates upon 'resemblance' and the word 'antonym'. Resemblance offers possible substitutions, and antonyms show the limitations of substitution (to substitute a word for its opposite gives the limitation of the associability of that word in that possible substitutions can exist within that limitation between the two opposites).

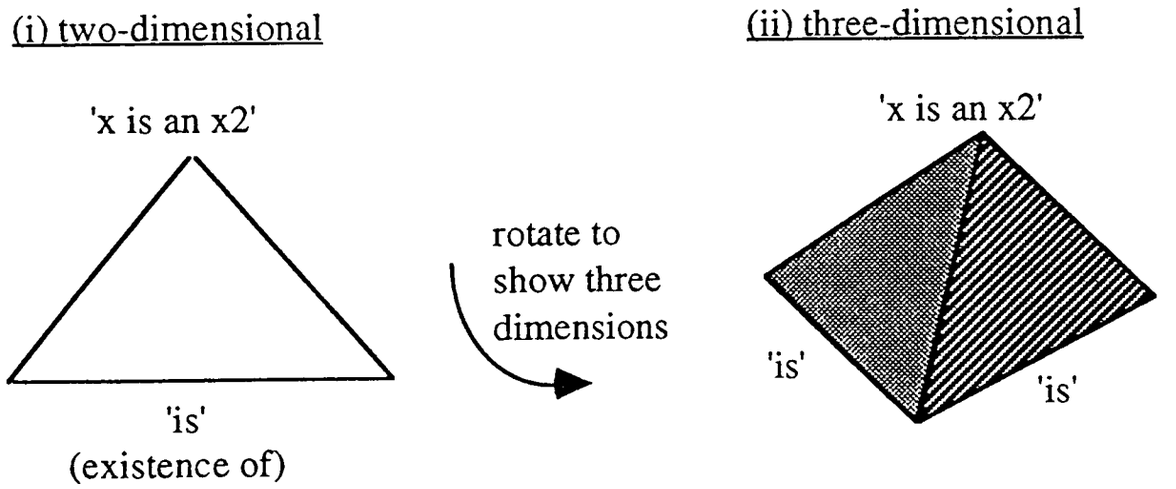
We now discover that the resemblance and the antonym of a word refer to two tropes: **metaphor** and **irony**, respectively. We also discover that the syntagmatic relationship is the concern of the Structure of the Acuity, where we exemplified the position and function of "is" within possible statements. To continue our study of the grammar of the language, therefore, we need to study both metaphor and irony. We can begin by relating the associative (metaphor and irony as examples of this relationship) to the syntagmatic (the Structure of the Acuity). Simply, let us show the Basic Structure in two associations, a metaphorical association and an ironical association.

Figure 10.1 Metaphorical association of the Basic structure



The metaphor "x^1" is a metaphor of "x".(This is in agreement with Lacan's (1977) notion of metaphor as 'one word for another'). An example, "Systems Thinking is an Architecture". The "x" is "Systems Thinking", and the "x^1" is "Architecture". Systems Thinking becomes thought of as if it was an Architecture, a construction. The first stage of this thesis is, therefore, a metaphor for Systems Thinking, implicitly asking the reader to consider Systems Thinking as if it was an Architecture.

Figure 10.2 Ironical association of the Basic structure



The ironical situation is generated when the meanings of "x" and "x^2" are

combined to give a meaning which is contrary to the words used. An example, "Systems Thinking is systemic as it survives systems thinkers". An ironical situation requires the qualification of "as it survives thinkers" in order to enforce the contrary meaning of the use of "systemic" with "Systems Thinking". The "x" is, again, "Systems Thinking", and the "x^2" is "systemic". However, to stop with 'x is x^2' would simply be axiomatic, we need to qualify this substitution. And we qualify it by stating that Systems Thinking must be systemic as it is able to deal with the unsystemic systemic thinking of systems thinkers. The irony, therefore, is that systems thinkers make up Systems Thinking, which can be classified as systemic, and yet systems thinkers themselves do this in an unsystemic manner, therefore making Systems Thinking unsystemic. The meaning of this ironical situation is contrary to the words. Here we are relying on Samuel Johnson's *Dictionary of the English Language* where he says irony is "a mode of speech of which the meaning is contrary to the words "(1755). The meaning is unsystemic, the words are systemic.

This chapter will develop our understanding of metaphor and irony as it relates to the Acuity. Metaphor and irony allow the notion of 'content' to be divorced from its substantive meaning. This chapter will concentrate upon this 'contentless content' in order to demonstrate the content of the Acuity of Critical Systems Thinking.

10.1 METAPHOR

We will consider Metaphor in two ways which directly relate to the 'contentless content' thesis which is the main purpose of this chapter. Both ways relate to the Philosophical importance of metaphor. The first way evidences how Philosophy has 'downgraded' the idea of Metaphor. Philosophy has made such an impression upon our language that we forget that it is language that enables Philosophy. It is Philosophy which is "... drawing upon the reserves of a language, cultivating, forcing, or making deviate a set of tropic resources older than philosophy itself." (Derrida, 1982, p.293). The tropic resources apply both to Metaphor as well as Irony, and both, therefore, are studied. The second way evidences how Philosophy requires Metaphor. Some of the reasons from the first way apply to this second way. Philosophy requires Metaphor because Philosophy would be *unthinkable* without Metaphor. Metaphor provides the "[a]ppeal to reflexive forms..." (Llewelyn, 1986, p.74) which comes from the metaphor of 'mirror' to the Platonic Philosophy of 'Forms'. Platonic Philosophy relies upon many metaphors in order to provide a Philosophy that can 'mirror' reality. The second way shall develop this reliance.

10.1.1 Philosophical downgrading of Metaphor

The Philosophical downgrading of Metaphor is an authoritarian attempt to transcend the figurative to reach the 'literal truth'. Philosophers propose intentions, and these proposed intentions become primary, nothing 'must get in their way' - the authorial intention is always assumed as being superior to the figural language (Lloyd, 1986). The authorial intention is 'plain' or 'common' sense, while the figural language is castigated as 'flowery' and 'superfluous' to this sense. Indeed, the figural language is actually seen as distorting this plain sense.

> "Both Hobbs and Locke, for example, object explicitly to the use in philosophical discourse of figurative language as it moves away (in their view) from the plain sense and direct reference to literal usage ..." (Lang, 1990, p.20)

Philosophy sees itself as atemporal, undramatic, and non-representational (Lang,1990). Atemporal in that the intentions of the philosophers do not develop from the 'mere contingencies' within which they find themselves. Philosophers are far too concerned with 'Grand Theory' (see Skinner's (1990) edited collection of 'Grand Theorists' for an example of this) to be bothered by the 'mere contingencies' which constitute them. Undramatic in that Philosophers 'tell it as it is', plainly; there is no need to dramatise, no need to 'tell

stories' about what their 'plain' and 'common' senses tell them. Non-representational in that philosophy deals in the currency of 'reality' and not in 'mere' appearances (or dramas) parading as reality.

Philosophy pretends to be 'what figural language is not'. With particular reference to metaphor as an example of figural language let us offer some examples of how Philosophy downgrades the figural. The metaphor of 'reflexive forms' which derives from both the metaphor of the 'mirror' and the metaphor of the 'sun' is inherent in Platonic-Forms (and as a consequence much of modern day philosophy as well; for example, Critical Systems Thinking relies upon an ability to 'reflect upon problem situations' (Jackson, 1990)). The metaphorical 'sun' lights up the metaphorical 'reflexive forms'. Platonic-Forms rely upon this sensory metaphor to show the potential for intelligibility. However, the 'jump' (obviously yet another metaphor) from the sensory to the intelligible is a 'jump' into the dark. Let us begin with the sensory metaphors:

> "Noble, then, is the bond which links together sight and visibility, and great beyond other bonds by no small difference of nature; for light is their bond, and light is no ignoble thing?" (Plato, Republic IV, p.200)

The metaphorical 'sun' is the metaphorical 'bond', ironical that an entity with no substance should prove itself as able to 'bond' two other entities (sight, visibility) which also lack substance. We are forced, therefore, to consider the substantial 'bonding' (an overly physical action) of two

non-substances by a third non-substance. Let us, however, momentarily accept this in order to consider the 'jump' from the sensory to the intelligible (necessarily accepting in order to 'jump' from it). We find the intelligible introduced through the preservation of the 'sun' metaphor ("Yet of all the organs of sense the eye is most like the sun? By far the most like." (Plato, 1989, p.200)) in this following quotation:

> "And the soul is like the eye: when resting upon that on which truth and being shine, the soul perceives and understands, and is radiant with intelligence; but when turned towards the twilight of becoming and perishing, then she has opinion only, and goes blinking about, and is first of one opinion and then of another, and seems to have no intelligence? Just so." (Plato, 1989, p.201)

The metaphor now passes from the 'eye' (as it came from the 'sun') to the 'soul'. Now, however, the soul resides in the 'intelligible world' where before the 'eye' resided in the 'sensible world' (see chapter two for a clarification of this in section 2.2.1). The soul 'perceives and understands' where before the eye 'senses and sees', consequently the soul becomes 'radiant with intelligence' where before the eye was 'radiant with visibility', and the soul is able to recognise mere 'opinion' where before the eye 'saw dimly'. The metaphorical 'sun', therefore, is operational throughout the Platonic-Forms. As we pass from the sensible world to the intelligible world the importance and relevance of this metaphor is clear, and its downgrading is also

clear, if subtle. We are able to differentiate between the 'good' and mere opinion through this metaphor. Mere opinion relies upon the poor visibility that corresponds with 'twilight'. This is seen as maintaining a relationship with 'images'. The good, however, ascends (or 'jumps') from the mere images to 'ideas', and to think of the good (the Forms) is not to "... make use of the visible forms ... but of the ideals which they resemble..." (Plato, 1989, p.203). Plato's Platonic-Forms are perhaps one of the most important elements within the *Western Metaphysical Tradition*, and we have very briefly shown here that the Forms are metaphors parading as concepts. Plato neglects this, and would continue to downgrade the notion of Metaphor as a substitute for reasoned (or prosaic) argument (as opposed to poetical argument). Plato's denigration of Literature (and its figural language) as failing to engage with reality but giving the appearance of doing so (see chapter eight, section 8.3) is posited in opposition to Philosophy (a necessary opposition, but nothing more than a continuation of the Forms (as an exaggeration of *doxa*), and thereby a continuation of the inherent metaphors) in order to enhance the supposed fallacies of Literature and thereby enhance the 'factuality' of Philosophy: a factuality that relies upon figural language. This becomes the interest of the following section.

10.1.2 Philosophical requirement of Metaphor

The philosophical requirement of metaphor surfaces partly because of the philosophical downgrading of metaphor. When we ask 'why does philosophy do this?' we can respond that it is 'because philosophy needs to distance itself from its own contingency, and its own contingency is dictated by the figural aspects of language (in the Platonic example, this figural aspect is notably metaphor)'. In responding to this question, we continue the need for philosophical contingency, a need that is concurrent with the thesis of chapters eight and nine. Philosophical contingency exemplifies itself as philosophical metaphor. Metaphor is not a literary phenomenon as this would play into the hands of those who despise the literary pretensions that metaphor represents. Metaphor is a philosophical notion. The way in which we define our need for philosophical contingency relies upon metaphor being considered as "... something 'older' than the philosophical distinction between the proper and the metaphoric..." (Gasché, 1986, p.294). Philosophical contingency must realise this philosophical prejudice, must realise that the proper cannot stand in complete opposition to the metaphoric. Gasché considers this consideration of metaphor, this philosophical prejudice, as being unnamable; when something is metaphorical it has no meaning in current language, it is rightly unnamable. To be 'metaphorical' is to escape "...the order of the noun [the naming process] in general..." (Gasché, 1986, p.294), to escape the logic that relates the proper to the metaphorical, but necessarily yields a structure that allows for the proper to be related to the metaphorical. This process of 'yielding'

this relationship is precisely the philosophical requirement of metaphor. Philosophy requires metaphor in order to downgrade metaphor. And we are not here tied up in a 'metaphorical knot' (in showing that a metaphor of metaphor exists) because we posit a philosophical contingency that recognises that traditional philosophy relies upon metaphor to such an extent that it must downgrade metaphor. Philosophical contingency in recognising this reliance has no need to perpetuate the downgrading of metaphor, instead it recognises the importance of metaphor for philosophical thinking.

The importance of metaphor for philosophical thinking has (at least) two possibilities. Rorty (1991a, p.162-172) explains them through the competing theories of Hesse and Davidson. Hesse (concurrent with Habermasian notions of metaphor) contends that metaphors convey meaning (information) which can be used as **reasons** for holding certain beliefs. Davidson (concurrent with Gaschéen notions of metaphor) contends that metaphors are necessary to the gaining of knowledge, but cannot express knowledge. They are, however, **causes** of belief. The debate between Hesse and Davidson centres around the presence of 'utility' in metaphor, where Hesse suggests that metaphor has utility, while Davidson suggests that metaphor has no utility, but causes utility. The presence of utility can be related to the problem of self-referentiality, as considered in chapter nine. Self-referentiality becomes a problem when one separates universals from particulars. In this case, the universal is the author uttering the metaphor while the particular is the cognitive content of the metaphor. Hesse assumes this separation when she contends that metaphors have meaning (content, information, particulars). In falling into the problematic of self-referentiality Hesse is unable to articulate the meaning of the metaphor

anyway (as articulation relies upon the conditions (the universals) being satisfied). Davidson sees the problematic and prefers to see metaphors in two states: 'alive' and 'dead' (though this state is not a metaphor, and this state relates to Hesse's notion of metaphor). Alive metaphors have no meaning, but are necessary to the accreditation of meaning. Dead metaphors have meaning. Meaning and stimuli (responding to the problem of self-referentiality, where meaning is the particular and stimuli is the universal) are, therefore, the stimulating alive metaphor that gives meaning to the word. As soon as the stimulus fails to give meaning it becomes a dead metaphor that has meaning as a word.

We can relate Hesse to the Architecture through the work of Flood and Jackson (1991)(important in the development stage). Hesse considers metaphor as an 'instrument of cognition', an instrument that enables philosophers to see beyond the dominance of the Habermasian (1972) 'technical interest'. Hessean metaphor extends beyond the technical interest to the practical and emancipatory interests. Metaphors can be used to highlight the existence of these three cognitive (technical, practical, emancipatory) interests. Such an attempt has been made by Flood and Jackson's *Total Systems Intervention* (1991)(see chapter five). Flood and Jackson's metaphors correspond to the three interests in an effort to see beyond the dominance of the technical interest within Systems Thinking. Accordingly, therefore, Flood and Jackson fall into the problematic of self-referentiality with regard to their 'metaphor-as-meaning' thesis. The meaning of each metaphor corresponds to the cognitive-interests. There are two problematics here. Firstly, Jackson and Flood over-emphasise the importance of 'cognition' in their work. Secondly,

if a metaphor has meaning (and their meanings are explicitly expressed on pages 7 to 15) then it is a dead metaphor, it cannot contribute to the gaining of knowledge. Cognition assumes a separation between agent and language, where the agent is able to influence language. We have discussed in the last chapter that language cannot be isolated from the agent (the contrary is the case, language forms the agent) and therefore, to over-emphasise the importance of cognition is to over-emphasise this separation. Metaphors stimulate meaning, they do not possess meaning. To consider a metaphor as having meaning is to confuse the 'figurative' (metaphorical) use of language with the 'literal' (meaning) use of language.

> "... simply to lodge this meaning in the metaphor is like explaining why a pill puts you to sleep by saying it has a dormative power." (Davidson, as quoted in Rorty, 1991a, p.171)

By saying that metaphors possess meaning we are suggesting that we can explain metaphors (pill) by explaining the meanings they create (dormitive power).

We can postulate at the end of this brief introduction to the philosophical reliance upon metaphor two clear modes of reliance: firstly, that metaphor creates the distinction between metaphor and proper (Gasché); and secondly, that metaphor creates meaning (Davidson). These two clear modes have

important implications for any metaphorical understanding in Systems Thinking (with particular reference to Flood and Jackson's *Total Systems Intervention*).

Having considered and related the philosophical downgrading of metaphor and the philosophical reliance upon metaphor we are now in a position to continue our study of figural language by looking at Irony.

10.2 IRONY

Irony is perhaps one of the most awkward and elusive words to discuss. This explains why very few people are able to discuss it without becoming ironical. To this extent they are not discussing irony, they are only *being* ironical. Some authors (notably Kierkegaard, 1992) achieve a non-ironical discussion of irony. However, it is impossible to achieve this completely, as to achieve this would be to fail to discuss irony (or the extent of irony) at all. This, then, is the position that we find ourselves in in this chapter: wishing to content something that is contentless (wishing to discuss something that cannot be discussed).

The second part of this chapter will divide into two distinct phases. The first phase (10.2.1) will introduce Irony in its elements, modes, and grades. Two main authors will be relied on here, Mueke (1969) and Kierkegaard (1966, 1992). From Meuke we employ the useful phrase 'Ironology' and will attempt to show the extent and complexity of irony. From Kierkegaard we evidence Socrates as one of the major exponents of ironical discourse. Together with these two authors we will attempt to content irony as an historical phenomena. Such an attempt becomes humorous in the second phase (10.2.2). Here we show the humorous streak in philosophy in employing Lang's (1990) literary criticism of philosophy. This develops from a treatment of philosophy when we propose the importance of self-creation as an endless effort to question substantial content. It is Rorty (1989) that we will refer to mostly in this proposal of self-creation.

10.2.1 Ironology

In introducing irony in all its forms Mueke (1969), in going into detail as to its literary and philosophical importance, ironically states that "... the art of irony is the art of saying something without really saying it." (p.5). This is ironically stated because in order to say that one cannot say something that one has previously presumed an ability to say shows an irony of the historical act (the previous presumption) the current act (the quote) and the future act (the rest of the book). Accordingly, Irony covers the contingency that spreads from the remembered past (where to remember is a desire to make present) to the unstable present (where we constantly realise that what we say bears little relation to our present condition) to the more unstable non-present (where we are not). An example of such an ironical sense of contingency is provided by Enright: "... in order to safeguard our future we prepare to destroy ourselves." (1988, p.5). With regard to this thesis, the past can be seen as the previous chapters, the present as now, and the future as later chapters. The perspective of irony therefore extends historically to all the thesis, and all acts can be re-interpreted with an ironical sense, an ironical sense that shows constantly that the prospects for contentment lay as a linguistic complicity and not as a defeat of the linguistic.

This perspective of irony extends to consider firstly Mueke (1969) in introducing irony in its general forms, and secondly Kierkegaard (1966, 1992) in developing these general forms with particular reference to Socrates. We

will employ Mueke to deal with four dimensions of irony: the essential elements (including the relationship between the victim and the object of irony, and the difference between verbal and situational irony); the distinction between irony and satire; an introduction to the Greek concept of *Eironeia* (to be expanded upon); and an exemplification of the grades and modes of irony which will lead onto a final classification of irony as either specific or general. Kierkegaard as an exponent of general irony will conclude this Ironology, and this will be shown in three stages: interpretations of three writers on Socrates (Xenophon, Aristophanes, and Plato); an Aristophanic Acuity; and Socrates's relationship between Hegel and the Sophists. The intentions of this Ironology are firstly to generally introduce the concept of irony (using Mueke) and secondly to develop the concept through the inceptor of irony (according to Kierkegaard (1966, p.47)).

There are three essential elements to irony. They are: that it is Double layered; that it is oppositionary; and that an innocence is required. There is an upper and a lower layer, the lower layer is the appearance to the victim (or the deception as appearance), the upper layer is the appearance to the observer. There are two forms of opposition: simple irony as an opposition simply between the two layers (the upper and the lower), and double irony where there exists an opposition within the lower level itself (there exists a single victim to a contradictory term within the lower level, the lower level has two interpretations, and it is the upper level that is aware of it). And none of this would be possible if the lower level (the victim) was not innocent, or unaware of the existence of the upper level.

The object of irony resides in the upper level, the victim of irony resides in the lower level. The object of irony is either (although it can apply to both) the audience or the target. The audience is *to whom* one speaks (or writes, paints, represents), the target is *of whom* one speaks. The victim of irony has four possibilities: they are unable to recognise irony (as an audience to it)(1); they are unable to recognise irony that is not directed towards them (thinking they are targets when they are not, they are victims of their own creation)(2); they are unable to recognise being victims of circumstance (3); and they are unable to recognise that their own words are betraying them (4).

The distinction between verbal and situational irony can be simply related to the previous paragraph. Verbal is 'He is being ironical ...', situational is 'It is ironical that ...'. Verbal irony is the primary sense, as opposite expression of words, situational is the transferred sense, where the condition is opposite to what might be expected. Verbal irony operates in the first victim's case, situational irony operates in the second, third, and fourth cases.

Irony and satire are often confused. We can compare the two in a tabulation (taken from Mueke, 1969, p.27-29):

Table 10.1 Satire and Irony

Satire	Irony
- ridiculous (curable)	- absurd (incurable)
- manners of man	- morals of universe
- works in interest of stability	- works in interests of instability
- satirist solves	- no pretence to cure

Satire is more practical while irony is more conceptual. Satire works with concepts showing the manners of man as ridiculous. It shows such manners as ridiculous from an implicit moral standard:

> "Satire demands at least a token fantasy, a content which the reader recognises as grotesque, and at least an implicit moral standard, the latter being essential in a militant attitude to experience." (Frye, 1957, p.224)

Satire must select its absurdities according to a moral standard. This is a moral standard that does not allow the satirist to challenge the oppressively real, he is only able to challenge the 'fantastic' and the 'grotesque'. Because it can only challenge such concepts it works in the interests of stability, and to

this extent the satirist solves. A popular example is *Spitting Image* on television, or *Private Eye* in print. They are satirical because they ridicule those in power, but they ridicule those that govern they do not ridicule the concept of government. The concept of government is preserved. In not ridiculing the concept of government they do not act ironically, as to act ironically is to question concepts, to question the possibility of government (as in Calvino's (1974) Kublai Khan who fails to govern his empire).

The Greek concept of *Eironeia* expresses the absurdities of government and here Mueke (1969, p.47) employs Aristotle rather than the more usual employment of Socrates. *Eironeia* is a mode of behaviour rather than a mode of speech (though speech is the enunciation of this behaviour through writings in Greek texts). The English equivalent of *Eironeia* is dissimulation. Socratic behaviour, in a pretence of innocence, dissimulates the simulations of 'knowledgeable men' (for example Euthyphro). The behaviour is sly and pretentious.

There are three grades of irony: Overt, Covert, and Private. Overt is obvious irony, where the victim is able to recognise the irony at once. Covert employs a non-ironical way to speak ironically (non-ironical meaning that the representer gives no indication of the existence of the ironical essential elements). Private is dialogical where no audience is present, only the target (as in Plato's dialogues).

There are four modes of irony: Impersonal; Self-disparaging; Ingenú; and Dramatised. Impersonal irony releases irony as if it were logic, the irony

of the 'rational man'. Self-disparaging irony is when the ironist disguises herself as pseudo victim. Ingenú presents a real victim instead of herself (naïve). Dramatised irony presents irony in tune with our sense of irony:

> "[as] incompatibilities within a total situation and to see a 'victim' confidently unaware of them." (Mueke, 1969, p.94)

All these brief explanations of irony can be seen as specific irony or general irony. Specific irony finds a target (such as a closed ideology or a secret society), deals with it in an ironic manner then stops. Specific irony is precise and limited. General irony is more complex as the world is seen as inescapably ironic. Each detail of the world is seen through an ironic perspective:

> "... the man who, accepting 'the fact that the unity of Nature is based upon opposites', confronts every idea of the modern world with its equally valid (or invalid) counter-idea, and continually ironizes people who cannot tolerate a plurality." (Mueke, 1969, p.128)

An example of such a man is Kierkegaard who presents the main theses of irony in an ironical manner. As a general ironist there is no alternative but to continually practice irony. Kierkegaard's irony is relevant to the thesis of this chapter in three main ways. Firstly through an interpretation of three Greek writers writing on Socrates. Secondly as a concentration upon the more comic (and therefore more serious) of them. And thirdly as a consideration of Socrates's relationship between Hegel and the Sophists.

Kierkegaard's *The Concept of Irony* (1966, 1992) is divided into two parts: the first part interprets the position of Socrates as an ironical position, and the second part extends this ironical position to other domains (other than the Greek). Our employment will concentrate on the first part for the first two relevant ways (Socrates and the Aristophanic cloud), and the second part for the third relevant way (Socrates, Hegel, and the Sophists).

The position of Socrates is conceived as ironical, firstly, in that:

> "... it is in Socrates that the concept of irony has its inception in the world." (Kierkegaard, 1966, p.47)

There was no harmony between the outer and inner (or the upper and lower levels as stated in Mueke) "... for the outer was in opposition to the inner, and only through this refracted angle is he [Socrates] to be apprehended." (Kierkegaard, 1966, p.50). This is to be interpreted as two of the three essential elements (the double layered and the opposition) as proposed by Mueke. This conception of Socrates, however, is made possible when three of his closest contemporaries are extensively considered. They are Xenophon, Plato, and Aristophanes. Each has written extensively on Socrates, and together they represent the spectrum of plausible interpretations of Socrates. Here we will briefly consider each author, and then their combined interpretation.

Xenophon's purpose in writing of Socrates was to show the monstrous injustice that the Athenians made in condemning Socrates to death. However, instead of showing Socrates to be innocent of the charges made, Xenophon

shows Socrates to be innocuous. Therefore, instead of seeing Socrates as not guilty, we see Socrates as incapable of being guilty. The main reason for this is the style of Xenophon, he 'situates' Socrates within a total lack of situation (1992, p.16), where the power of Socratic irony is to be found in the situation as dialogue.

> "This emphasis on situation was especially significant in order to indicate that the true centre for Socrates was not a fixed point but an *ubique et nusquam* (everywhere and nowhere)," (1992,p.16)

To ignore this situational irony of Socrates is to ignore much of the ironical position of Socrates, if not all, since the irony of Socrates was delivered from a point anywhere, effectively nowhere, to a point that detected the presence of the idea, effectively everywhere. We find, therefore, no ironical treatment of Socrates in Xenophon, only Sophistry:

> "In the Xenophonic conception of Socrates, therefore, we have the parodying shadow corresponding to the idea in its manifold appearance. Instead of the good we have the useful; for the beautiful, the serviceable; for the true, the established (Bestaaende); for the sympathetic, the lucrative; for the harmonious unity, sobriety." (1966, p.63)

In an ironical way, therefore, we find that the Xenophonic interpretation of Socrates awaits an ironical interpretation of itself, as it seriously fails to understand the situational irony of Socrates. (We will consider Socrates's relationship with the Sophists in the third relevant way).

The most popular interpreter of Socrates is Plato. In Plato we find two main types of dialogue: Narrative and Dramatic. The Narrative dialogues (for example, *Symposium* and *Phaedo*) are historically more respectful of the views of Socrates. The Dramatic dialogues (for example, *Apology* and *Crito*) are Plato's views reflected onto Socrates. Between these two forms of dialogue we achieve, therefore, an (potentially) interesting opposition between the 'scenic apparatus' and the 'dramatic elements, where the scenic apparatus relates to the scene of Socrates's own thoughts, and the dramatic elements relate to Plato's interpretations of those thoughts. Kierkegaard must accordingly ask: which is the Socrates and which is the Plato. Of course, there is no possible answer, only further questions regarding further interpretations (the next question to be asked is which is the Socrates of Kierkegaard and which is the Plato of Kierkegaard). Despite this, Kierkegaard shows the reader that Socratic irony manifests itself in *Apology*, where after the sentence has been passed calling for the death of Socrates, he speaks of his desire to continue his form of irony amongst the dead:

> "Above all, I shall be able to continue my search into true and false knowledge; as in this world, so also in that; I shall

> find out who is wise, and who pretends to be wise, and is not .... For in that world they do not put a man to death for this; certainly not." (Plato, 1989, p.469)

For Kierkegaard this is the genuine Socrates (though we accept the irony even here). This is the "irony in all its divine infinitude" (1992, p.40), a relentless irony that continues after death to question those unavailable in life, an irony that is not punishable by death, an irony that allows nothing to endure, not even the presence of life. It is difficult to make such a Platonic analysis of Socrates so brief, but we must in order to enable further analyses of Socrates. We can, however, help to summarise the relationship between Plato and Xenophon:

> "Irony oscillates between the ideal [Platonic] self and the empirical [Xenophonic] self; the one would make Socrates a philosopher, the other a Sophist." (Kierkegaard, 1966, p.158)

The Xenophonic Sophist as the opportunist, egoist, who says 'Man is the measure of all things'. The Platonic Philosopher who shows that the measure is the measure of man's arrogance, and nothing but a reflection of his own ego. Plato's Socrates is a tragic Socrates (Kierkegaard, 1992, p.128) which exists as another opposition to the comic Socrates of Aristophanes (we witness here the Platonic centre to Kierkegaard's Socratic interpretations, and subsequently we will show why we need to change this).

Aristophanes exists as the finitude of Socratic irony, in that it treats Socrates to an ironical or parodying (essentially a satirical treatment) experience. This parodying exercise marks the opposition to the relentless irony of Socrates:

> "As every development usually ends by parodying itself, and such a parody is a guarantee that this development has outlived itself, so the comic conception is also a moment, in many ways an infinitely correcting moment, in the total illustration of a personality or tendency." (Kierkegaard, 1966, p.158)

Care must be taken here, as Kierkegaard seems to be suggesting the supremacy of parody with regard to irony, where the 'infinitely correcting moment' of parody acts upon the subordinated irony. This must be seen as an inability to recognise that infinity and totality are incomparable, as infinity cannot shape totality, as totality is a consequence of the finitude of expression, and not a consequence of infinitudes. The inability to recognise this point confuses the relationship between parody (essentially satire) and irony (see table 10.1 above for further clarification). However, we need to pursue the importance of parody within (not without) irony, and Aristophanic Socrates allows us to do this.

In *The Clouds* Aristophanes parodies Socratic irony as being empty, vacuous. An irony that has a hollow interior, a directionless movement that contains the whole world of possibilities but in doing this has no content. Aristophanic parody turns into irony as it begins to take on some of the essential

elements of irony. Aristophanic irony operates between the Socratic subject and his proposed objective. Aristophanes considers such a relationship as 'reciprocal impotence':

> "Aristophanic irony undoubtedly lies in the reciprocal impotence: that of the subject who, in seeking the objective, obtains no more than its own likeness; and that of the clouds, which grasp merely the subject's likeness and produce this only so long as they continue to see the object." (Kierkegaard, 1966, p.164-5)

The proposed objective is never clear, as to clarify would be to offer the objective up as a target for irony. Suggested objectives, however, surface from time to time, for example, the search for the 'being-in-and-for-itself' (1992, p.220) as the good which is free from reality. The subject, however, is Socrates. The relationship between the subject and the object is the 'cloud'. The cloud symbolises the impotence, the vacuity of the Socratic project, and the negative dialectic that absorbs Socrates (in response to the Sophist's positive dialectic). The Sophists grasp forward, seeking advantages, Socrates looks back to himself, seeking ignorance. Where the negative dialectic is an infinite self-regression, and the positive dialectic is an empirical actuality (symbolised by a basket in *The Clouds*).

The combined interpretation of these three authors can operate as a spectrum, but not a fixed spectrum. Xenophon begins in exaggerating the need to be useful as a means to achieve the good. Aristophanes continues in

adding and developing (comically) the notion of the negative dialectic. And Plato finishes in the tragedy of the ironical *idea*. These three interpretations have much 'intervening space' and here Kierkegaard proposes to inform this space:

> "... its relation to the idea is negative - that is, the idea is the boundary of the dialectic. Continually in the process of leading the phenomena up to the idea (the dialectical activity), the individual is thrust back or flees back into actuality [Xenophonic]; but actuality itself has only the validity of continually being the occasion for wanting to go beyond actuality - yet without its taking place [Aristophanic]; whereas the individual takes the *molimina* [efforts] of this subjectivity back into himself, incloses them within himself in a personal satisfaction; but this position is precisely that of irony [Platonic]." (Kierkegaard, 1992, p.154)

The relationship between the second stage and the Aristophanic Socrates is important. The Acuity that takes a metaphorical cloud to represent the inability to maintain an Architectural structural consistency is the same metaphor that Aristophanes uses to show the Socratic negative dialectic. The Acuity is that negative dialectic to the positive dialectic of the Architecture. The 'contentless content' is the recognition of the linguistic hold upon the *idea*. Content is proposed in the Architecture in a non-ironical sense. Here the Acuity

can see that the notion of content is nothing more than a desire to escape the negative dialectic and simultaneously a desire to go beyond that content. It is the Aristophanic cloud that offers this view.

The relationship between Socrates and Hegel brings out the importance of this Aristophanic cloud. In postulating that Plato moralised the dialogues where Socrates had emphasised the negative dialectic, Hegel witnesses the importance of this Aristophanic cloud. Aristophanes

> "... drove this dialectic to its bitter end; yet it cannot be said that injustice is done to Socrates by this representation ... indeed, one must admire his depth in having recognised the dialectical aspect in Socrates as being negative and in having presented it (though after his own way) so forcibly ... [Socrates's] consciousness thus becomes the pure freedom over the determinate content ..." (from Hegel's *Geschichte der Philosophie*, p.89, as quoted in Kierkegaard, 1992, p.227)

Aristophanes offers the reader an understanding of the negative dialectic as the 'pure freedom' of Socratic consciousness. This pure freedom ironically opposes the determinate content of the Sophists, the pure freedom that shows that knowledge cannot be represented as determinate content. Knowledge is freedom from the determinate nature of content, to become impressed by determinate content is to be enslaved by the opposite of knowledge: ignorance. The Sophists were guilty of being ignorant, ignorant that knowledge is freedom from the determinate nature of content. It is the confidence of the Sophists, a

confidence that permits them to say that 'everything is true', 'Man is the measure of all things', able to say anything about everything. It is this confidence that becomes the enemy of Socrates, and to defeat this confidence is to reveal ignorance, to show the infinity of possibilities. In this defeat there is no 'winner' as nothing is established "... irony establishes nothing, because that which is to be established lies behind it." (1992, p.261). Behind it lies something higher that still is not (contented). It is this that shows irony as the condition for all artistic work:

> "The more irony is present, the more freely and poetically the poet floats above his artistic work ... Therefore irony simultaneously makes the poem and the poet free. But in order for this to happen the poet himself must be master over the irony." (Kierkegaard, 1992, p.324)

This freedom can be witnessed in humour, and the requirement of the mastery of irony is the requirement of self-creation. The humour of self-creation, therefore, is the interest for the next section.

10.2.2 The Humour of self-creation

We will concentrate upon self-creation to begin with and then move onto humour. Both concepts will be treated within a philosophical context, thus preserving the overall theme of this chapter. Self-creation will be explained in its ironical context by the work of Rorty (1989). Humour will be explained in its ironical context by the work of Lang (1990). Both texts are sufficiently coherent to offer a description of irony as the 'humour of self-creation'.

Rorty (1989,p.73) begins his thesis on self-creation with three conditions that an ironist must fulfil.

> " (1) She has radical and continuing doubts about the final vocabulary she currently uses, because she has been impressed by other vocabularies, vocabularies taken as final by people or books she has encountered; (2) she realises that argument phrased in her present vocabulary can neither underwrite nor dissolve these doubts; (3) insofar as she philosophises about her situation, she does not think that her vocabulary is closer to reality than others, that it is in touch with a power not herself."

Let us consider these conditions one at a time. The first condition requires an understanding of what Rorty means when he writes of 'final vocabularies'. 'Final vocabularies' are a set of words that a person uses to

justify her actions: 'final' in that all arguments that can defeat the justification are based upon circular reasoning (sharing the same assumptions of the justification that requires defeat), and 'vocabularies' in that notions such as 'truth' 'correct' and 'real' are all contained within the vocabulary, they do not exist outside of that vocabulary. Final vocabularies are the limit of language. In the first condition, therefore, the ironist realises that vocabularies are to be used within the limits of language, and that all words and ideas (as organisations of words) are limited, and that this limitation causes continual radical doubt for the ironist. The second condition shows the effect that her vocabulary has upon the existence of that vocabulary, if anything it promotes doubt. The third condition reiterates the effect that vocabularies have upon doubt, here the doubt that her vocabulary is 'more real' than other vocabularies and that her vocabularies are contained by another power and not by her-self. This leads the ironist to the continual conclusion that in order to re-appropriate the current vocabulary it is necessary to create vocabularies. This creative act is a committed act, committed to the re-appropriation of current vocabularies. This is not, therefore, to "... ironically avoid the constraints of objectivity and guard [oneself] ... against being committed to anything." (Schmitt, as quoted in Callinicos, 1989, p.48) as Schmitt contends, but to respond to the constraints in their linguistic contingency. We are unable to step outside of language, to critique language, but we are able to create languages, and it is this act of creation that can enable the ironist to re-appropriate her vocabulary, though this act of creation is continual. If we are to create languages then we must accept that what we are creating must necessarily be different from what existed

prior to the realisation of self-creation (otherwise what is the motivation for self-creation?). Different (as growth metaphorically differentiates, see Flood and Carson (1988)) but not incommensurable:

> "They [Hegel, Nietzsche, Heidegger, in general paradigmatic representatives of ironist theorising] want a way of seeing their past which is incommensurable with all the ways in which the past has described itself. By contrast, ironist novelists are not interested in incommensurability. They are content with mere difference." (Rorty, 1989, p.101)

Mere difference is the difference that is created when one realises that one's own contingency is different from another's contingency. And the act of self-creation is motivated by the desire to create a vocabulary that does not repeat inherited and traditional problems. The act of self-creation, in this sense, is the opposite of common sense ("The opposite of irony is common sense." (Rorty, 1989, p.74)), as it questions common sense as continuation of the same, traditional problematics. The act of self-creation would agree with Blake's *Jerusalem*:

> "I must Create a System, or be enslav'd by another Man's."
> (as quoted on page 109 of Rorty, 1989;)

The creative act of the ironist is motivated by another urge (other than the continuation of 'dead' problematics), an urge to understand the metaphysical urge to theorise:

> "The goal of ironist theory is to understand the metaphysical urge, the urge to theorise, so well that one becomes entirely free of it." (Rorty, 1989, p.97)

Self-creation is, therefore, a 'ladder' that allows the urge to theorise to be understood, and as soon as this urge has been understood (this thesis offers some ideas) then the ladder can be discarded. This is because it is the urge to theorise that is the urge to establish final vocabularies. Self-creation exists as irony in that the ladder enables 'ignorance' to be uncovered within the confidence of final vocabularies (the Sophist's final vocabulary of 'Man is the measure of all things' exists as an excellent example). The action of humour has a similar effect upon such confident vocabularies, and this will bring this chapter to a finish.

Lang (1990, p.104-113) proposes four types of humour: irony, satire, romance, and farce. We prefer here, in accordance with the philosophical nature of both metaphor and irony (stated in subsection 9.1.2), to maintain a philosophical rather than a literary approach, which explains our employment of Lang as opposed to the more literary approach of Frye (1957)(Frye, actually recognises six phases of ironic comedy: low norm, escape, high norm, tragic, fatalistic, and bondage, see pages 226 to 239). Each type creates a humorous situation, though in very different ways. Irony creates conflict with no view to reconciliation. Satire creates conflict, though as we stated above (Mueke, 1969) conciliation is possible. Romance transforms a conflict into a harmonious marriage or reconciliation. Farce leaves things exactly as they were before the comical situation was created. They are consequently motivated by different

'powers'. Irony is motivated by wanting to know, it assumes a role of weakness and self-deprecation. Satire is motivated in a more practical manner, by wanting to act rather than wanting to know. Romance is motivated by the power of hope and expectation: "No one in a romance, Don Quixote protests, ever asks who pays for the hero's accommodation." (Frye, 1957, p.223). Farce is motivated by the physical role of power. Lang gives philosophical examples for three of these types, although he omits satire (see the consideration and exemplification in the above section). For irony Socrates, Plato, Kant, Kierkegaard, and Nietzsche are given. It is perhaps clear how Plato, Socrates, Kierkegaard, and Nietzsche are relevant to irony, but the name of Kant may appear as out of place, so let us offer the example of Kant's use of irony. Kant in separating morality from pleasure uses irony to suggest that a dove may fly easier still in empty space (ie, no air resistance). This is ironical as 'empty space' refers to the dogma of an unmediated grasp of reality which his first Critique attempts to subvert. For Romance Leibniz's *Monadology* is offered, where fragmented experience is reconciliated into a harmonious collection of monads. For Farce we are presented with Plato's *Symposium* and his *Protagoras*. In *Protagoras* Socrates is admitted to a Sophist's party where he recognises Protagoras walking around the house followed by the main Sophists and lesser Sophists, and when he turns to re-enter the house they all quickly turn and proceed with him in the opposite direction. A farcical situation that has been reproduced by the Marx Brothers (and many other comedians). Lang concludes that amongst these four types of philosophical humour irony exists as the most important. It is the most important because of its doubling vision (see above section), a doubling vision which never reconciles.

CONCLUSION

In taking the observations of the previous chapters seriously we are forced to realise that we are unable to content the Acuity. Chapters eight and nine evidence to the reader that process dictates structure, and that this process is our involvement within language, an involvement that enables the Acuist to show content as both noun and verb. The noun is shown as structure, the verb is shown as process, and as process dictates structure then verb dictates noun. Accordingly we need to see how the noun 'content' is constituted by the verb 'content'. We discover that it is constituted by movements within grammar which are called tropes, and these which are guided by associative and syntagmatic relationships. We further discover that it is the associative relationship that interests us here, as the syntagmatic relationships are more structurally (note the presence of the prefix 'syn-') based than processurally based. Associative relationships can be seen as a word's relationship with other words in the search for effective substitutions of that word. That is, substitution as the essential movement within language, acting to resemble and show its opposite. To study resemblance we study metaphor. To study opposites we study irony. We then develop two associative relationships with the Basic Structure developed in chapter nine: the metaphorical and ironical associations. In order to study the inability to content the Acuity, therefore, we need to study metaphor and irony.

In studying metaphor we realise two important philosophical relationships: the philosophical downgrading of metaphor, and the philosophical reliance

upon metaphor. The philosophical downgrading of metaphor seeks to evidence how philosophical discourse attempts to content itself by attempting to separate the figural from the literal. This philosophical effort is a desire to separate language from philosophy, where the literal is 'philosophical honesty, simplicity, plainness' and the figural is 'literary dishonesty, deceptiveness, craftiness'. To separate the figural from the literal is to reveal the simplicity, plainness, and honesty of philosophical discourse. This is the aim of Plato when he constitutes the Platonic-Forms. Their constitution is shown as metaphorically based but their pretensions lie elsewhere. Their pretensions show the metaphors parading as concepts. The reliance upon metaphors for philosophical discourse therefore requires some study, and this is given in the second section. In the philosophical reliance upon metaphor we show two clear examples. An example that shows how metaphor actually creates the distinction between the proper (or literal more generally) and the metaphor (or figural more generally). And a second example that shows how metaphor creates meaning. This second example has important implications for the utility of metaphor within systems thinking, and these implications are clearly shown in reference to Flood and Jackson's *Total Systems Intervention* (1991).

In studying irony we need to firstly introduce the term, and secondly to concentrate upon a respected user of the term. These two requirements form the first section, the Ironology (taken from Mueke, 1969). In the Ironology we show the essential elements of irony, the victims, the objects, the difference between the verbal and situational varieties. We clarify the difference between satire and irony (in order to avoid potential confusions), we introduce *Eironeia*, and show the grades, modes and the specific and general cases of irony. We

move straight on from this introductory subsection to a respected general ironist: Kierkegaard. A study of Kierkegaard allows us to concentrate upon a respected ironical figure: Socrates. Three interpretations of the irony of Socrates are offered in the writings of three Greek contemporaries of Socrates: Xenophon, Plato, and Aristophanes. We find a clear relationship between the Aristophanic Socrates and the Acuity of CST, and this is discussed. Following on from this, Socrates's relationship with Hegel and the Sophists is explained and the importance of irony in artistic work becomes a connection between the first and second sections, as in the second section we consider the humour of self-creation. Irony is clearly involved in the artistic act of self-creation, and the manner in which self-creation recognises the contentless content of final vocabularies is central to an understanding of the ironical displacement that disallows content in this chapter. The chapter finishes with a humorous look at philosophy, again emphasising irony's relationship with philosophy.

Overall this chapter shows the inability to content the Acuity of CST. This inability is due to the internal movements within language. Movements which continually displace the singularity of words. The second stage will now continue by showing the significance that this notion of displacement has for Systems Thinking in relating it to the problem of paradigm (in)commensurability.

CHAPTER ELEVEN: SYSTEMS THINKING DEVELOPMENT

INTRODUCTION

The development of Systems Thinking rests with the 'irony of Acuity'. It is necessary to construct (strength) in order to de-construct (weakness). It is necessary to be without truth (weakness) in order to search for truth (strength). It is necessary to admit to a strength (weakness) in order to become weaker (stronger). The irony plays within the boundaries of strength and weakness, and it is the relinquishing of ideals that ironically manifests itself as an idealistic action that serves as a re-cognition of the absurdity of the boundaries between strength and weakness. It is such an ironical action that Systems Thinking must not forget when searching for 'correct methodologies', 'universal commitments', or 'enlightened communication'.

This eleventh chapter will offer an interpretation of the three previous chapters as a means to develop systems thinking. The three previous chapters showed the process of the Acuity, the structure of the Acuity, and the contents (or desire for contents realising itself as contentless) of the Acuity. We must now employ these three chapters in an effort to develop the notion of 'Acuity' within Systems Thinking. This effort shows itself as a debate concerning paradigmatic (in)commensurability (where the parenthesised 'in' (the contents) becomes a mobile force as dictated by the beliefs and motivations of the

dominant thinkers. If these thinkers wish for commensurability then the parenthesis and its contents vanish. If these thinkers wish for incommensurability then the parenthesis vanishes and the contents become active), where paradigmatic (in)commensurability becomes the issue within systems thinking that requires development from an Acuity of Critical Systems Thinking. This development concerns recognition of an inherent dualism at play within any conceptualisation of paradigm (in)commensurability, and accordingly the main thrust of this chapter is to show how Dualism (unconsciously) dictates any discourse concerning paradigmatic (in)commensurability (Henceforth, p(i)c). However, it is not sufficient to merely show this dictation, we must replace it with an alternative. This alternative is an ironic consideration of p(i)c, however, it is not strictly an alternative because it allows for both commensurability and incommensurability in that it comes before their realisation; this point will be clarified as we proceed through this chapter. The argument of this chapter can, therefore, be seen in three phases: the will and representation of p(i)c (11.1); the Dualistic strain of p(i)c (11.2); and the irony of p(i)c (11.3). The first phase presents the notions of will and representation as useful in shaping comparisons between author's considerations of 'what is reality?' and 'what is (merely) appearance?'. This presentation is seen as useful for the relationship between commensurability and incommensurability, and its dependency upon dualism. This presentation, therefore, leads on to a serious consideration of 'dualistic strain' within the authors' work (strain here referring to the Old English definition of 'inherited', the authors have inherited this (dualistic) strain from their philosophical ancestors). This Dualistic strain becomes the interest of the second phase. The scientific dependency on dualism is evidenced and is necessarily followed by a thorough critique of Dualism. A thorough critique

that allows for an exacting consideration of how dualism dictates any discourse that regards p(i)c. The third phase shows how a more generous appreciation of the power of language (the language that dictates the p(i)c debate being overwhelmingly dualistic in nature within systems thinking) enables an irony of p(i)c. Irony is able to show the many prejudices of dualism and how they operate to classify paradigms as being either commensurable or incommensurable, and here necessarily develop and critique from the Architecture as commensurability in opposition (in its pluralistic attitude) to dualism. It is such an ironical consideration that enables all discourse concerning p(i)c to be thoroughly searched for dualistic strain and pluralistic attitude within an Acuity of Critical Systems Thinking.

11.1 FOUR INTERPRETATIONS OF WILL AND REPRESENTATION

This section comprises of three particular aims: firstly, to introduce the terms 'will' and 'representation'; secondly, to apply these terms to four interpretations; and thirdly, to open up section two of this chapter by emphasising the incidence of a 'dualistic strain' within these interpretations.

11.1.1 Will and representation

In this subsection, the notions of will and representation shall be introduced. The two notions can first of all combine as *will* being the ontological determinant of an epistemological *representation*. This separation of terminology can serve us while we consider the notions of will and representation. Schopenhauer and Nietzsche shall be evidenced as main contributors to the study of these two notions. Let us begin with Schopenhauer, followed by a Nietzschean critique.

The World as Will and Representation (1958) shall be taken as Schopenhauer's clearest introduction to the two terms. We are able to differentiate the two notions. Schopenhaurian will is the acting thing: the acting subject upon the object: the will upon the world. This notion of will can be extended to incorporate representation: " The world is the self-knowledge of the will " (1970, p.462). It is this world that is the 'world of representation'. Schopenhauer, therefore, provides

the ontological acting will with a world alongside the world of knowledge that provides the will with a self. We have two worlds: world as will and world as representation. Schopenhauer believes that this world of knowledge (epistemological) is a world of appearance, and the only world that can be known. The world of knowledge can know nothing of the 'thing-in-itself' (the ontological). The world of knowledge is exclusively a world as representation: the subject that is represented is not singularity objectified: "Rather, it is merely the necessary correlate of all objects, and as such never an object itself" (Janaway, 1989, p.6). In this sense, the world as representation is a world of relationships, never able to objectify, to see the 'thing-in-itself', only able to relate representations of 'things-in-themselves'. Janaway develops Schopenhauer's fine analogy where the world as representation is like an eye that cannot see itself. So, in the world as representation the self cannot see itself. Philosophically speaking, the world creates a riddle:

> "...the answer to the riddle is given to the subject of knowledge appearing as individual, and this answer is given in the word will. This and this alone gives him the key to his own phenomena, reveals to him the significance and shows him the inner mechanism of his being, his actions, his movements. To the subject of knowing, who appears as an individual only through his identity with the body, this body is given in two entirely different ways. It is given in intelligent perception as representation, as an object among objects, liable to the laws of these objects. But it is also given

in quite a different way, namely as what is known immediately to everyone, and is denoted by the word will." (Schopenhauer, 1958, p.100)

The length of this quote signifies its importance to one of the central arguments of this chapter. Schopenhauer juxtaposes the excluding 'world as representation' with the 'world as will'. The world as will is not a knowing, mediating world, it is an acting, immediate world. In the world as will there is no mental causation, there is only the will as action, the will expresses itself in the body that gives a subject of will. Schopenhauer's riddle has given access to the ontological 'thing-in-itself' through action expressing our will. Schopenhauer's juxtaposition of 'world as representation' and 'world as will' creates many problems for the early Nietzsche. Nietzsche at the age of twenty-one read Schopenhauer's *The world as will and representation* and was greatly influenced by it. Influenced, in firstly giving Nietzsche philosophical direction, and secondly in enabling criticism of that direction.

Schopenhauer gave Nietzsche direction in consideration of: 'the groundless, knowledge-less [which] will reveals itself, when brought under an apparatus of representation as world'. This consideration presented itself in Nietzsche's first book *The Birth of Tragedy* (1967) in the Hellenic forms of Apollo and Dionysus. (Apollo and Dionysus are both sons of the greatest of the Greek Gods, Zeus. Both represent extremes: Apollo as a form-giving force, a deity of light; and Dionysus as a form-destroying force, a deity of darkness. Both can be brought "... within closer range ... as the separate art-worlds of dreamland [Apollo] and drunkenness [Dionysus]."; (Nietzsche, 1923, p.22)). A direct

comparison can be drawn between Schopenhauer's 'world as representation' and Nietzsche's 'Apollonian illusion'; and also between Schopenhauer's 'world as will' and Nietzsche's 'Dionysusian immediation' (Megill, 1985). Nietzsche's Apollo and Dionysus are two 'natural art-forces' combining in an antagonism that draws on Schopenhauer in an attempt to deny Schopenhauer:

> "The plenitude of power and restraint, the highest form of self-affirmation in a cool, noble, and reserved kind of beauty: the Apollonianism of the Hellenic will [Dionysus]." (Nietzsche, 1924, p.416)

Nietzsche calls this antagonism between Apollo and Dionysus "one of the great riddles" (1924,p.416), as Schopenhauer earlier had called the excluding natures of world as representation and world as will (and the subsequent formulation of the self unable to see itself) a riddle. The riddle of antagonism consumes Nietzsche, as it consumed Schopenhauer. But where Nietzsche sees initial worth in the antithesis of Apollo/Dionysus, he later sees Dionysus ironically controlling (the area of interest of the third section) Apollo in "the deity of formless frenzy" forcing an Apollonian representation of "passion controlled". Dionysus becomes "[t]he highest state to which a philosopher can attain", an *amor fati* ("one wants nothing other than it is" (Hollingdale, 1983, p.260)). Dionysus is a 'yes-sayer', an affirmer of reality, while Apollo is an isolationist of dreams and illusions. Apollo's isolation always simplifies by presupposing isolated and identical facts which correspond to world-classifications of words and concepts, words and concepts which assume separation of existence in and for itself (Nietzsche, 1986). This Apollonian separation of existence in and for

itself is, for Nietzsche, a Schopenhaurian continuation of the 'world as representation' forcing itself into the 'world as will' (a reversal of Nietzsche's position). Schopenhauer contends the 'thing-in-itself' to be unknowable (the world as will operates under Schopenhauer's (1974) principle of sufficient reason, that there is no application outside of the world as representation) in that the will cannot be represented as it <u>is</u>, the thing-in-itself (Hamlyn, 1980,p.82). Nietzsche sees Schopenhauer's notion of objectivity resting wholly within the 'world as representation' as modes of classification. Classifications that say nothing of subject-transcendent reality, because the world of the subject as the 'thing-in-itself' is wholly unknowable. Schopenhauer's 'thing-in-itself' is immediate and <u>is</u> reality. Nietzsche's reality is real only through its inescapability, not because of its correspondence to an interpretation-free existence (Janaway, 1989, p.342-357). Here, we can see Nietzsche offering a critique to the direction that Schopenhauer had laid out. A critique that needed to formulate 'will-to-power' as a response to our desire for classifying behaviour. Nietzsche's 'will' attempting to explain 'representation'. Will to power is not a Schopenhaurian will to continue life, but a mastery over things, seeking the greatest effect, it is not Schopenhauerian politeness, but Dionysusian brutality. Will to power revels in the multiplicity of what there is and "... provides a reason why no general theory of the character of the world and the things that constitute it can be given." (Nehamas, 1985, p.80). It is Schopenhauer's 'general theory' that will to power denigrates. Schopenhauer generalises the subject of knowing as able to separate itself from its will, to allow the subject of knowing a pure, painless and ahistorical setting. Will to power contends the will to dictate all representations, in that all knowledge is perspectival. Will to power contends that 'perspectivism' can only be attacked by promoting more 'differences of views':

"...the more affects we allow to have their say over something, the more eyes [a reference to Schopenhauer's riddle: 'eye unable to see itself'], different eyes, we are able to engage on the same thing, the more complete will be our 'concept' of this thing, the more complete our 'objectivity'." (Nietzsche, 1973, p.12)

This objectivity calls for the power of 'for and against' in order to control the precision of the variety of knowledge. Let us now consider how objectivity as 'for and against' relates to Schopenhauer's world as will and world as representation. We are able to do this in finishing our introduction of will and representation through a Nietzschean adoption of Schopenhauer, to a Nietzschean denial of Schopenhauer (cf. Janaway, 1989, p.345-355):

(a) The real world falls into subjective <u>modes</u> of classification. (World as representation)

(b) 'For and against' considerations of value, effectiveness in fulfilling our needs fundamentally determine those <u>modes</u>. (World as will)

(c) Objective knowledge is inconceivable if a subject can be found which does not obey (a) and (b). That is if a Schopenhaurian subject as 'necessary state of living' is understood. But if a

Nietzschean subject as 'transcendence of classification of necessary state of living' is understood, then objective knowledge is possible.

Assertions (a) and (b) are Schopenhaurian, while assertion (c) is Nietzschean in its denial of their objective (and therefore, deductive) worth, and counter-deductively asserts a possibility of objectivity. The denial of the objective develops if the deduction of world as will does not determine the world as representation. The objectivity of the world as will must (for Schopenhauer) establish the modes of classification for the world as representation. Nietzsche denies this wilful determination, since the 'necessary state of living' can be translated as the singularity of objectivity. The world as will determines only one stable state of living for Schopenhauer, and according to Nietzsche this forced stability is confused as objectivity. Unhappy with this Schopenhaurian formulation of objectivity, Nietzsche, counter-deductively, is able to consider objectivity as a state that questions the means of classification: where the questions (in their multiplicity) supersede the 'necessary (singular) state' in a quest for a re-definition of objectivity. This is an objectivity that relies upon a multiplicity of limited perspectives controlling 'for and against'. An objectivity that recognises the partiality of interpretations (originating in drives outside of the immediate self) and postulates a mastering of partiality through a multiplicity of perspectives: that liberates from single, partial perspectives.

Will and representation having been introduced shall now be applied through four interpretations, thus forming a consideration of commensurability and

incommensurability to be dealt with in section two.

11.1.2 Four interpretations

This subsection builds upon the previous subsection in attempting to postulate two further interpretations of 'will' and 'representation'. These two further interpretations shall be given by Kuhn's *The structure of Scientific revolutions* (1970a) and Burrell and Morgan's *Sociological Paradigms and Organisational Analysis* (1988). Kuhn's introduction of the term 'paradigm' in his 1962 edition of *The structure of Scientific revolutions* is used in this subsection in order to demonstrate its relationship with 'will' and 'representation'. Burrell and Morgan's (1979) *Sociological Paradigms and Organisational Analysis* opens up the possibility of paradigmatic questioning within Systems Thinking (though its relationship with Kuhnian paradigms is problematical, despite its clear contextualisation of the term (1988, p.35-36)). This subsection, therefore, can be seen as an attempt to relate paradigmatic thinking to 'will' and 'representation', by relating Kuhn and Burrell and Morgan to Nietzsche and Schopenhauer. Let us begin by clearly tabulating all four interpretations; this will be followed by explanations of the Kuhnian and Burrell and Morganian interpretations (since the Nietzschean and Schopenhauerian interpretations can be found in the previous subsection).

Table 11.1: Four Interpretations of Will and Representation

Author	Interpretation of will	Interpretation of Representation
Schopenhauer	- key to own phenomena - 'thing-in-itself' - nature of reality - action through bodily inner mechanisms	Having two essentials halves: - object: forms of space and time - subject: whole and undivided representing being
Nietzsche	- Dionysusian formlessness - deity of immediacy - passion released - will to power as basic drive of all human efforts	- Apollonian formalism - deity of illusion - passion controlled - Linguistically constructed self-contained world
Kuhn	- Tacit knowledge and intuition - the natural stimulus - neural apparatus of scientist	- paradigm as scientific practice (symbolic generalisations, analogies, shared beliefs) - the resultant sensation - scientific community (anomaly, exemplar)
Burrell and Morgan	- ontological nature (nominalism and realism) - human nature (voluntarism and determinism)	- epistemological nature (anti-positivism - positivism) - methodological nature (ideographic - nomothetic)

The table above clearly shows how Will and Representation can be given four distinct interpretations. These interpretations introduce paradigmatic notions to notions of 'will' and 'representation'. First of all, Kuhnian paradigms shall be interpreted through will and representation; followed by Burrell and Morgan's paradigms.

The Kuhnian interpretation consists of three notions of will and three notions of representation. The notions of will are: Polanyi's (1962) tacit

knowledge and intuition; the 'natural stimulus'; and the neural apparatus of the scientist (Kuhn, 1970b, p.267-277). Kuhn's use of Polanyi's tacit knowledge develops from a notion of science as analogy. In this notion, Kuhn separates a way of viewing physical situations from the rules or laws that govern it. The laws developed by Eighteenth-century mechanicians are seen as 'words' while the way of viewing physical situations is seen as 'nature'. It is Kuhn's contention that a 'natural' understanding must come "...prior to the [learning of the] law." (Kuhn, 1970a, p.191). And that this 'learning' is not exclusively verbal, ie it relies upon tacit knowledge. This is a tacit knowledge that 'wills' the researcher to consider different words applying to different natures.

Kuhn's 'natural' stimulus:

> "We posit the existence of stimuli to explain our perceptions of the world, and we posit their immutability to avoid both individual and social solipsism. About neither posit have I the slightest reservation. But our world is populated in the first instance not by stimuli but by the objects of our sensations." (1970a, p.193)

This is a 'natural' stimulus that would not exist if it were not for the 'objects' of our sensations. The will to perceive by stimuli is given by the objects that present themselves for perception. This is Kuhn's second notion of will: that natural objects promote perception through stimulus, giving a natural stimulus.

Kuhn's third notion of will is given in his analysis of the neural apparatus of the scientist (Kuhn, 1970a, p.192-198, and Kuhn, 1970b, p.276-277). The neural apparatus "...transforms stimuli to sensations...[and is] governed by the same physiochemical laws that govern perception on one hand and the beating of our hearts on the other. " (Kuhn, 1970a, p.195). It is clear how this third notion relates to the second, in that the neural apparatus takes the stimuli and presents it to the perceptual senses. The neural apparatus is prior to representation, and is a basic force, so to this extent its relationship with will is clear.

Kuhn's three notions of representation are based upon his notions of will and develop from them. We have: paradigm as scientific practice; the resultant sensation; and the scientific community. First of all: paradigm as scientific practice. Kuhn's definition of paradigm is problematical (see for example Masterman's (1970) twenty-one definitions of paradigm; and Shapere's (1981) accusations of relativism and vagueness) and will be restricted to 'as a disciplinary matrix' and 'as an exemplar'. The disciplinary matrix relates to "the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community" (Kuhn, 1970a, p.175). And an exemplar relates to "one sort of element in that constellation, the concrete puzzle-solutions which, employed as models or examples, can replace explicit rules as a basis for the solution of the remaining puzzles of normal science" (Kuhn, 1970a, p.175). These two definitions show the two levels of paradigmatic representation evident in Kuhn's work. On one level a paradigm represents a matrix of values and techniques that disciplines the members of a given community; and on another level the tech-

niques (of the matrix) exemplify possible methods with which to solve concrete problems within that community. Two levels of representation for two levels of resolution.

Secondly: the resultant sensation. As mentioned earlier, the stimuli-sensation process is the 'concern' of Kuhnian will, but the resultant sensation becomes the concern of Kuhnian representation. There is however, some confusion (between notions of will and notions of representation) in Kuhn's texts, since, in one instance "...[when] interpret[ing] sensations...the processes involved must ultimately be neural, and they are therefore governed by the same physio-chemical laws that govern perception on the one hand and the beating of our hearts on the other." (Kuhn,1970a,p.195), while in another instance, Kuhn has "been opposing in this book...the attempt, traditional since Descartes but not before, to analyze perception as an interpretive process, as an unconscious version of what we do after we have perceived." (Kuhn, 1970a, p.195). The confusion surrounds the grounding of both the perceptional and the interpretive processes as neurally governed processes. If both processes are thus governed, then perception remains a Cartesian interpretive process, as the interpreting of sensations remains unconscious. The resultant sensation needs to be seen as a representative force rather than a neurally conditioned force of will. This confusion in Kuhn's text shall be further considered in this paper.

Thirdly: the Scientific community. A community that is founded upon stimulus-sensation correlations (as already hinted at): "Since we know how (as Descartes did not) that the stimulus-sensation correlation is neither one-to-one nor independent of education, we may reasonably suspect that it varies somewhat

from community to community, the variation being correlated with the corresponding differences in the language-nature interaction. The sorts of communication breakdowns now being considered likely evidence that the men involved are processing certain stimuli differently, receiving different data from them, seeing different things differently." (Kuhn, 1970b, p.277). According to Kuhn, different scientific communities are represented by communication breakdowns, where the processing of received information differs according to the community of which you are a member. This notion of paradigmatic incommensurability through representational differences shall be further considered through this paper.

Having considered Kuhn's interpretations of will and representation, we can now move onto Burrell and Morgan. Burrell and Morgan's interpretations consist of two notions of will and two notions of representation. The notions of will are ontological nature and Human nature; while the notions of representation are epistemological nature and methodological nature. First of all the two notions of will shall be considered. Burrell and Morgan's ontological nature separates 'what is' into nominalism and realism. Ontology can be seen as "... the social world extended to individual cognition." (Burrell and Morgan, 1988, p.4). Nominalism considers this world to be conceptually fabricated around artificial divisions; unlike realism which considers this world to be real, tangible and independent from conceptualisations, indeed it exists prior to any artificial division (epistemological division). The notion of will operates prior to individual cognition and is, therefore, an ontological concern for Burrell and Morgan.

Human nature is the relationship between man and society (and consequently should be called human society rather than human nature), and its extremes are determinism and voluntarism. Determinism advocates complete societal control of man (nature emphasised over the human). Voluntarism advocates man's complete control over society (the human emphasised over the nature). Voluntarism considers the notion of will to be vital in any scientific discourse, while determinism attempts to denigrate the notion of will. The implications of these extreme positions for paradigmatic (in)commensurability shall be discussed later in this chapter.

Burrell and Morgan's notions of representation are: epistemological nature and methodological nature. Epistemology is theory about 'knowledge of what is'. Burrell and Morgan consider two extremes: positivism and anti-positivism. Positivism advocates traditional induction and deduction as central to the growth of knowledge. Anti-positivism rejects the tenets of value freedom of the observer (implied in induction and deduction) and theory neutrality (implied in the growth of knowledge) and replaces them with a relativism based upon valued experience. Both epistemological extremes represent theories that can be discussed and critiqued by scientific communities; to this extent, epistemology is the concern of representation rather than will.

Burrell and Morgan's methodological nature has two strands: nomothetic and ideographic. Nomothetic methodologies seek constancy through laws, and comparison through quantification. Ideographic methodologies seek

to bypass established laws and achieve direct contact with the phenomena being studied (or rather, experienced). Representation exists in the nomothetic laws and the ideographic symbols.

Having related will and representation to paradigmatic thinking (evidenced here by Kuhn and Burrell and Morgan), this first section will finish in a consideration of the incidence of dualistic strain within these four interpretations.

11.1.3 Incidence of dualistic strain

The main aim of this sub-section is to relate 'will', 'representation', and 'paradigmatic thinking' to 'dualism'. An introduction to the manner in which dualism shall be related is, therefore, required. However, an extensive treatment of dualism is the interest of section 11.2, therefore, dualism will only briefly be introduced for the purposes of relating it to the two previous sections and acting as an introduction to the next section.

Initial care needs to be taken in introducing dualism, because the phrases used shall determine the subsequent incidence of 'dualistic strain'. Dualism is a separation of mind from body (ontological) and a consequential separation of subject from object (epistemological)(Wooliston 1991b). The Dualism that is the concern of this paper is Cartesian. Cartesian dualism holds our imagination (Wiseman, 1989) because of its power to distance the mind from the body (on-

tological). It is the mind's 'I' that perceives of materialism through its distinct lack of materialism (Schoolman, 1984). This 'distinct lack' takes on an epistemological representation when the mind becomes the thinking subject upon which objectified knowledge is totally dependent. In this sense, we are able to allow the **will** of the mind to separate itself from its body, and to **represent** itself as a subject upon which objects become totally reliant upon. But we only allow these relationships to develop in order to demonstrate how subsection 11.1.3 may relate to subsection 11.2.1, and in a more general sense how section 11.1 relates to section 11.2.

The dualistic strain relates to will and representation in many ways, both clear and obscure. The dualistic strain refers to body-mind distinctiveness in order to base objectifications upon a thinking subject. Let Descartes show his dualism in order for the four interpretations to be precisely related to it:

> " ... I reject as absolutely false everything in which I could imagine the least doubt, so as to see whether, after this process, anything in my set of beliefs remains that is entirely indubitable **[1]** ... during the time I wanted thus to think that everything was false, it was necessary that I, who thought thus, be something. And noticing that this truth - I think, therefore I am - was so firm and so certain that the most extravagant suppositions of the sceptics were unable to shake it, I judged that I could accept it without scruple as the first principle of the philosophy I was seeking **[2]** ... I was a substance the whole essence or nature of which was merely

to think, and which, in order to exist, needed no place and depended on no material thing. Thus this "I", that is, the soul through which I am what I am, is entirely distinct from the body **[3]**... [allowing a clarity which] assures me that I am uttering the truth [and that] the things we conceive very clearly and very distinctly are all true **[4]**." (Descartes, 1980, p.17-18, my notation)

This above quote is an indication of the persuasiveness of Cartesian Dualism, in its movement from total doubt to total truth. This movement can be represented in four distinct stages (taken directly from the quote):

(1) Reject everything except the indubitable
(2) Since 'I' was thinking (1), 'I' becomes indubitable
(3) 'I' in its indubitability only continues to think and needs no body (a Cartesian body that would provide doubt)
(4) The clarity of the thinking 'I' and its distinct separation from its body assures truth

These four distinct stages allow for a clear relationship between dualism, will, and representation to be considered. The clear relationships (as opposed to the more obscure and therefore complex, which are shown in section 11.2) shall be briefly introduced here. Each of the four interpretations shall be considered,

beginning with Schopenhauer and ending with Burrell and Morgan. This brief introduction sets the scene for a more detailed treatment of dualism, to be given in section 11.2.

Referring to Table 11.1, Schopenhauer places all his notions of indubitability in the 'thing-in-itself', because its privileged immediacy avoids any doubt (initiated with forms as representations). Schopenhauer's act of will is seen as the nearest/clearest phenomenon of the 'thing-in-itself' (Hamlyn, 1980), lying outside the possibility of plurality, and determining phenomena (thereby being the noumenal self, also note that the singular 'phenomenon' determines the plural 'phenomena'). In its act of determination a clarity of thought may be evidenced that assures us that representations constitute empirical reality. Schopenhauer is constantly at pains to distance himself form Descartes (see, for example, Janaway, 1989, p.227). Schopenhauer does not wish to make 'I' distinct from body as Descartes wishes, instead he proposes a psychological state of *willing* that implies embodiment through comparisons with other life-forms. Schopenhauer's 'will' is, therefore, not Cartesian mind or body, it is the mind's 'will' embodied by the body. If we look further, however, we see that it is Schopenhauerian 'will' that allows the Cartesian mind to 'know' the 'known'. Schopenhauer's 'will' is, therefore, in an awkward relationship with Descartes's 'mind'. Firstly, as the mind embodied by the body (here showing the primacy of the body), and secondly, as the mind being allowed to know the known (where the 'known' is the object, the 'body' of knowledge, that is known by the knowing subject, the 'mind'; here showing the primacy of the mind over the body). We can, perhaps, achieve some kind of understanding of this confused relationship between Schopenhauer and Descartes if we show the analogy of the 'will as a

strong blind man' and 'representation as the sighted intellect, lame, and being carried on the shoulders of the blind man'. Here we have the 'body' carrying the 'mind', both interdependent, both impotent without the other. However, it is the 'mind' that is aware of its impotence while the 'body' can never be aware of its impotence, and perhaps here we can see a clear dualistic moment within Schopenhauer.We can see, therefore, that Schopenhauer's distance from Descartes is far from unproblematical and the implications of this relationship become important later on in this chapter.

Nietzsche in Table 11.1 rejects everything except 'will to power'. Nietzsche's will to power has little similarity with Schopenhauer's 'will' (see section 11.2.2 for the plurality of the will). For example, where Schopenhauer's will lies outside the possibility of plurality (as a determinant), Nietzsche's will to power asserts that there is nothing but other things: there is no 'thing-in-itself' (Nietzsche, 1924, p.72, note 529). If Nietzsche is able to dispense with the 'thing-in-itself', then all Cartesian notions of indubitability are lost, along with absolute faith in the thinking subject (as the thinking subject is the 'thing-in-itself' in its immateriality, in its determination of material 'things'). Nietzsche reads Descartes as merely following a grammatical custom when he relates unconditional certainty to the notion 'I think'. The grammatical custom begins with the analogy (between 'I' and 'thinking') and sustains itself with an apriori belief in substance. The connection between the thinking self and the substance becomes the mechanism whereby Descartes (1927) sets an agent to every action, this being a dualism that Nietzsche is able to overturn as 'fiction'. This relationship between Descartes and Nietzsche has only been introduced here, we will continue this complex relationship in the next section.

Relating the tabulated Kuhn (in 11.1) to the Cartesian four distinct stages, we can see some interesting commonalities. First of all, there exists an a priori belief in a natural stimulus. An a priori belief that extends to a positing of its immutability (Kuhn, 1970a, p.193). The immutability of the natural stimulus allows for the resultant sensations to be partners in a neural apparatus that is governed by physio-chemical laws. These laws exist as the first certainty of perception and to this extent relate to stage (2). However, the manner in which Descartes arrives at stage (2) is very different to the way in which Kuhn arrives at stage (2). Kuhn is aware of this Cartesian distinction within his own work and makes many references to the naïvety of Descartes. For example, Kuhn's assertion that Descartes's correlation of stimuli and sensation as a simple one-to-one disregards the effects of education and the incidence of different stimuli processing techniques. Kuhn makes attempts to include such criticisms within his own conception of neural apparatuses, but is unable to escape the clear relationship between the immutability of his neural apparatus and the Cartesian indubitable 'I' in stage (2). Further commonalities between Kuhn and Descartes will surface in sections 11.2 (notably subsection 11.2.3) and 11.3.

Burrell and Morgan's relationship between will and representation is one involving categorical extremes: categories that depend upon the will/re-presentation separation in order to construct extreme positions and understand the whole spectrum of sociological thought. The question needs to be phrased: how do the categorical extremes relate to Cartesian dualism? A response could be: the categories have a transparent interest in the epistemological separation of subject and object. As represented on page three, in figure three (1988), where Burrell and Morgan "... have sought to illustrate two broad and somewhat

polarised perspectives." (p.4); the polarised perspectives of subjectivity and objectivity. It is this polarised perspective that forms the first dimension (the other being 'regulation' and 'radical change') in their proposal for four sociological paradigms. It must be noted, however, that *Sociological paradigms* is a descriptive analysis of four incommensurable paradigms, and in this sense demands polarised perspectives in order to strengthen the case for incommensurability (there are, of course, many other ways to strengthen one's case for incommensurability, but this overtly Cartesian approach is seen as the most common). It also needs to be noted that the subjective-objective dimension is accepted as an 'all-round perspective' in response to the functionalist-orientated multi-disciplinary teams (1988, p.401), and to this extent neglects a critical consideration of the proposed framework (critical here referring to 'critical understanding of different meanings in different contexts and the meanings and the contexts being allowed to change'). Sections 11.2 and 11.3 of this paper shall consider the implications of this uncritcal acceptance of the subjective-objective dimension with regard to questions of paradigmatic (in)commensurability.

This first section consisted of three particular aims: to introduce notions of will and representation; to evidence four important interpretations of these notions (the first two as 'introducers' of will and representation, and the second two as 'introducers' of paradigmatic argumentation); and to briefly show how dualism relates to these interpretations . Section 11.2 follows directly from subsection 11.1.3, and from section 11.1 more generally, in its consideration of the Dualistic strain.

11.2 THE DUALISTIC STRAIN

This section will build upon the notions introduced in the first section in developing a relationship between dualism and plurality. This is to be achieved in three sections. Subsection 11.2.1 shall give an indication of the scientific dependency upon dualism. Subsection 11.2.2 shall warn that this dependency restricts scientific progress and must be challenged by a plurality of notions that seek to dispel the scientific-dualistic myth. Subsection 11.2.3 shall further develop the consequences of this dependency as they affect the paradigm (in)commensurability debate. In this section, therefore, we concentrate upon dualism, firstly to show its relationship with science, secondly to show how this relationship must be challenged, and thirdly to expand our understanding of the dualistic strain within paradigmatic (in)commensurability. We carry on where 11.1.3 left off and finish where 11.3 will begin.

11.2.1 The Scientific dependency upon Dualism

This subsection builds upon the dualistic strain introduced in subsection 11.1.3, and has two aims: to clearly demonstrate the ontology and epistemology of dualism (and how Cartesian dualism confuses this distinction), and to show how science is dependent upon dualism.

Scientific dependency refers to scientific practice that relies upon an unquestioned ontology, and this reliance spells dependency as the mechanisms to question this ontology are unavailable within the adopted philosophical position. The ontology of dualism allows an unquestioned separation of mind and body which leads to an unavoidable epistemological separation. As scientific dependency cannot question this ontology its epistemology actually deepens the dependency. Scientific dependency upon dualism, therefore, refers to scientific practice that carries the unquestioned ontology into a theory of knowledge based upon subjective representation and objective cognition. The objective cognition is no longer merely limited to the Cartesian *cogito* but includes all forms of measurement and control currently employed within scientific (and pseudo-scientific, though this prefix can equally be applied to the former) activity. The objective cognition becomes an absolute cognitive starting point that must correspond to (or be reflected in) an exacting and absolute subjective representation (in this sense, in the sense of scientific practice, representation becomes a reflection of the exactitude of cognition). The epistemological 'chain' that follows the ontological separation forces exactitude as reason within an unreasonable world. The exactitude is recognised in subjects that correspond to the exactitude of the objective cognition (a cognition determined by the mind, an exactitude that must be divorced from the body). Science is reasonable if it contains itself within an epistemology of exactitude. Science has historically become confused as being synonymous with this exactitude, it has become historically dependent upon dualism.

As previously stated, Cartesian dualism operates at two distinct levels: ontological (mind-body (the perceptual to the system)) and epistemo-

logical (object-subject (mind to that which it refers)) (Ben-Zeev, 1989). The operation at two distinct levels exists only in a thorough critical interpretation of Descartes, as Descartes himself does not find it necessary to uphold the onto-logical-epistemological distinction. For Descartes, the mind 'naturally' becomes the object, as naturally as cognition must become the centre of all indubitable 'things'. If we refer to the earlier introduction to dualism we can clarify this Cartesian act. We must recall the four distinct stages:

(1) Reject everything except the indubitable
(2) Since 'I' was thinking (1), 'I' becomes indubitable
(3) 'I' in its indubitability only continues to think
and needs no body (that would provide doubt)
(4) The clarity of the thinking 'I' and its distinct
separation from its body assures truth

These four distinct stages are unable to maintain a distinction between ontology and epistemology. The distinction between ontology and epistemology necessarily shows the orientation of the philosophy and the means to continually question and redefine that orientation. If the distinction between the orientation and the means to question is not given, then we must presume that a distinction is not intended, and that ontological questioning is not promoted. It is not pro-moted in Cartesian dualism as the epistemological drive for indubitability (the opposite of epistemological questioning) runs into an ontological mind that "... get[s] all the beliefs I [Descartes] had accepted from birth out of my mind."

(Descartes, 1980, p.7). Descartes's epistemological truth (or the 'prejudice of dualism') is totally dependent upon an ontological mind that harbours no epistemological prejudices. However, it is a probing of these very (expelled) prejudices that allows the 'prejudice of dualism' and the consequential scientific dependency to be highlighted because it is these prejudices that counteract the 'prejudice of dualism'. In this prejudice of dualism we are able to accept an epistemological invasion upon the mind in order to establish absolute epistemological certainty. We can see, therefore, that the ontological - epistemological relationship in Descartes's work is confused as the epistemological forces the ontological to force the epistemological without any obvious primacy from either direction. The ontological is created from an epistemological desire for absolute certainty: the Cartesian mind is absolutely true on its own terms. The mind is created as doubtless certainty and given an epistemological 'I' where all activity is mentally created, thus the creation of the mental-physical gap:

> "A major reason for the emergence of the mental-physical gap in modern philosophy was the passive characterisation of matter by the new science emerging around the sixteenth century." (Ben-Zeev, 1989, p.513)

This new science developed from mathematics to form a philosophy that is then re-applied to the sciences. We find Descartes taking pleasure in the certainty of mathematics, and at the same time feeling dissatisfied with the absence of certainty in the (other, as distinct from mathematics) sciences (because they are derived from the unfirm foundations of philosophy). It appeared necessary, therefore, to concentrate upon this certainty and apply it with force

to those areas that are lacking in certainty. Hence, mathematics was to be philosophically dressed and re-applied as a scientific derivation. We can recognise this action in two quotes. The first quote explicitly shows Descartes mathematical orientation:

> "I took especially great pleasure in mathematics because of the certainty and the evidence of its arguments. ... I was astonished that, because its foundations were so solid and firm, no one had built anything more noble upon them." (Descartes, 1980, p.4)

Nobility relates here to Descartes's dream of certainty as a philosophical prerequisite. Descartes's era was an era of philosophical uncertainties which bred imprecise sciences:

> "As to the other sciences, since they derive their principles from philosophy, I judged that one could not have built anything solid upon foundations having so little firmness." (p.5)

The scene is set, therefore, for mathematics to be dressed as philosophical certainty and re-applied as the firm foundations for the sciences. The first quote shows the means to make certain, the second quote shows the area of immediate application. The means, however, in their mathematical precision treat matter as characteristically passive. Passive with regard to the 'greatest diversity' that bestows and enacts the thinking 'I':

"But we must take note of the fact that the perception of the wax is neither by sight, nor touch, nor imagination, nor was it ever so (although it seemed so before), but rather an inspection on the part of the mind alone. This inspection can be imperfect and confused, as it was before, or clear and distinct, as it is now, according to whether I pay greater of less attention to those things of which the wax consists." (Descartes, 1980, p.65)

The wax is the passive matter. The wax is awaiting inspection, an inspection that will determine its consistency, a consistency that resides within the mind. The mind decides upon the consistency, its accuracy can be complete with sole reference to the mind's ability to be accurate. No reference need be made to the wax. The wax is passive. The wax becomes a stone, and the difference between the passive matter and the mind is nominated as the 'greatest diversity':

"For when I think that a stone is a substance, that is to say, a thing that in its own right has an aptitude for existing, and that I too am a substance - although I conceive that I am a thing that thinks and not an extended thing, whereas a stone is an extended thing and not a thing that thinks - there is, accordingly, the **greatest diversity** between these two concepts ... " (Descartes, 1980, p.73, my emphasis)

Passive matter is an extended thing, extending from our inspections of its length, breadth, depth. It is said to exist 'in its own right' but this is clearly

an impossibility if we believe in the notion of greatest diversity. Greatest diversity allows one extreme to think, to think things into existence, and the opposite extreme to be thought into existence. The opposite extreme awaits inspection in its passive characteristic, where 'its own right' is necessarily restricted to being constantly available for Cartesian inspection. This passive characterisation continues from the mathematical certainties through to the Cartesian philosophy and finding its greatest success in modern twentieth century science. The flow of dependency is activated in this way. Modern science relies upon the extended things maintaining a passivity in order to be accurately quantified. The mind-body dualism continues in this manner. All forms of Modern science since the seventeenth century have separated the thinking scientist from what has thought thrusted upon it, and epistemologically have attempted to explain only through the methodological (the methodological here referring to the 'method of inspection', where a 'correct method' is presumed and a 'correct inspection' is the consequence). In this sense we see Modern science in a state of confusion with regard to the onto-epistemological relationship being forced to make methodological gestures that consequently bear no consistency with the theory regarding why they do it (epistemological justification) and what it is they do it for (ontological justification). Modern science has privileged the methodological in its need to avoid the complexities of ontological and epistemological questioning. Modern science has allowed itself this privilege in the presumption that Cartesian Dualism has already provided the answers to these questions. These questions cannot be predicted by Dualism or any other philosophy of science, since science in its plurality is unpredictable. This notion of science in its plurality is to become the interest of the following subsection, it will show itself through a necessary critique of this scientific dependency upon dualism.

11.2.2 An Anti-dualism of scientific activity

This subsection forms a critique of dualism in explicitly tackling epistemological and ontological issues. Three authors will be employed, three authors who demonstrate an 'anti-dualistic attitude'. They are: Peirce, Rorty, and Nietzsche. Peirce offers a precise critique of the 'spirit of Cartesianism'; Rorty seeks to replace the traditional Cartesian view of science with a more literary orientated approach (as an emphasis upon the role of language within (the language of) science, and Rorty thereby stands as an anticipation of the third section of this chapter); Nietzsche asserts that we should discard the whole notion of the substantive Cartesian *cogito* in favour of a more realistic 'will to power'. Together these three authors shape an explicit attack upon the epistemological and ontological foundations of Cartesian Dualism.

Peirce's anti-dualism can be seen as explicitly realist in orientation (Thompson, 1953, p.44-52). Peirce's realism begins with the belief that no cognition can become absolutely determinate. To assert this belief Peirce separates cognition from the determining action, since the cognition cannot control the determining action, as this would imply ontological dominance of epistemological truths. To prevent this from happening the determining action is able to inform the cognition. Thereby, the epistemological informs the ontological. The cognition then operates to address an epistemological truth instead of operating to control epistemological issues. For Peirce, cognition as a thought-process is unanalysable; but the determination of cognition seeks generality and in doing this forces abstraction from the immediacy of cognition.

As the generality seeks truth it becomes real. This reality is the realism of Peirce. It is a realism that sees epistemology as an ability to give (or determine) a generalised form to a specific ontological cognition. Peirce's realism admits that reality is no more than true representation (here 'truth' is taken from the cognitive ontology of Descartes and given to the representative qualities of epistemology, see section 11.1). In opposition to this stands nominalism (see section 11.1.2). Nominalism assumes that there is a reality beyond representation (or that the ontological determines the epistemological and can, somehow, be seen directly). A nominalist, in Peirce's terms, believes in the 'thing-in-itself' (see section 11.1.1) "... emphasis[ing]... externality." (Peirce, 1958, p.208). This quote is taken from Peirce's *The Logic of 1873*, but we need to consult articles five years previous to this in order to relate nominalism and realism to the dualist debate:

> "The theories which are presented in the papers of 1868 are stated to be attacks upon the philosophic point of view which Peirce called the *'spirit of Cartesianism'* ... what Peirce meant by this 'spirit' was really nominalism ..." (Murphy, 1961, p.107, my emphasis)

The two relevant papers of 1868 are titled *Concerning faculties claimed for man* and *Some consequences of four capacities*. It is the latter paper (Peirce, 1934, p.156-189) that interests us here as it constitutes the focus of Peirce's anti-Cartesian critique. Peirce (1934, p.156) begins by noting four principles of the 'Spirit of Cartesianism'. These principles are the main methodological consequences of the doctrine of intuition (Gallie, 1975, p.73) and here Peirce advances a comparison with scholasticism (scholasticism of the ancient world

and the Middle Ages argued in defence of the reality of abstract properties; eg. hardness, health, justice, goodness. They had maintained that these properties could be arranged in a hierarchical system by assuming that the most general properties are self-explanatory; we can see that Peirce contrasts heavily with this notion of the self-explanatory) in order to demonstrate some evident limitations. Firstly, Cartesianism advocates universal doubt, where scholasticism never questioned fundamentals. Secondly, Cartesianism teaches that the ultimate test of certainty is to be found in individual consciousness, where scholasticism's test of certainty rests with the testimony of the sages of the Catholic church. Thirdly, Cartesianism teaches a single thread of inference, where scholasticism teaches a multiform argumentation. Fourthly, Cartesianism leaves many facts unexplained (unless "God makes them so" suffices as an explanation), where scholasticism thrived upon mysteries of faith but undertook to explain them. These are the four 'incapacities'.

Peirce's criticisms of Cartesianism tackle each 'incapacity'. Firstly, doubt requires positive reason, therefore, doubt can never be seen as complete: " Hence this initial skepticism will be a mere self-deception." (Peirce, 1934, p.156). Secondly, the Cartesian criterion is "whatever I am convinced of is true". Again this is self-deception: were I really convinced I would have no need for reason. Reason shows how one can become convinced, it acts to persuade one to become convinced, but once one is convinced then reason becomes irrelevant with regard to what one is convinced about. The relationship between reason and conviction is seen as a social dimension, and Descartes ignores the social dimension and thereby the ideal of argument is surrended (Scheffler, 1974, p.53).

Thirdly, Peirce is firmly against mathematical linear deduction, constantly employed by Descartes. Peirce believes, rather, that trust should reside in a multitude of arguments and not in the conclusiveness of one:

> "Peirce was always speaking of a system in progress and many of his papers can be read as systematic works: thus one is obliged to reconstruct the Peircian system and is continuously challenged by the *"libido mutandi"* of his author." (Eco, 1976, p.1457)

The multitude of arguments that Peirce took very seriously in that his desires (*"libido*) for the general scope of his philosophy were constantly changing (*mutandi"*). It is considered to be more revealing to host a multitude of challenges to one's rationality rather than to seek for one conclusive rationality that depends solely upon a deductive train of thought. A deductive train of inference is only capable of transmitting what is already contained in the premises for deduction. Here Peirce compares a chain (deductive train of inference) with a cable (multitude of arguments). A chain is no stronger than that its weakest link (which is often the premise, as the premise requires a deductive logic in order to bolster its claims and thereby lose the pretensions of the premise), while a cable, in its numerous intimate connections, is as strong as the web that it forms (here we see an emphasis upon the process of thought as ideas relate to each other, and this is in opposition to the 'residue' of thought, the ideal structure that must be attained in Cartesianism). Fourthly, the unexplained in Cartesianism remains so because its ontology results from mediation (methodological in emphasis rather than epistemological) and yet is not itself susceptible to mediation (as the

onto-epistemological questions cannot even be phrased within a Cartesian framework). Cartesianism makes no attempt to explain, it merely asserts absolute supposition in the existence of God as an answer to onto-epistemological questions. Peirce relates this fourth incapacity to the third incapacity asserting that:

> "... no part of the whole web stands outside the possibility of control by the rest; no part is immune to revision for cause." (Scheffler, 1974, p.55)

The failings in the third incapacity relate to the inability of Descartes to explain. Deductive logic attempts to stand outside the 'possibility of control' by ignoring its (social and onto-epistemological) role within the multitudinal web. Immunity cannot be assumed and this is Peirce's fourth incapacity.

The pragmatism of Peirce is brought up to date " ... with [the] radical pragmatism [of] Rorty." (Clark, 1990, p.155). Rorty can be viewed as a pragmatist in that he is an advocate to " ... a movement which has specialised in debunking dualisms and in dissolving traditional problems created by those dualisms." (Rorty, 1991, p.126). Rorty is radical in that he is an advocate of the persuasiveness of well narrated constructions. This more radical aspect of Rorty's pragmatism is evident in his references to Derrida:

> "He has played all the authority figures, and all the descriptions of himself which these figures might be imag-

ined as giving, off against each other, with the result that the very notion of "authority" loses application in reference to his work." (Rorty, 1989, p.137).

The dissolving of these traditional problems becomes a dissolving of authority when Rorty employs the work of Derrida to continue the pragmatist movement. This method of dissolution is the radical edge to pragmatism and can be seen as a literary critique of dualism. In the radical pragmatism of Rorty, therefore, we can witness a literary anti-dualism, an anti-dualism that will take Descartes as an 'authority figure' that requires the dissolution of his authority, and with his authority dissolved scientific activity can begin to accept the possibility of a plurality of problematic situations (and not just those restricted by dualistic categorisation).

Rorty (1989) seeks to replace the traditional view of science with a more literary approach. The traditional view of science attempts to 'express the real nature of the self', to find a real correspondence between object and subject: in effect a 'correct' representation. This correct representation is considered to be the:

" ... temptation to look for criteria [which] is a species of the more general temptation to think of the world, or the human self, as possessing an intrinsic nature, an essence." (Rorty, 1989, p.6)

Here 'correct' corresponds to the 'intrinsic' or the 'essential'. Representation, in its traditional guise (discussed throughout this chapter and also in chapter nine) is correct when a singular 'intrinsic' nature is found; such a nature is to be found with the unprejudiced Cartesian mind, the core self. The traditionalist core self holds beliefs that are criticisable in that they fail to correspond to reality (in its dualistic guise, where the form of Cartesian critique is dependent upon ontological and epistemological confusions), a reality where beliefs and desires are excluded in order to be integrated at a later date. For Rorty, the traditionalist core self " ... is so natural to us ... and Cartesian skepticism seems to us so much a part of what it is to "think philosophically" ..." (1980, p.46), that a well founded critique becomes imperative. Rorty's critique relates Cartesian dualism to the Hellenic 'invention of the mind'. While Descartes gave precision to 'feeling' as "no other than thinking", Aristotelian dualism of universal-reason and sensational-body becomes dulled:

> "A new mind-body distinction was required - the one which we call that 'between consciousness and what is not consciousness'." (Rorty, 1980, p.51)

This is a distinction not based upon human faculties of the same world, but a distinction in two worlds: extended events and nonextended events. Descartes had shown that reasoned universals were not sufficient for his new definition of mind. Descartes's new definition of mind was a discovery of the "... true essence of consciousness ..." (Rorty, 1980, p.54-55) invoked through the notion of indubitability. In this 'true essence' there is no distinction between appearance and reality, while outside of this 'true essence' world lies the world

of distinction. The world of distinction makes a distinction between the nonextended mind and the extended world. The true essence wishes to reduce 'will and representation' to a singular truth, a real essence and not a fallacious distinction. The true essence would have no need for this eleventh chapter and sees no problem as regards paradigm (in)commensurability. Rorty, however, sees the authority of Descartes as creating this essence and we can now proceed to question this authority.

Having shown how Descarte's dualism distinguishes itself from Hellenic dualism, Rorty begins by questioning Descartes's extension of 'penser' to 'consciousness', where for Descartes the existence of a conscious subject is the existence of a thinking subject. Descartes extends 'penser' to 'consciousness' in order to appeal to "essentialist intuitions". The thinking agent controls clear and distinct perceptions in its capacity as an essentialist intuition. Rorty's contention is that Descartes is only appealing to a linguistic habit, the habit of treating the thinking subject as an essentialist intuition. Rorty's critique of dualism can now be phrased: Is the Cartesian mind, in its appeal to intuition, nothing more than an appeal to linguistic habits? If we consider Descartes's insight into extended and nonextended phenomena, we can translate this into a recognition of a distinction between parts (or states of parts) of persons (extended) and the whole (or states of the whole) person (nonextended). The linguistic habit, however, is a conveying "... corrupted scholastic habit ... " (Rorty, 1980, p.66) that requires a distinction of substance. This distinction of substance worries contemporary dualists who see no worth in 'lumping together' mathematicals and other immaterials (eg. pain, recurring thoughts). The scholastic vocabulary wished to relate the recurring thoughts to some truth (given in the first substance

of God (the other two substances for Descartes being mind and matter)) and the 'naturally available' and most persistent truth was the mathematicals. Descartes, however, gave creditability to the distinction of substance,

> "Since, to be concerned with philosophical matters was to be concerned with that which the eye cannot see [concurrent with Schopenhaurian world as will] nor the ear hear." (Rorty, 1980, p.68)

Consequently, nonextended phenomena became the slave of philosophical desires. Contemporary dualists wish to separate further: nonextended substance into intellectualisation and raw feeling. Intellectualisation refers to events, while raw feeling refers to dispositions. It must be remembered, however, that this contemporary dualism wishes to (unknowingly) maintain an ontological gap between nouns and adjectives, where the nouns become (epistemologically grounded) intellectual events, the adjectives become (epistemologically ungrounded) dispositions. Where Descartes, in his scholastic vocabulary, wishes to attribute truth to feeling, contemporary dualists wish to attribute truth only to events. Rorty would interpret this as two appeals to linguistic habits, and in this sense would seek to replace the traditional view of science along with its contemporary reparations with a more literary approach.

Nietzsche's critique of Cartesian dualism also adopts a literary approach but accords more with the assertion of will to power. Nietzsche (1924) introduces Descartes in a consideration of the will to power in science. Descartes is introduced as one of the 'great methodologists' (p.468) alongside Aristotle, Bacon,

and Comte. The great methodologists are charged with overpowering science by reducing 'science' to 'scientific method'. Descartes's scientific method is one of separation between action and agent (following on from the ontological and epistemological separations considered earlier). The action is a selection of one element from a process and eliminating the rest (the action is called 'Thinking'). The agent is the mind as subjective origin and nothing else (the agent is 'I'). The agent occupies the 'inner world' while the action occupies the 'outer world'. As stated earlier (in the 'Rorty section') Descartes's separation of these two worlds was an attempt to deal with (and by dealing with, to relegate) the Hellenic separation of appearance and reality (a project continued in Schopenhauer's 'worlds'). But:

> "[o]ur inner world is also 'appearance' ... [since] [t]his 'inner world of appearance' is treated with precisely the same forms and procedures as the 'outer' world. We never come across a single 'fact': pleasure and pain are more recently evolved intellectual phenomena..." (Nietzsche, 1924, p.476-477)

Nietzsche is able to explain this separation as a logician's prejudice. The prejudice that " ... thoughts are the cause of thoughts " (1924, p.478). We can consider this prejudice as a linguistically constructed 'circle of causality'. A circle that imagines a cause after the effect reaches consciousness: a condition is only conscious when the supposed causal link has reached consciousness (p.479). The linguistic dependency of the causal link can thus be stated: " 'Inner experience' only enters consciousness when it has found a language which the

individual can understand " (p.479), where 'understand' refers to 'expressing something new in familiar terms'. The linguistic dependency relies upon will to power:

> "There are no such things as 'mind', reason, thought, consciousness, soul, will or truth: they all belong to a fiction, and can serve no purpose. It is not a question of 'subject and object', but a particular species of animal which can prosper only by means of a certain exactness, or, better still, regularity in recording its perceptions ... [in this sense,] knowledge works as an instrument of power ... [where] the measure of the desire for knowledge depends upon the extent to which *will to power* grows in a certain species." (Nietzsche, 1924, p.480, my emphasis)

This quote exemplifies Nietzsche's denial of Cartesian dualism and his assertion of the multiplicity of will to power. The Nietzschean critique denies the 'divinity of knowledge' that Descartes perpetuates and asserts the dominance of language through will to power. 'I think' is portrayed as a 'grammatical custom' which sets an agent to an action and rests on an a priori belief in substance (and its successful separation):

> "What Descartes wanted to prove was, that thought not only had apparent reality, but absolute reality." (1924, p.484)

But the 'thinking subject' is nothing more than a fiction, created in order to give the impression that the multiplicity of similar states are the effect of one causal state. Nietzsche asserts the 'subject as plurality' when accounting for multiplicities of similar states. In this case, the effect of these states are always unconscious, as an inferred and imagined cause always follows the event. The subject as plurality considers truth as will to power, for example, will to master, will to truth, will to classify. The Nietzschean subjects assert that knowledge is only possible when the self is deceived as will to power (1924, p.617).

To offer a summary of this subsection may take this form. Peirce attacks dualism from a realist orientation emphasising social and onto-epistemological limitations. Rorty attacks the authority of dualism and its appeal to linguistic habits. Nietzsche attacks a logician's prejudice and a will to power dependency within dualism. Armed with subsections 11.2.1 and 11.2.2 we are now able to continue our development of subsection 11.1.3 in a further consideration of the dualism of paradigmatic (in)commensurability in subsection 11.2.3.

11.2.3 The dualism of paradigmatic (in)commensurability

Subsection 11.1.3 *The incidence of Dualistic strain* shall now be further developed in this subsection. Having developed a thorough understanding of Cartesian Dualism and a thorough understanding of its limitations, we are now able to develop a clearer relationship between dualism and paradigmatic thinking,

a paradigmatic thinking that is given by Kuhn (1962, 1970a, 1970b) and Burrell and Morgan (1988) (These authors are seen as the most relevant to any paradigmatic discussion within systems thinking, and consequently the most established). Our notion of Dualism that is given by the four distinct stages in 11.1.3 and the ontological, epistemological and methodological stages in 11.2.1 and 11.2.2 . The argument of this subsection is that when this (established) blend of paradigmatic thinking is related to dualism the result is paradigmatic (in)commensurability (remembering that the majority of paradigmatic thinkers advocate paradigmatic incommensurability). To recall, I use the term paradigmatic (in)commensurability in order to show that commensurability is not the issue, rather the thinking behind the separation of commensurability and incommensurability, and it is this 'thinking behind' that necessarily interests us here. Paradigmatic commensurability or paradigmatic incommensurability is therefore not of primary interest to us, what is of primary interest to us is the way in which the author **separates** commensurability from incommensurability. And the contention is that both Kuhn and Burrell and Morgan cannot help but separate in a dualistic strain.

In order to begin to understand this argument we need to indicate what is meant by paradigmatic (in)commensurability. Firstly, Kuhn:

> " Two men who **perceive** the same situation **differently** but nevertheless employ the **same vocabulary** in its discussion must be using words differently. They speak, that is, from what I have called **incommensurable** viewpoints." (1970a, p.200, my emphasis)

For these two men " ... [t]he stimuli that impinge[s] upon them are the same. So is their general neural apparatus, however differently programmed ... even their neural programming must be very nearly the same ..." (Kuhn, 1970a, p.201). So what is the 'cause' of the incommensurable viewpoint? Kuhn's response is 'different language communities'. These two men look at the 'same' thing, with their 'similar' brains, programmed in 'similar ways', but describe the 'same' thing using different languages. For Kuhn, therefore, incommensurability is speaking different languages. Kuhn, in his diachronic analysis, sees incommensurability as a temporary revolutionary period within science. Once these different languages are interchanged and understood a commensurable new science is formed. The difference is 'progressively' lost between the different languages upon 'translation'. Translation, thus, is the movement toward commensurability. Kuhn proposes two types of translation: one where the translator isolates problematical terms, clarifies them using 'everyday vocabularies', and translates them from group (or community) to group (or community); and another where a different language is translated into your own language (thereby causing a *gestalt* switch). In the first case of incommensurability, problematical terms become tempered by everyday vocabularies into commensurable terms, thereby perhaps losing any fecundity that is to be found in its more problematical state (and this cannot merely be allotted to a technicality of translation). In the second case, the enlightenment of adopting an otherwise considered incommensurable language results in a gestalt switch (comparable to a change of faith) that enables the researcher to rise above the problematics of incommensurability.

For Kuhn, therefore, incommensurability is a necessary stage of revolutionary science, and commensurability is the more permanent stage of

normal science (though normal sciences are incommensurable, because each new normal science necessarily passes through an incommensurable stage).

The understanding of (in)commensurability for Burrell and Morgan, however, is very different. Burrell and Morgan's understanding of (in)commensurability is synchronic, as opposed to Kuhn's diachronic understanding (Jackson and Carter, 1991). Burrell and Morgan's synchronicity develops " ... four [paradigms] which are mutually exclusive ..." (Burrell and Morgan, 1988, p.25). Since each of the four paradigms is based upon contradictory notions (of ontology, epistemology, human nature, and methodology (in order to be dependent upon the paradigm)) then to be 'true' to one paradigm means being 'false' to the three other paradigms:

> "We firmly believe that each of the paradigms can only establish itself at the level of organisational analysis if it is *true to itself* ... we argue that the real need is for paradigmatic closure. " (Burrell and Morgan, 1988, p.397-8 my emphasis)

Paradigmatic closure equates with paradigmatic incommensurability. As one becomes 'open' to one paradigm one 'closes' another, as " ... one can operate in different paradigms sequentially over time. " (1988, p.25). For Burrell and Morgan paradigmatic closure allows for intra-paradigmatic growth, because "[r]elations between paradigms are perhaps better described in terms of 'disinterested hostility' rather than 'debate'." (1988, p.36). Burrell and Morgan's notions of paradigmatic (in)commensurability, therefore, can be understood in two distinct ways (both through paradigmatic closure). Firstly, paradigmatic

closure can ensure that true assumptions ("... pure forms ..."(1988, p. 25)) are obeyed. Secondly, paradigmatic closure can ensure that alternative paradigms are not " ... rebuffed or incorporated within the context of the dominant orthodoxy. " (1988, p.396). The first way refers to a 'true understanding' (knowledge orientation), while the second refers to a 'preservation of alternative truths' (power orientation). It is these two orientations that are the basis of Burrell and Morgan's notions of paradigmatic (in)commensurability.

Having introduced Kuhn's and Burrell and Morgan's notions of paradigmatic (in)commensurability, we can now indicate how these notions relate to dualism.

Kuhn equates incommensurability with different language communities. Burrell and Morgan equate incommensurability with knowledge and power orientations. Kuhnian language communities are built upon men sharing similar stimuli, brains, and thinking processes. Burrell and Morgan's orientations are built upon isolated (through a preservation of knowledge against the 'evils' of power) truths. The question needs to be asked: does dualism promote these two established promotions of paradigmatic (in)commensurability?

We find a Kuhnian dualism of mind and body: two worlds: extended and nonextended. The men share the nonextended world of brains and thinking processes; but the men do not share the extended world of stimuli (language). It is this extended world that becomes the world of incommensurability, since it is the language that performs the incommensurable acts. The brains and the thinking processes remain nonextended, remaining commensurable within themselves. The nonextended world is able to isolate the problematical terms (the extended

stimuli) of the extended world and treat them in nonextended (everyday, non-problematical) processes. The existence of different language communities is the existence of extended phenomena. The existence of incommensurability is the existence of different language communities. The existence of incommensurability is the existence of extended phenomena. Extended must, therefore, become unextended in order to avoid paradigm incommensurability, and indeed Kuhn attempts this. Paradigms as shared examples is essential to the combating of paradigm incommensurability. These examples are a " ... sort of learning [which] is not acquired by exclusively verbal means. Rather it comes as one is given words together with concrete examples ... " (Kuhn, 1970a, p.191). This is an attempt to rid 'words'and stimuli from the extended world, as " ... our world is populated in the first instance not by stimuli but by the objects of our sensations ... " (p.193). The objects of our sensations are truly extended phenomena, they are 'objects out there'. Stimuli are more problematical as they cannot be easily identified, where 'objects of our sensations' can be in their prior perceptual dependency upon experience and training (p.198). The 'objects' are reflected in a well-trained perception. In this 'reflection' we can refer to its similarity with 'words and their concrete examples', as in both cases Kuhn is wishing to reduce the complexity of paradigmatic (in)commensurability to a problem of 'correct perception' (reflecting 'correct object') and 'correct words' (reflecting 'correct example'). Paradigmatic incommensurabilty, in its Kuhnian mode, can be seen as 'incorrect usage of extended phenomena':

> " Since the vocabularies in which they discuss such situations consist, however, predominantly of the same terms, they

must be attaching some of those terms to nature differently, and their communication is inevitably only partial." (Kuhn, 1970a, p.198)

The method of attaching words to nature is of the utmost importance for Kuhnian (in)commensurability. To attach differently is to be incommensurable, to attach similarly is to be commensurable. To 'attach', however, is to reduce the extended world to 'objects of nature'. If we are to take the extended world seriously (and there are many reasons to suggest that we should not) then words exist as 'extended phenomena', as words are the means to appropriate nature which cannot exist within our nonextended states (to exist in our non-extended state would be to exist in an intrinsic state). Kuhn, however, wishes to reduce words to nature and in doing so emphasises the dualism of extended and nonextended phenomena. To question this dualism is to question the significance of 'words' within the dualistic scheme. For Kuhn, words are easily reduced to nature because they necessarily arrive from nature, and necessarily they must return to nature. This process is assumed by Kuhn, it emphasises dualism, and it leads to an unavoidable paradigmatic incommensurability in times of 'revolutionary science'. In contrast, the times of 'normal science' are the times when the relationship between words and nature are not brought into question, and there is paradigmatic commensurability.

We find in Burrell and Morgan a dualism of subject and object (explicit in their framework, see page three for example). The orientations of knowledge and power relate to the subjective and objective dimensions. The subjective emphasis reveals relativistic knowledge distinct in its differentiation

of the power of universals. The objective emphasis reveals power as unifying objectivist knowledge. In the knowledge orientation of paradigm incommensurability we witness subjective knowledge; in the power orientation we witness objective power. We must promote the subjective in its 'true understanding' and protect against the objective in the 'reservation of alternative truths'.

The dualism of Burrell and Morgan can be highlighted through Bernstein's (1985) consideration of the Cartesian anxiety. This is an anxiety that restricts scientific knowledge to being either objectivist or relativist. In the knowledge orientation the more relativistic paradigms are highlighted, while the power orientation highlights the more objectivist paradigms. This clear continuation of the Cartesian anxiety is paramount to the establishment of Burrell and Morgan's blend of paradigmatic incommensurability. Relativistic knowledge is protected by paradigmatic closure, while objectivist knowledge attempts to dominate it. The relativism is smuggled alongside the objectivist 'underlying unity' of each paradigm, in that paradigmatic unity is defined through references outside of that unity (Burrell and Morgan, 1988, p.23-24). The unity (created by paradigmatic incommensurability, which in turn is created by paradigmatic closure) becomes an objectivism of relativism, and in this sense is a continuation of the Cartesian anxiety. In the same sense that " ... Kuhn ... exaggerates the internal unity of paradigms." (Giddens, 1976, p.142), Burrell and Morgan exaggerate unity in order to exaggerate the separation of paradigms. This exaggerated unity creates " ... four paradigms [that] are mutually exclusive." (1988, p.25), however, " ... one can operate in different paradigms sequentially over time." (p.25). But how is it possible to move from paradigm to paradigm if they are mutually exclusive? How is it possible to consider a rare-interparadigmatic journey (gestalt switch)

if all alternative paradigmatic debate is necessarily exclusive? Responses must question this exaggerated separation. Paradigms are useful only when they can contain themselves. To question their more general role, outside of their own immediacy, is to 'feign' paradigm commensurability, as the 'general language' is the language of paradigm commensurability, the language that does not privilege content over difference. But how is it that we know when and how a paradigm 'ends' and where it 'begins', since we must know this in order to 'protect'? Not to know its 'boundaries' is to be unable to protect it from 'dominant ideologies'. Also, how do we know when an ideology is being 'dominant' and when it is not? Are we not driven by a more dominant ideology that forces us to recognise the dominance of another ideology? And how are we able to stop ourselves from entering the 'exclusivity' of another paradigm in order to defend its relativistic position? These 'boundaries' between paradigms are defended according to the 'professional interests' of those inside them, and more general 'professional interests' wish to attack 'weak' boundaries. Thereby, it is the interests that define the paradigm, and the interests are given by the 'words employed'. No object need be referred to, and no subject highlighted, as words refer to each other in order to offer sense and guidance. Words see no issue with 'objectivism' and 'relativism' as these are seen as irrelevant to the main issue of understanding the 'Acuity'. Such terms confuse and unnecessarily re-introduce hackneyed linguistic habits: the language of dualism offers nothing except the continuation of paradigmatic incommensurability (as the objective (word) overpowers the subjective (idea) and the nonextended overpowers the extended in its vertical framework, and all of these find themselves paradigms to attack and defend). We need to see this relationship between dualism and paradigmatic

(in)commensurability in order to offer an Acuity that emphasises paradigmatic mediation using a horizontal consideration of the objectivism of 'word' and the relativism of the 'idea'.

11.3 THE IRONY OF PARADIGM (IN)COMMENSURABILITY

This final section will develop from two clear directions in order to show the value of thinking about paradigm (in)commensurability in ironic terms. The first direction is taken from the last section of the chapter of the Architecture of Critical Systems Thinking. The second direction is taken from the last section of this Acuity, the section above. The first direction advocates the possibility for paradigm commensurability. The second direction advocates the possibility for paradigm incommensurability. The first direction becomes the first sub-section in this last section. The second direction becomes the second sub-section in this last section. The value of thinking about paradigm (in)commensurability in ironic terms becomes the third sub-section.

This last section will, therefore, directly relate the intentions of the Architecture to the intentions of the Acuity through a debate concerning will, representation, and dualism, and their influence on paradigm (in)commensurability. The commensurable position of the Architecture is in direct opposition to the incommensurable position of the dualism of paradigm incommensurability (represented here by Kuhn, and Burrell and Morgan). The intention of the Acuity is to witness these two oppositions and to understand the thinking that creates

either paradigm commensurability or paradigm incommensurability. Accordingly the Acuity understands this thinking as irony, and an ironical position is established, taken directly from the previous chapter.

The three sub-sections in this last section are: Irony and the Architecture as commensurability (11.3.1); Irony and Dualism as incommensurability (11.3.2); and the Irony of paradigm (in)commensurability (11.3.3).

11.3.1 Irony and the Architecture as commensurability

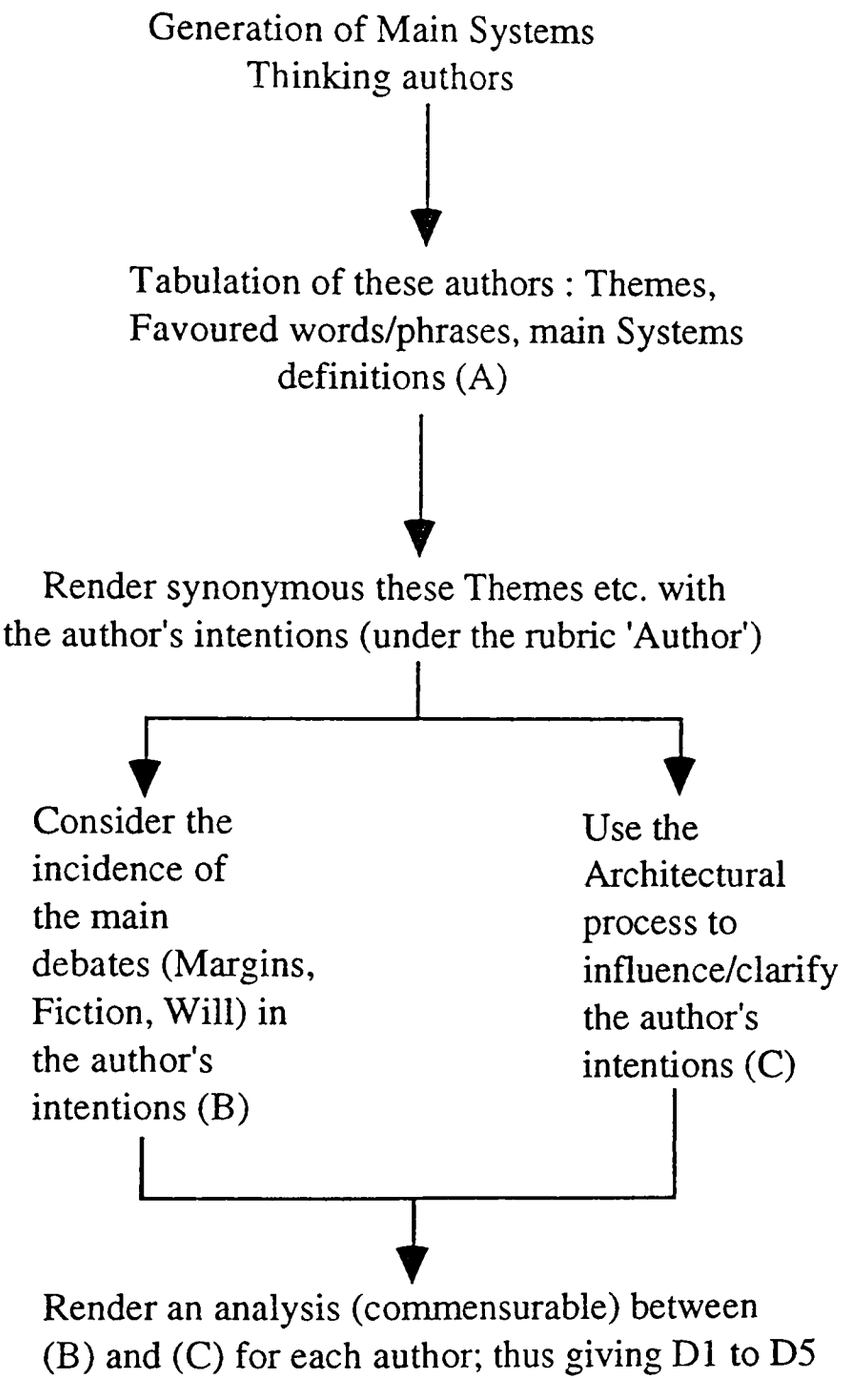
The interest of this sub-section is to relate irony to the Architecture as commensurability. We must refer directly to section 5.4.2 *Architecture as commensurability* in order to clarify this proposed relationship. We will remember that the commensurable position of the Architecture was a gradual process, beginning with the 'generation of main Systems Thinking authors' and ending in the 'commensurable analysis'. We shall work through section 5.4.2 by working through figure 5.4 (calling it Figure 11.1, according to the chapter that we now find ourselves in), as this figure clearly shows the commensurable claims of the Architecture. This will then be related to the ironical position established in chapter ten.

Below is Figure 11.1. We can see that Architectural commensurability is dependent upon diversity. Diversity that first of all generates the authors, where the choice of authors demands that each author must firstly be relevant to the

current concerns of systems thinking (this means able to tackle epistemological questions as well as methodological questions), and secondly that together the authors must represent each of the main relationships existing between participants in current Systems Thinking (the Unitary, Pluralist, and Coercive, for an explanation of this see Jackson, 1987, p.154-158). The choice of authors satisfies these two criteria, and therefore we can proceed to stage (A). This stage attempts to understand each author on their own terms by entering into the spirit of their 'themes', their 'favoured words/phrases', and their 'main systems definitions'. The way in which the authors clarify their own terms then becomes their intentions, and these intentions are manifest in their reference to the 'main debates'(B) and their use of the 'Architectural process'(C). The results of the tabulations of (B) and (C) can be combined to give a tabulation (D) which can then be directly compared to the content of the Architecture (chapter four)(as it shares the same form). This comparison between the fourth and fifth chapters again shows the dependency that commensurability has for diversity, in that commensurability is not possible without diversity (in this case the diversity of the fourth chapter), and this diversity continues when the five authors (Beer, Checkland, Flood, Flood and Jackson, and Jackson) find commensurability across the pluralism-fiction cell. Commensurability arrives as an analogy where the pluralistic nature of each author sees 'fiction as ...'. This analogous position allows for direct comparisons to be made between the five authors, and we find that Beer's quest for viability, Checkland's quest for synthesis, Flood's quest for historical complementarism, Flood and Jackson's quest for methodological complementarism, and Jackson's quest for holism share similar views of fiction

in its relationship with pluralism. In all five scenarios fiction is 'impoverished singularity' and pluralism is 'enriched holism'. This then, is the Architecture as commensurability.

Figure 11.1 The claims of the fifth chapter



What then is the relationship between the Architecture as commensurability and irony? To begin with the notion of irony that relates most clearly to the problematics of (in)commensurability is the notion of 'double irony' where in the lower layer of the double layer there exists an opposition. The lower level has two interpretations: paradigm commensurability and paradigm incommensurability; and it is the upper level that is aware of it. It is the upper level that is able to present situations as if they were commensurable and as if they were incommensurable. On the lower level are those theorists who choose to call for either paradigm incommensurability or paradigm commensurability. The upper level is not a person, the upper level is the irony of paradigm (in)commensurability.

When paradigm commensurability is called for, as it is in the Architecture, it is called for from the lower level, as it is unaware of the irony of paradigm (in)commensurability. To call for commensurability is to ignore (be it temporarily or for longer) incommensurability. Therefore, to call for a realisation of the similarity of notions of 'enriched holism' is to ignore the realisation of the dissimilarity of notions of 'impoverished singularity'. It is always the case that notions of 'singularity' have less in common with each other than notions of 'holism' have in common with each other, as 'holism' is a recognised doctrine (and its institutionalisation is that of Systems Thinking), while 'singularity' is often the particular observations of the author. Holism is the universal to the singularity as particular, and we need not enter into the problematics of self-referentiality to recognise the irony of choosing between either holism or singularity. However, in the Architecture we are presented with 'commensurability as enriched holism' and the singularities are necessarily ignored. The irony

of paradigm (in)commensurability would say that commensurability would seem to privilege the pluralistic drives. An example of this is Holland's (1990) 'correspondence' between the 'credibility of human disciplines' and 'commensurability'. A correspondence that wishes to equate 'credibility' with 'commensurability'.(Another fine example of the privileging of the pluralistic drives can be found in Aldrich (1992). Aldrich's 'core metaphor' is the means to be commensurable: "At its heart, each perspective contains a core metaphor ..." (p.17). The implication is that if we can discover the 'core metaphor' then we are able to 'be commensurable'. In this case the 'core metaphor' is the universal to the particularity of 'each perspective'. The Architecture itself is the 'metaphorical core' (though to be more precise we should suggest that the metaphorical core in its 'reasonable' relationship with meaning, the meaning of other approaches, which is a 'dead' metaphor, see section 9.1 for an explanation), the means to compare (as well as the desire)). The irony is seen from the upper layer as 'the cloud of Holland' where in an Aristophanic sense Holland's seeking of the objective (the means to be commensurable, to be credible, to be real) is nothing more than his own likeness (or his likeness for commensurability, credibility, reality). Holland's 'objective' is his 'own likeness', and the irony of 'holism' and 'singularity' also becomes part of this 'Aristophanic cloud' (where 'holism' relates to 'objectivity', and 'singularity' relates to 'own likeness'). The 'cloud of the Architecture' is, therefore, the desire to see the object, the 'enriched holism as commensurability', but the realisation that the cloud which is seen is only the likeness of the singularities of the five Systems Thinkers (Beer, Checkland, Flood, Flood and Jackson, and Jackson).

At this stage the 'Architecture as commensurability' is forced to recognise the 'irony of paradigm (in)commensurability' exemplified (metaphorically) by the 'cloud of the Architecture'. This recognition is the relationship between irony and the Architecture as commensurability. We will now continue our investigation into the irony of paradigm (in)commensurability by relating it to Dualism as incommensurability.

11.3.2. Irony and Dualism as incommensurability

When we consider the relationship between irony and Dualism as paradigm incommensurability we become interested in the act that creates the condition that requires the theorist to call for paradigm incommensurability. This is why irony is a step *before* this calling process, and this is why we say the irony of paradigm (in)commensurability.

Dualism as paradigm incommensurability has been studied in sub-section 11.2.3. Here we realised that the paradigmatic incommensurability of Kuhn and Burrell and Morgan is reliant upon a strain of dualism. This dualism forces the authors to call for paradigm incommensurability. Let us quickly reiterate dualism as incommensurability as it relates to Kuhn and Burrell and Morgan.

Kuhn considers the cause of paradigmatic incommensurability to be 'different language communities'. He separates out his worlds into worlds of

commensurability and worlds of incommensurability. The world of commensurability is the world of similar general neural apparatuses (the brains of scientists). The world of incommensurability is the world of dissimilar language communities. The world of commensurability is the nonextended world. The world of incommensurability is the extended world. To reduce the impact of the incommensurable upon the commensurable we must use 'correct words' that reflect a 'correct object'. In effect we must reduce the extended to the nonextended, we must reduce 'words' (in the different language communities) to 'nature' .

Burrell and Morgan prescribe 'paradigmatic closure' as the means to preserve the true assumptions of each paradigm (knowledge orientation) and to protect the existence of alternative paradigms (power orientation). These two orientations exaggerate the disunity between paradigms in order to exaggerate the unity of each paradigm, thus preserving the identity of each paradigm as a closed entity, and preserving the interests of those inside the paradigm.

For Kuhn it is his relationship between 'words' (extended world) and 'nature' (nonextended world) that is the focus for irony. The form of irony that appears most relevant to this case is dramatic irony. Dramatic irony is a presentation of irony which is in tune with the public (here the public of systems thinkers) to whom which you present it to. Dramatic irony presents incompatibilities within a total situation showing how the 'victim' is unaware of the incompatibilities (Mueke, 1969, p.94). The incompatibility is Kuhn's proposed relationship between the 'word' and the 'thing'. The total situation is the ironical thinking that looks before the separation of the paradigms into being

either commensurable or incommensurable. And the victim is Kuhn. Kuhn proposes to reduce the extended world of 'words' to the nonextended world of 'nature'. As we have shown in chapter ten, the connection between words and nature is dictated by the 'definitions' of words, and these definitions are the property of language (or more precisely of grammar). We are unable to think of the connection between words and nature without the sense given to them by language. This implies that Kuhn's extended world dictates his nonextended world, and as Kuhn wishes to reduce the extended to the nonextended the irony of this is clear.

The irony of Burrell and Morgan's dualism as incommensurability focuses upon their posited unity of paradigms and disunity between paradigms (because of paradigmatic closure). This professed unity of the paradigms becomes a victim of irony in the Socratic sense. The dialectical activity that governs the movement between the idea and the actuality (see section 9.2.1 for further clarification of Socratic irony) can help to explain the Socratic sense of this irony. Socrates is interested in the boundary of the dialectic, a boundary which forces the dialectician from the idea to the actuality: as she reaches the idea she is forced back into actuality, an actuality that wishes to go beyond actuality but is always unable to, and she continually returns to her own subjectivity, to her own satisfaction. Being aware of this dialectical boundary and the inevitable return to subjectivity is the ironical position (Kierkegaard, 1992, p.154-155). The professed unity of the paradigms is nothing more than a desired actuality for that particular paradigm, an actuality that cannot be obtained, an actuality that is in continual rebound from the idea, an actuality that returns to the subjectivity of the paradigmatic thinker. When Burrell and Morgan wish to

defend the alternative content of alternative paradigms they find that the notion of content (actuality) is nothing more than a desire to escape the negative dialectic (at the boundary of the dialectical activity) and simultaneously a desire to go beyond the content (to the idea). To recognise this in the dualism as paradigm incommensurability of Burrell and Morgan is to recognise an ironical position, and thereby to relate irony and dualism as paradigm incommensurability. Next we must show the value of thinking about paradigm (in)commensurability in ironical terms.

11.3.3. The Irony of paradigm (in)commensurability

Having related irony to Architecture as commensurability and Dualism as incommensurability we arrive at the irony of paradigm (in)commensurability. The irony of the two previous sub-sections has allowed us to uncover some of the thinking behind the reasons for the commensurable and incommensurable positions. Having shown these reasons we are left in an ironical position, a position that forces us to clarify what it is to be ironical with regard to the problematic of paradigm (in)commensurability.

We have shown throughout this second stage the manner in which language constitutes the human agent. This sub-section is no exception, and we shall continue to emphasise the inevitability of language, in this case with particular reference to the problematic of paradigm (in)commensurability. Language

is the contingency that dictates work within paradigms, it also dictates work between paradigms, and in particular it dictates the meaning of the words 'commensurable' and 'incommensurable'.

We do not possess the ability to characterise the commensurability of a paradigm with regard to another paradigm because we do not possess the ability to know the character in the first place. If we cannot know the character how can we possibly stake a claim of commensurability or incommensurability. We cannot know, more precisely, the 'absolute character', instead we know what is represented to and by us within language. Necessarily our notions of (in)commensurability are to be found within language. To begin to study irony is to begin to admit that it is only within language that we can begin to understand that words are only a constant recognition of the inability to identify. Language is the constancy which we lack and to ignore this is to be a constant victim of irony. It is irony that informs the creators of language that we need to create the conditions for constancy because we lack such conditions and it is again irony that forces the users of language to use language as if it were a constancy. Both examples of irony reiterate the inability to know the 'absolute character' of anything, as we can only know through conditions that we can only know once those conditions have passed. There is, however, a response to this, and it is this response that will inform the irony of paradigm (in)commensurability.

If we cannot dissolve the doubt that what we are representing is the constant recognition of the inability to identify then we must re-appropriate vocabularies that express this doubt in a more contingent way, we must create vocabularies. Such creations accommodate within the openness of the text. The

finality, severity, and isolated nature of vocabulary becomes ridiculed through a literary simulated ignorance. The Socratic ironist plays the understater; 'please explain to me your finality', thereby attacking the finality of discourse that is decisive paradigm commensurability or incommensurability. This ironic understatement in attacking the finality of discourse in effect overthrows a 'strong' position for a 'weak' position. The ironist brings in the opposite in order to complement through critique: if the 'strong' position (the decisive commensurability or incommensurability) is so strong then it should be able to devour the 'weak' reference to the complexities and contradictions of experience (Barnet *et al*, 1964). The 'weak' reference is the constant reference to language. We are unable to step outside of language, to critique languages, to appeal to words which only had meaning in an age that divorced language from reality and made language the exact reflector of knowledge (words such as 'correct', 'true', 'pure'), but we are able to create language. And here we continue from our understanding of ironical self-creation (as given in the previous chapter), where we recognise that it is in the act of creation that we can re-appropriate our vocabularies. If we are to create language then we must accept that what it is that we are creating is a response to the contingencies that are facing us and not a response to the conditions that condition posthumously (from an archaic traditional that has no contemporary meaning). And when we respond to these contingencies we create a difference from what existed before the creation. And when we create we no longer become interested in (in)commensurability because we are interested in difference. More importantly, the interest in paradigm (in)commensurability becomes an interest in the 'forces that create an unavoidable conclusion of either commensurability or incommensurability', forces that are explained in the subsections 11.3.1 and 11.3.2. In recognising these forces we recognise that it is

only *difference* (and here the reader can refer to chapters eight and nine in order to understand the complexities of this apparently simple world) that separates one idea from another idea. Difference of intentions, of attitude, of competence, of will:

> "Man ultimately finds nothing more in things than he himself has laid in them - this process of finding again is science, the actual process of laying a meaning in things is art, religion, love, pride." (Nietzsche, 1924, p.103)

This eternal recurrence is the recurrence of the will to representation. It is an ironical occurrence because the will recurs as the conceivability of itself:

> "Will to the conceivability of all being: that is what *I* call your will !"
> (Hollingdale, 1983, p.224).

The unacceptance of inconceivability leads us to conceivability, but we are eternally caught within that will, that negative dialectic. We ironically impose ourselves upon the situation, we affirm again and again until we receive affirmations. We have then created our own difference, our own selves, our own measures. (In)commensurability is the (in)commensurability of itself, an ironical self created and fashioned by the desire to be (in)commensurable, a self that has all the measures of itself to make itself commensurable or incommensurable. The recurrence of the will to representation is the ironical recurrence of the desire for (in)commensurability to (in)commensurability: the Architectural 'core

metaphor' being commensurable with itself, the Kuhnian extended incommensurability being incommensurable with itself, and the Burrell and Morganian incommensurable disunity being incommensurable with itself.

The will of the authors returns ironically to representation through the (unaccepted) act of self-creation, and this is the irony of paradigm (in)commensurability. The relationship between the three stages of this chapter is the gradual recognition of this irony. And the intention behind this second chapter has been to shape this irony according to a debate that challenges the credibility of diversity within Systems Thinking. This sub-section must finish, therefore, in claiming that diversity can only exist with irony.

CONCLUSION

This eleventh chapter represents the importance of the Acuity for the development of Systems Thinking. The Acuity extends from chapter eight to this chapter and we are using all the ideas given in these chapters as a means to develop a major problematic in Systems Thinking. That major problematic is paradigm (in)commensurability.

This chapter began in introducing the notions of *will* and *representation* to the debate concerning paradigmatic (in)commensurability (subsection 11.1.1). The notions of will and representation are best introduced through the works of Schopenhauer and Nietzsche. Schopenhauer sees the 'world as will' as the

immediacy of the acting self, and the 'world as representation' as the mediated self-knowledge. Nietzsche sees Schopenhauer as reducing will to 'restraint', accordingly he introduces Apollonian illusion and Dionysian immediation as comparable with world as will (Dionysus) and world as representation, and where Schopenhauer restrains the will in order to show the supremacy of representation, Nietzsche sees Dionysus as controlling Apollo. Nietzsche's reality is real through its inescapability and not because of its correspondence with an interpretation free existence. To qualify this assertion of reality a questioning of Schopenhauer's objectivity is given.

These notions of will and representation are then related to the work of two leading paradigmatic thinkers (subsection 11.1.2), Kuhn and Burrell and Morgan. Four interpretations of will and representation are tabulated: Schopenhauer, Nietzsche, Kuhn, and Burrell and Morgan. As we have already realised the interpretations of the first two we need to show the last two. Kuhnian 'will' is tacit knowledge, natural stimulus, and the neural apparatus of the scientist, while Kuhnian 'representation' is scientific practice (the expressive language of the tacit knowledge), the resultant sensation of the natural stimulus, and the scientific community in general. Burrell and Morganian 'will' is ontological nature and human nature, while Burrell and Morganian 'representation' is epistemological nature and methodological nature.

These notions of will and representation then allow us to understand the incidence of any dualistic strain that may be operational in the works of the theorists considered. Subsection 11.1.3 exists to relate will, representation, and paradigmatic thinking to dualism. The blend of dualism that interests us here is

Cartesian dualism. The dualism that creates a distance between the 'mind' and the 'body' such that it is the mind's 'I' that perceives materialism through its distinct lack of materialism. Dualism allows the will of the mind to separate itself from its body, and to represent itself as a subject upon which objects become totally reliant. We uncover four distinct stages to these acts of separation in Descartes's *Discourse on Method.* These four stages show their immediate appeal to any scientist in that they begin with total doubt and end in total truth (where doubt is found in the extended world and truth in the nonextended world). These four stages are then related to the four interpretants of will and representation. Schopenhauer's blind body as will is represented by his seeing mind. Nietzsche's will sees nothing but plurality, no 'thing-in-itself', therefore all Cartesian notions of indubitability are lost. Kuhn's will as natural stimulus relates to the Cartesian indubitable 'I'. Burrell and Morgan's categorical extremes preserve the epistemological separation of subject from object.

The whole of the next section (11.2) develops from the intentions of subsection 11.1.3 in its efforts to relate dualism to paradigmatic (in)commensurability via will and representation. We begin by recognising the scientific dependency upon dualism (11.2.1). We show that scientific dependency is the state of being unable to epistemologically question an ontology. Scientific practice that carries this unquestioned ontology inevitably leads to a theory of knowledge that cannot help but be based upon subjective representation and objective cognition. It treats all 'matter' as passive to the thinking 'I'.

In order to halt scientific practice from being lead into such an epistemological cul-de-sac we need to propose alternatives. These alternatives

come in three forms, each representing an anti-dualism of scientific activity (11.2.2). They are given by Peirce, Rorty, and Nietzsche. Peirce offers a precise critique of the 'spirit of Cartesianism' which follows on from the critique offered in subsection 11.1.3. Rorty seeks to replace the traditional Cartesian view of science with a more literary approach by emphasising the importance of language (an anti-dualism that figures prominently in the irony of paradigm (in)commensurability). Nietzsche believes that we should discard the notion of a substantive Cartesian *cogito* in favour of a more realistic *will to power*. Each of these three forms represents an attack upon the epistemological and ontological foundations of Cartesianism.

Subsection 11.2.2 can be seen in direct opposition to the existence of dualism in paradigmatic (in)commensurability, direct as it is directed to uncover such existence in subsection 11.2.3. This subsection's purpose is to clarify the relationship between dualism and paradigmatic thinking. Its contention is that dualism dictates the separation of paradigmatic thinking into being either commensurable or incommensurable. Continuing to use the two main paradigmatic thinkers (Kuhn and Burrell and Morgan) we evidence their 'dualistic strain'. Kuhn posits two worlds, which develop from his interpretations of will and representation, and they are: the nonextended world of shared and similar stimuli and thinking processes; and the extended world of language. The nonextended world is the 'natural' world, and the extended world is the 'word' world. This is Kuhnian paradigm commensurability is the reduction of the 'word' world to the 'natural' world (thus representing 'normal science'). As this is blatantly impossible (following the arguments of the Acuity) then paradigm incommensurability is inevitable. Kuhnian dualism leading to paradigm incommensur-

ability. Burrell and Morgan posit two epistemological categories: subject and object. The subjective prefers relativistic knowledge which leads to the 'knowledge orientation' of their paradigm incommensurability. The objective prefers absolutist powers which leads to the 'power orientation' of their paradigm incommensurability. Both orientations and their implied paradigmatic incommensurability are inevitable following the existence of their dualistic strain.

The irony of paradigm (in)commensurability (11.3) develops from the Architecture as commensurability (chapter five, section 5.4.2) and the dualism as incommensurability (11.2.3). This last section, therefore, relates the intentions of the Architecture directly to the intentions of the Acuity, where the intentions of the Architecture are geared toward commensurability, and the intentions of the Acuity are geared toward finding the details that lead to such Architectural intentions.

Subsection 11.3.1 relates irony to the Architecture as commensurability. The double irony involved in being forced to see both paradigm commensurability and paradigm incommensurability at the lower level is what the Architecture is forced to see. The Acuity, at the upper level, is able to see this being forced upon the Architecture, and here lies an interpretation of the irony of paradigm (in)commensurabiltiy in its relationship to the Architecture as commensurability. In this relationship the Architecture is presented as an example of a 'metaphorical core' which again emphasises the existence of a double irony.

Subsection 11.3.2 relates irony to dualism as incommensurability. Kuhn's extended world of words and nonextended world of nature is caught in

a dramatic irony. A dramatic irony where the incompatibility of 'word' with 'nature' makes Kuhn a victim of irony to the audience of Systems Thinkers. This irony becomes more potent when we realise that the extended world in fact dictates the nonextended world, which lies in opposition to Kuhnian intentions. Burrell and Morgan are similarly arrested by irony: they are caught in the Socratic irony of dialectical activity.

Subsection 11.3.3 expands upon our understanding of the irony of paradigm (in)commensurability in stating that language is the contingency that dictates, in particular, the meanings of 'paradigm commensurability' and 'paradigm incommensurability'. Because of this dictation the paradigmatic thinker is unable to know the 'absolute character' of any paradigm, therefore, she cannot call any paradigm (in)commensurable with any other. To study irony is to admit to this dictation, to admit that it is only within language that one is able to recognise that words are a recognition of the inability to identify the 'absolute character'. As doubts proliferate concerning the nature and validity of such an absolute character we must admit that we cannot dissolve such doubts, instead we must re-appropriate our vocabularies (our paradigms) in the act of self-creation. To self-create is to respond to the contingencies of language, where we create a difference (see chapters eight and nine), therefore no longer being interested in paradigm (in)commensurability, and recognising that the (in)commensurability debate becomes nothing more than a continuation of traditional polemics. To recognise its irony is to recognise its irrelevance to the contingencies of language.

Overall this eleventh chapter has offered a possible development of the paradigm (in)commensurability debate, a development that recognises the finitude of such a debate.

CHAPTER TWELVE: THE VALUE OF STAGE TWO: THE ACUITY OF CST

This short chapter will elucidate the value of stage two in considering its ability to question the first stage's critical construction. The first stage's critical construction is dependent upon the upholding of the logic of structural consistency. Therefore, we will re-consider this logic, and gauge the value of this second stage as a critical appreciation of its constructive worth.

The logic of structural consistency is firstly enunciated in chapter two. It comes from one of two definitions from the first chapter's study on possible interpretations of *Architecture*. The definition of Architecture as structural longevity develops from the 'everyday' definition. It relates to notions of visibility and repeatability, and it is through a relationship with these two notions that we must seek to re-introduce the logic of structural consistency as it develops from structural longevity. We employ the following phrase from chapter five which relates visibility, repeatability and longevity together: visibility in its repeatability becomes longevity. In terms of the Architecture, visibility is found in the many tabulations that develop from the combination of the two structural sides represented in the second chapter. We can see the Architecture in these tabulations, the purpose of these tabulations is to make the Architecture visible. In making the Architecture visible we make it visible in order to make it repeatable, in that visibility offers a position of clarity that makes repetition accessible. If we repeat that which has been made visible we increase (up to a

point of visible meaninglessness) its visibility. Longevity is provided for as soon as visibility reaches the state of meaninglessness. Architectural stability is assured as soon as that which has been made visible is repeated to such an extent that the extent of repetition becomes exhausted. This point of exhaustion, this point of Architectural stability, is structural longevity. A structure will last assuming that its meaning can be lost within its environment. Structural longevity, therefore, is a requirement for meaninglessness. If a structure has a meaning which is to some extent 'at odds' with the other structures which provide its environment, then this structure is said to have some meaning, some difference of meaning with respect to these other structures. However, if this meaning is maintained, if this difference is maintained, then structural longevity threatened. The Architecture does not recognise this threat. The Architecture merely wishes to appeal to structural longevity through the preservation of form. Structural longevity becomes structural consistency when it becomes consistent with its environment, that is to say it is enabled to lose its meaning through its environmental forms. Structural consistency forces two structural sides (tables 2.1 and 2.3) to become one Architecture (table 2.4), where the environment (table 2.3 as the environment for table 2.1, and table 2.1 as the environment for table 2.3) becomes consistent with the structure (to form table 2.4). The logic of structural consistency, in this form, becomes predominant throughout the first stage. The environment of the language of process becomes the next target, where the Architecture, through the logic of structural consistency, dictates a process consistent with the construction of the second chapter. In the fourth chapter the environment becomes theoretical content, where the logic dictates the manner in which, the form in which, the meaning of such a complexity of theories is to be formalised within the Architecture. And in the fifth chapter the environment

becomes Systems Thinkers, and here the logic persuades the reader that the chosen Systems Thinkers must be thought of through the constraints imposed by the ArCST. In every chapter in the first stage we can evidence the influence of the logic of structural consistency. We can show how it is steadily built-up, and then steadily applied throughout the first stage. We are now in a position to gauge the overall value of this second stage as it relates to the critical appreciation of this logic of structural consistency.

We necessarily begin with a re-tracing of the whole intentions of the first stage. The intentions fall into four distinct stages which can be re-traced and represented thus: an extraction of the content of the Architecture (of chapter four); a loss of connection between the two structural sides (of chapter two, and clear consequences for chapter three); a loss of connection between the main debates (of chapter two again, and again with clear consequences for chapter three); and finally the realisation of two de-constructed clouds (of the whole first stage). These four distinct stages are the processes that guide the Acuity, and we find that at each stage the logic of structural consistency is being considered. To extract content is to disallow the predominance of the logic of structural consistency, since the contented Architecture represents a sophistication of this logic in its formalisation of theories within the Architectural boundaries. To lose connection between the two structural sides is perhaps the most direct disallowance emanating from the Acuity, as the two structural sides, when combined, extend structural consistency from the epistemological levels and main debates to the whole Architecture, and it is at this point that structural consistency most clearly represents its relationship with structural longevity, visibility, and repeatability. Therefore, to disallow this connection is to question the complexity

of relationships that pervade through these four architectural terms (structural consistency, structural longevity, visibility, and repeatability). The realisation of two de-constructed clouds comes as a direct critique of the Architecture in all its forms (Structured (chapter two), Processed (chapter three), Contented (chapter four), and Applied (chapter five)). Two clouds, two desires: a desire to construct, and a desire to compare. This de-constructed cloud (not a strict form at all) therefore questions the logic of structural consistency in two ways. Firstly, in that the logic has a desire to construct: what is this desire, has it a critical worth? Secondly, in that comparisons are comparisons of constructions, and that structural consistency requires comparisons in order to enhance the consistency of that which is constructed: what is this desire, has it a critical worth ? Here the de-constructed cloud directly attacks one of the main claims of the Architecture in questioning the status of the Architecture as commensurability. The clouds show the reader that commensurability is highly dependent upon structural consistency, therefore to question this logic is to question the status of commensurability. Commensurability requires consistent constructions, and itself attempts to increase consistency by organising different meanings under a general and structurally consistent meaning. Commensurability is thus not only dependent upon structural consistency for its basis, but actually attempts to increase structural consistency by reducing difference. The de-constructed clouds are the initiating means to question the logic of structural consistency and its implications of commensurability. The clouds are the fourth stage of the re-tracing of the intentions of the ArCST, and accurately show the intentions in a twin desire. This twin desire has shaped the Acuity, and it is through this that we need to continue our appreciation of the overall value of the second stage.

The more theoretical de-construction of the ArCST takes issue with the uncritical acceptance of two 'presences' within Dialectical-Forms. The two presences are oppositional thinking and intelligibility. They are presences because to oppose is to oppose a presence. To oppose, therefore, is to recognise presence in that which you oppose, and to recognise presence in this manner is to recognise presence uncritically. To be intelligible is to assume a presence with that which needs to be made intelligible. To be intelligible, therefore, is to uncritically assume presence. The Dialectical-Form is at the foundation of the potentialities of the ArCST (in a very similar position to that of the architectural predominance of the logic of structural consistency), and the Dialectical-Form uncritically accepts these two presences. To be uncritical in the acceptance of these two presences is to confuse the Dialectical-Form as being a truth when it is only a method. Truth cannot be possessed in a method as the Dialectical-Forms suggest. Instead, truth belongs to a space anterior to the metaphysics of presence. To seek truth through de-construction, therefore, is to seek anterior to the metaphysics of presence, to seek anterior to the ArCST. But what is anterior to the ArCST? A response to this is given in the Acuity of CST. A response that could be stated thus. The Acuity can only ever be seen against the construction that is the Architecture. The Acuity requires the Architecture in order to emphasise difference where the Architecture emphasises constructed homogeneity. The Architecture wishes to possess reality in a method that obeys the logic of structural consistency, a method that purports to 'find out the truth', 'the essence', when in fact the Acuity disallows such arrogance. The Acuity, in its quest to arrest and critique (though not 'critique' in the sense of 'simple comparison with enlightened dogma') the Architecture discovers that 'what is not really there is what counts'. And what is not really there, in the Architecture, is

an awareness of its own logical contradictions, the most notable logical contradiction being that the logic of structural consistency requires conceptual homogeneity. Conceptual homogeneity is a logical contradiction because concepts are interdependent, and connections between concepts (for example the connection between the two structural sides) are motivated by this interdependency. However, once these connections are formalised (in the sense of the ArCST in table 2.4) then all sense of conceptual interdependency is lost at the expense of conceptual homogeneity (the form of the Architecture which is conceptual homogeneity replaces the meaning that existed which is conceptual interdependency). What is not in the Architecture is this awareness of the logical contradiction of conceptual homogeneity: 'what is not really there is what counts'. To be aware of logical contradictions is to practice the Acuity, to be aware that 'what is not really there is what counts'. The two clouds in figure 8.6 represent this, in that the two clouds represent 'what is not really there', the two clouds search for 'what is not really there', the two clouds search for the invisible knowing that it is more visible than the visible because in our effort to generate sight (and we could replace this with 'form' or 'architecture' or 'method') we see nothing. But in our effort to search for the invisible, for 'what is not really there', we find something that we can count upon, a difference between generated forms. This difference is a de-constructed difference, a difference that has no readable self-identity. Instead, it has a discontinuity in being the unthought which produces thought. The value of stage two lies in this discontinuity, in this productivity that produces, this unthought that produces thought. This discontinuity is the process that proceeds to structure, to structure, however, in a manner of the Acuity, and not in an architectural manner. We need now to consider the value of such Structures of Acuity.

The Structure of the Acuity develops from the twin clouds of 'desire to construct' and 'desire to compare'. These two clouds propose an opportunity to develop a structure that does not neutralise meaning. The Acuity shows us that the Architecture neutralises meaning in its over-dependence on formalisations, where form dictates meaning. In order not to neutralise meaning we need to consider the acute significance of three words: Interpretation, Representation, and Meaning. To realise the acute significance of these three words is to begin to witness the worth of a structure that maintains and does not neutralise meaning. This exercise allows us to offer a Structure which is able to represent (using the cube-based pyramids in figure 9.2) interpretations (in the sentence form "is") of the many meanings deriving from the word "is". This Structure maintains meaning because each meaning from the cube-base pyramid is maintained at the Acuity, at the 'pin-point' of the pyramid. The movement from the cube-base to the pyramidical 'pin-point' is the movement from the Architecture to the Acuity, again showing the requirement that the Acuity has for the Architecture in establishing difference. The cube-base represents the conceptual homogeneity of the existence of "is", and the 'pin-points' represent the difference that operates once the "is" is placed within a sentential structure. At each 'pin-point' a sentence disallows conceptual homogeneity, and maintains conceptual interdependency through maintaining an interdependency between the architectural existence of "is" (in that we must admit the existence of the ArCST, and structures similar to it in intention) and the Acuity of the specific sentence that "is" operates within. This structure, therefore, can be seen as a representation of the level of interdependency that exists between the Acuity and the Architecture, a structure that draws out the meaning of the Architecture for the benefit of the Acuist; a

structure, therefore, that maintains meaning by disallowing its form to neutralise meaning. If such a structure has benefits, then we should attempt to content it in some manner.

We attempt to content the Acuity in associating the Basic structure of the Acuity to linguistic processes. Linguistic processes are relevant because throughout this second stage process dictates structure (even the Structure of the Acuity is a process attempting to offer meaning to a Structure that is lacking processural consideration), and this process is our involvement within language. This is an involvement that enables the Acuist to show the word 'content' as both noun and verb: the noun shown as structure, and the verb shown as process, and as process dictates structure in this second stage, then verb dictates noun. Accordingly, we need to see how the noun 'content' is constituted by the verb 'content' (in its present tense in the third person). We discover that it is constituted by movements within grammar which are called tropes. We then associate the Basic Structure of the Acuity to two tropes in particular (in figures 10.1 and 10.2): metaphor and irony. The choice of these two tropes is based upon them being the most relevant and most prevalent within Systems Thinking (metaphor has been studied since the publication of Morgan (1986), and irony offers a realistic abstract opposition to Dialectical-Forms). We then attempt to content the Acuity, but realise that a trope is unable to content anything except the frustration of recognising continual linguistic movements. Unable to content the Acuity we search for reasons why. Using metaphor we discover a philosophical down-grading of metaphor together with a philosophical requirement for metaphor. These are the reasons why the Structure cannot be contented, as it realises (through an understanding of the Architectural treatment of metaphor) that the

state of contentment always neglects the active content searching for lack of contentment (the active content is the metaphorical play within language, and the lack of contentment is the Acuity of CST, and in this way the metaphor is taken seriously by the Acuity precisely because it professes to not be in a state of contentment). Using irony we offer an 'Ironology' as an introduction to the potential for ironical studies in Systems Thinking, follow this with an overt Socratic contextual study of Irony, and end with irony's relationship to self-creation and humour. Armed with this basic knowledge of irony and metaphor, and the basic knowledge that the Acuity cannot be contented, we seek to apply these ideas to a problematic that is causing much interest in Contemporary Systems Thinking: the problematic of Paradigm (in)commensurability.

The overall value of the second stage could not have finished without an application of the Acuity of CST, in effect the previous three chapters (eight to ten). We can now introduce the reader to chapter eleven which applies the theoretical developments made in the three previous chapters, an application that centres on the problematic of paradigm (in)commensurability. Paradigm (in)commensurability has two possible outcomes: paradigm commensurability and paradigm incommensurability. These two outcomes are the structural outcomes to the processural problematic of paradigm (in)commensurability. Paradigm (in)commensurability is interested in the process that results in the structure which calls for either paradigm commensurability or paradigm incommensurability. To understand this process we need to study the will and the representation of paradigmatic thinkers, and in doing this we realise a dualistic strain. Such a strain must be studied in some detail in order to relate it to paradigmatic thinking. This is a study that includes the scientific dependency upon

dualism and a necessary counter-active anti-dualism of scientific activity. The dualistic strain then surfaces in the paradigmatic thinking of Kuhn and Burrell and Morgan (resulting in the unavoidability of paradigm incommensurability). To finish this application of the Acuity of CST we apply chapter ten's study of irony to paradigmatic thinking. This application requires two structured decisions of paradigmatic commensurability and paradigmatic incommensurability. The former can be found in the last section of the first stage (the Architecture of commensurability, this thereby continues the Acuity's critical appreciation of the ArCST), and the latter can be found in the paradigmatic thinking of Kuhn and Burrell and Morgan. Each of the structured decisions fails to consider the irony of paradigm (in)commensurability. So what is the irony of paradigm (in)commensurability? It is the process of the Acuity operating upon the structured decisions that stand for closed systems. It is also a consideration of paradigm (in)commensurability as a linguistically dictated contingency. In order to re-appropriate our vocabularies which discuss paradigm (in)commensurability we need to respond to this linguistically dictated contingency and create our own vocabularies. This application of the Acuity, therefore, has shown the process of paradigm (in)commensurability and offered an ironical way in which we can discuss it in the continual hope of re-appropriating our vocabularies.

The overall value of this second stage has been to question the Architectural construction: to be critical of construction. The questioning is the process to the Architecture as structure. The questioning begins with a look at the logic of structural consistency. Relationships with visibility, repeatability, and longevity are highlighted and the inevitable loss of meaning is discussed. A re-tracing of the intentions of the Architecture follows. This evidences four stages. The fourth

stage culminates in two clouds which help to relate construction (of the Architecture) to comparison (using the Architecture). These two clouds consequently question the implications of commensurability (using the Architecture) as they depend upon the logic of structural consistency (of the Architecture). A more theoretical discussion of the Architecture follows when the two presences in the Dialectical-Forms are critically assessed. This then leads to the assertion that the Acuity is the discontinuity of the unthought which produces thought, a discontinuity that highlights the unthought of that which has been thought (in this case the foundation of the ArCST, the Dialectical-Forms). The Structure of the Acuity draws out the meaning of the Architecture with a realisation of the interdependency between the Architecture and the Acuity. This structure is shown to be contentless in the face of the tropes metaphor and irony because the Acuity is able to respond to the contingency of language. This contentless Structure was then applied to the problematic of paradigm (in)commensurability in the eleventh chapter. An ironical processural study is offered along with a way in which we can re-appropriate our vocabularies.

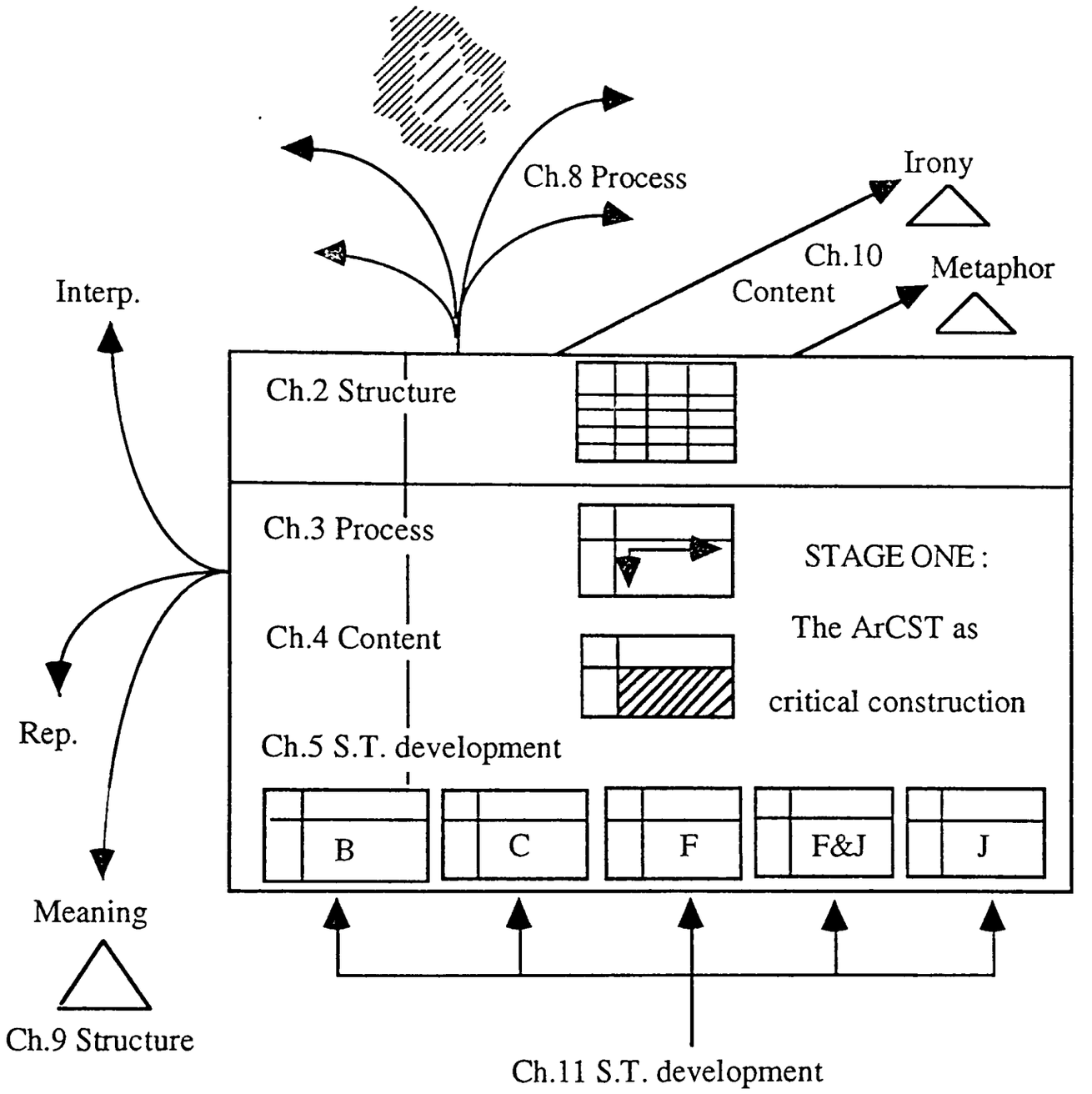
Overall this second stage has offered a critical consideration of the critical construction that is the ArCST. It is the process looking into the Structure. The complexities of such a consideration have responded to the contingencies of language, and in doing this have realised the irony of construction, as exemplified by the Architecture of Critical Systems Thinking.

CONCLUSION

This conclusion necessarily must be read with chapters six and twelve. This complementary style of reading allows for this conclusion of the Architecture and Acuity of Critical Systems Thinking to be brief. We introduced the Architecture and Acuity of Critical Systems Thinking (henceforth, ArCST and AcCST respectively) as responding to two urges in Critical Systems Thinking. Firstly, an urge to construct in a critical manner. Secondly, an urge to be critical about such constructions. The second urge requiring the first urge in order to understand what it means when one begins to construct. And the first urge requiring the second in order to realise the manner in which construction is given a privileged position in epistemology. As we introduced them now we will conclude them.

The two critical urges in Critical Systems Thinking will now be concluded using figure 13.1 below. Figure 13.1 shows the Architecture and Acuity of Critical Systems Thinking as it relates to these two critical urges. Accordingly, we will now work through this figure as we conclude our understanding of the importance of these two critical urges in Critical Systems Thinking.

Figure 13.1 The Architecture and Acuity of Critical Systems Thinking



STAGE TWO : The AcCST as critical of construction

Figure 13.1 represents stage one of this thesis as a rectangular construction housing the first five chapters that constitute the *Architecture of Critical Systems Thinking*. The construction itself is a response to the first stage's predominant logic of structural consistency, as the construction is consistently upheld from the second chapter to the fifth chapter. Structural consistency pervades throughout this construction. The urge to construct in a critical manner is, therefore, clearly shown in this figure. The critical manner of the construction is the manner in which structural consistency is critically adhered to and developed as we proceed from chapter two to chapter five.

The effects of the first chapter are implicit in the critical construction that is the first stage. The effects being the two architectural definitions of structural longevity and relational modification. These two definitions are operational in chapters two and three. Also, and perhaps more importantly, the first chapter gives meaning to the whole critical construction in its inter-cellular discussion of the meaning of Architecture.

Chapter two develops from the first definition of architecture offered by the first chapter: structural longevity. Structural longevity relates to visibility, in the visibility of the twelve celled matrix that is the ArCST. Structural longevity relates to repeatability, in the consequential repetition of the ArCST throughout the first stage. Structural longevity relates to structural consistency, in the combination of the two structural sides (the Three main debates and the Four epistemological levels) demanding consistency to form twelve coherent cells which will epitomise longevity in their structural cohesion. Structural consistency becomes the over-riding logic in this chapter because the two structural sides

must show a similar structural consistency in order to combine to form the critical construction that is the ArCST. The criticality of construction therefore being the manner in which the logic of structural consistency pervades the entire architecture. The call for criticality is a call for structural consistency. As we can witness from figure 13.1, chapter two is represented as the twelve cell matrix with the first structural side of Margins, Fiction, and Will along the top, and the second structural side of Dialectical-Forms, Cross-Dialectics, Cross-Generics, and Pluralism along the left hand side. And the combination of these two structural sides represents the predominant logic of structural consistency that results in the ArCST in its structural basis.

From this structural basis, chapter three moves on to establish the second definition of the architecture as offered by the first chapter: relational modification. Relational modification is the manner in which relata become modified as they are brought into contact with other relata. Relational modification builds upon the stability that the logic of structural consistency offers to the ArCST. Relational modification is a concentration upon this logic in order to establish a complementary logic of continued understanding. The logic of continued understanding is required in order to comprehend how words change their meaning and relevance as they are brought into contact with other words (a fine example here being 'Critical' and 'Architecture', which if brought together would each need to modify their relationship with each other). This logic is represented diagrammatically in figure 13.1. The two orthogonally opposed arrows represent the two flows that are determined by the logic of continued understanding. The vertical flow works to continually understand the three contexts (Marginal, Fictional, and Willed) of the second structural side (from Dialectical-Forms to

Pluralism). The horizontal flow works to continually understand the four contexts (Dialectically-Formed, Cross-Dialectical, Cross-Generical, and Pluralistic) of the first structural side (from Margins to Will). The combination of these two ortogonally opposed flows is the logic of continued understanding, a logic that determines the third chapter, and a logic that is determined by the logic of structural consistency.

The Structure and the Process of the ArCST now allow us to Content the ArCST. Contentment is dependent upon the satiation of the logic of continued understanding, a logic that requires a balance between the vertical and horizontal flows of chapter three. If these orthogonally opposed flows are balanced, then the cells within the Architecture will be contented. If, however, these flows fail to balance, then the cells become 'satellites of critique'. These satellites of critique interact when they border contented cells to establish an *Architecture of Auto-critique*. Such interaction operates the *will to critique* of the dis-contented cells upon the contented cells *within* the 'self' of the Architecture, thus effecting an Architecture of Autocritique. Such an Architecture helps the ArCST to minimise the overpowering of the vertical flow upon the horizontal flow which caused the imbalance and hence created the satellites of critique in the first place. An Architecture of Autocritique can minimise the inherent imbalances within the Architecture by ensuring a continuous dialogue between satellite cells and their bordering contented cells. This continuous dialogue keeps the Architecture contemporary and respondent to the intellectual requirements of the Systems community, thereby ensuring a better balance between the two flows within the

Architecture. Only three satellite cells exist alongside nine contented cells, thus showing the potential for a well contented ArCST. The contented ArCST is represented by the hatching of the twelve cells in figure 13.1.

The application of the ArCST to Systems Thinking is now possible. The ArCST has been structured according to the logic of structural consistency, processed according to the logic of continued understanding, and contented according to the combination of these two logics, and we are now in a position to apply these achievements to contemporary Systems Thinking. We choose five Systems Thinkers who together represent the majority of contemporary problematics within the discipline that we call Systems Thinking. They are: Beer ('B' in figure 13.1); Checkland ('C'); Flood ('F'); Flood and Jackson ('F&J'); and Jackson ('J'). The application of the ArCST to these five Systems Thinkers begins with an initial understanding of each Systems Thinker (the first movement). This initial understanding consists of asking three questions: what are their Themes; what are their favoured words/phrases; and what are their definitions of 'System'. This initial understanding of each Systems Thinker correlates with chapter one's initial understanding of the many meanings of the word 'Architecture'. In understanding the main themes of the five authors we can seek to record the incidence of the three main debates (Margins, Fiction, Will) within their work, where the themes relate to the debates (the second movement). In understanding the favoured words/phrases we can seek to record the employment of the four epistemological levels (Dialectical-Forms, Cross-Dialectics, Cross-Generics, Pluralism) within their work, where the favoured words/phrases relate to the epistemolgical levels (the third movement). In understanding the definitions of 'System' we can combine (employing the guidance offered by the logic of

structural consistency) the two structural sides (movements two and three of this chapter five) to give an Architecture of CST for each Systems Thinker, where the 'Systems' definitions relate to the combination of the two structural sides. The resulting Architecture of CST for each Systems Thinker is represented in figure 13.1. These five developments promote the possibility for an Architecture as commensurability to be posited, and this forcible suggestion can be seen as the result of an application of the ArCST.

This first stage has obeyed structural consistency throughout. It has firstly offered a structure which shows itself to be consistent throughout. It follows by building upon this consistency by promoting a process of continued understanding. It then combines the process within the structure to content the ArCST, and where contentment is not forthcoming an Architecture as Autocritique is established. It ends with an application of these achievements to five Systems Thinkers, a direct application that results in an Architecture as commensurability and thereby ends the first stage in a positive sense. The first stage then awaits the critique of construction that the second stage will offer.

The second stage responds to the second urge in Critical Systems Thinking. The Acuity of Critical Systems Thinking (AcCST) is critical about the construction that is the ArCST. Because it is critical about the notion of construction it cannot be contained in a construction itself (as the ArCST is). With reference to figure 13.1 we can see that the second stage develops from the construction in many dimensions that cannot be contained within an architectural construction. This inability to contain the AcCST causes some problems with regard to containing an understanding of the AcCST because the Acuity demands that the

rationality of construction be severely questioned, and the only way to question such a rationality is to re-linquish any possibility for establishing a critical construction. To clarify. The establishment of a critical construction is to uphold a rationality that permits constructions to exist independently, independently from the type of critique that the Acuity offers. Accordingly, in this second stage we offer a critical appreciation of a construction built upon critical notions that demand an independence from construction. Two notions of being critical for two stages. Let us now consider the second urge in Critical Systems Thinking.

Chapter eight is the process of the Acuity acting upon the structure of the Architecture. The clearest representation of the Architecture amounts to the predominance of the logic of structural consistency. Therefore, the seventh chapter critiques the logic of structural consistency. It begins by re-tracing the logic as it manifests itself through the structural complexities of the ArCST. The manifestations fall into four distinct stages, that are consequently represented in figure 13.1 as four arrows proceeding from the architectural structure, and they are: firstly, an extraction of the content of the Architecture (of chapter four); secondly, a loss of connection between the two structural sides (of chapter two, and having clear consequences for chapter three); a loss of connection between the main debates (of chapter two again, and again with clear consequences for chapter three); and finally the realisation of two de-constructed clouds (of the whole first stage) (the two clouds are represented as an output from this re-tracing in figure 13.1). These four distinct stages are the processes that guide the Acuity, and we find that at each stage the logic of structural consistency is being considered. To extract content is to dis-allow the predominance of the logic of structural consistency, since the contented Architecture represents a

sophistication of this logic in its formalisation of theories within the Architectural boundaries. To lose connection between the two structural sides is perhaps the most direct dis-allowance emanating from the Acuity. This is because the two structural sides, when combined, extend structural consistency from the epistemological levels and main debates to the entire Architecture, and it is at this acute point that structural consistency most clearly represents its relationship with structural longevity, visibility, and repeatability (emanating from chapter two). To dis-allow such a connection is to bring out the inconsistencies that exist between these two structural sides. The realisation of two de-constructed clouds comes as a direct critique of the Architecture in all its forms (Structured in chapter two, Processed in chapter three, Contented in chapter four, and Applied in chapter five). Two clouds, two desires: a desire to construct and a desire to compare. The two clouds, therefore, are enabled to question the logic of structural consistency in two ways. Firstly, in that the logic has a desire to construct: what is this desire, has it critical worth? Secondly, in that comparisons are comparisons of constructions (to compare without construction is to be unable to compare), and that structural consistency requires comparisons in order to enhance the consistency of that which is constructed: what is this desire, has it critical worth? It is here that the Acuity (backed with the theoretical developments made throughout the second stage) attacks one of the main claims of the Architecture in questioning the status of the Architecture as commensurability. The relationship between structural consistency and commensurability is evidenced, evidenced as a relationship that thoroughly neutralises meaning. This is the process of the Acuity operating on the Structure of the Architecture.

The Structure of the Acuity develops from the two clouds by proposing an opportunity to develop a structure that responds to the critical worth of the twin desires of construction and comparison by not neutralising meaning. The Acuity shows us that the Architecture neutralises meaning in its over-dependence on formalisations, allowing form to dictate meaning. In order to guard against this we need to consider three words: Interpretation (Interp. in figure 13.1), Representation (Rep.), and Meaning (Meaning). To realise the acute significance of these three words is to begin to witness the worth of a structure that maintains and does not neutralise meaning. This exercise generates a Basic structure which is able to represent (using the square-based pyramid, shown in figure 13.1 in its two dimensional form) interpretations (in the sentence form "is" at the top point of the pyramid) of the many meanings deriving from the word "is". The movement from the representation to the interpretation is the movement from the Architecture to the Acuity. This movement shows the interdependence of the Architecture and the Acuity (effectively the interdependence of the two urges in Critical Systems Thinking) and simultaneously the clear need to establish difference as one moves from the representation to the interpretation. The interpretation disallows conceptual homogeneity at the point that differentiates from the existence of the Architecture in tolerating conceptual interdependency with the Architecture (represented in figure 13.1 by the arrows from the Architecture. The return of the arrows, however, is stifled by the Architecture's rationality of independent construction). Such interdependency draws out the meaning of the Architecture for the benefit of the Acuist; a structure, therefore, that maintains meaning by disallowing its form to neutralise meaning.

The contentment of the Acuity employs the two clouds that created the Structure of the Acuity in an attempt to content interpretations from representations. This leads, however, to a re-cognition that the Acuity is process driven, and consequently, the word 'content' must also be process driven. The word 'content' can be both noun and verb, where the noun is shown as structure and the verb as process. As the process dictates the structure in the Acuity, the verb dictates the noun. We discover that the constitution of the noun is given by movements in grammar that we call tropes. We then associate the Basic Structure of the Acuity to two tropes in particular: metaphor and irony (both shown in figure 13.1 as searching for metaphorical and ironical uses within the ArCST). The choice of these two tropes is based upon them being the most relevant and most prevalant within Systems Thinking (metaphor has seriously been studied since the publication of Morgan (1986), and irony offers a realistic abstract opposition to Dialectical-Forms, and by opposing the foundations of the ArCST, the AcCST has a possibility of contenting itself). Attempts are then made to content the Acuity, but tropes cannot be contented because they escape the structuring capacities of the noun and maintain the movement of the verb. Unable to content the AcCST we search for reasons why. Using metaphor we discover a philosophical downgrading together with a philosophical requirement for metaphor: the metaphorical play within grammar is not taken seriously in the ArCST, while the AcCST takes seriously the play and its consequences for lack of contentment. Using irony we discover that meanings escape contentment, and again the AcCST is forced to recognise the inevitabilities of contentlessness. We are then armed with this basic knowledge of irony and metaphor that gives us the basic knowledge that the Acuity cannot be contented.

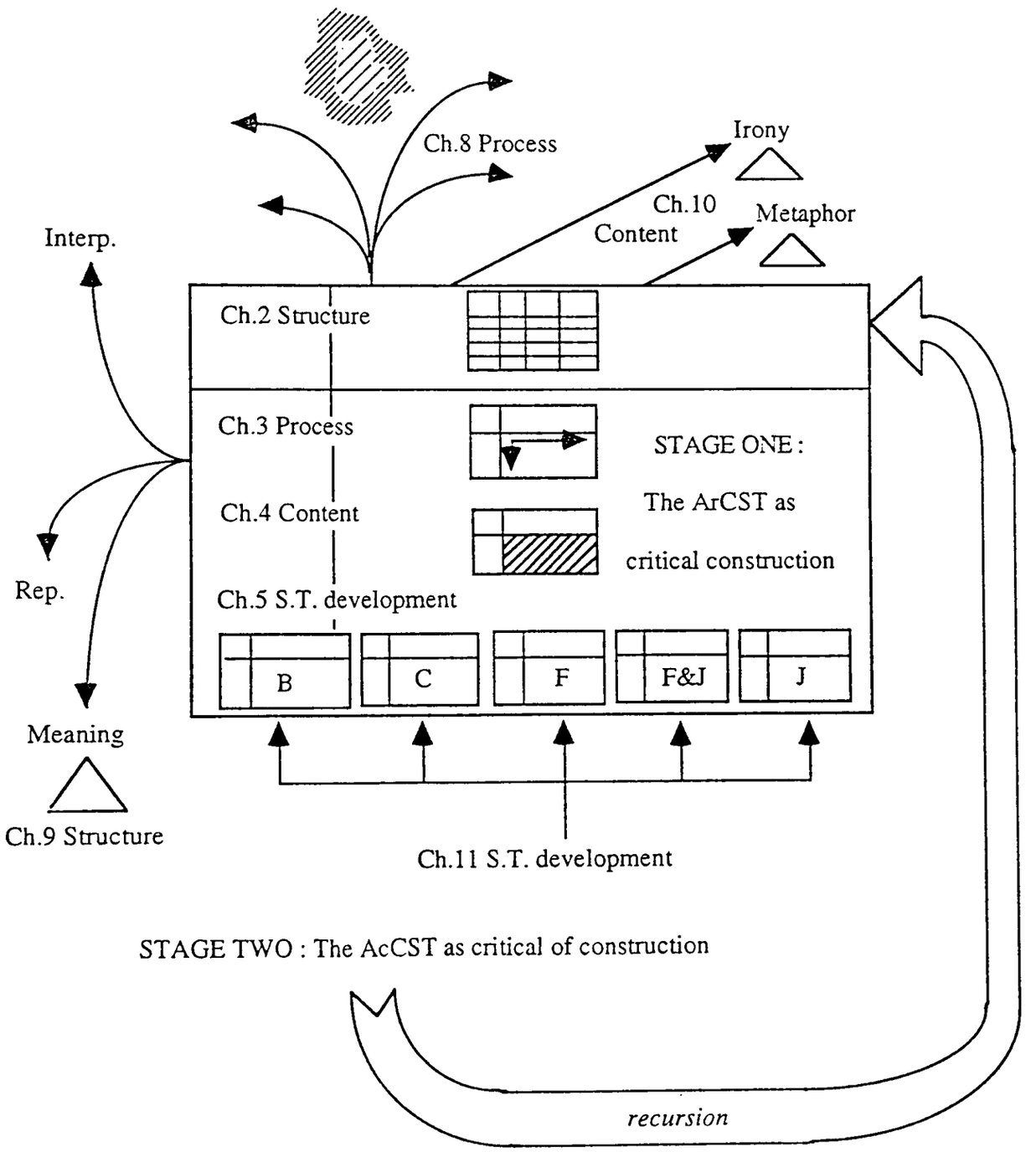
The application of the AcCST seeks to offer an Acuity as paradigm (in)commensurability. Looking at will and representation in order to see how authors attempt to differentiate between appearance and reality allows us to record some evidence of dualism within paradigmatic thinking. The consequences of this dualism lead to a scientific dependency that requires an anti-dualistic retort. The case between dualism and paradigm (in)commensurability is clarified, and an inevitable paradigm incommensurability is shown. To counteract these theoretical inevitabilities we look at the contentlessness that is irony. Irony needs to be applied to the relationship between dualism and paradigm incommensurability and consequently, an irony of paradigm incommensurability is established. Irony also needs to be applied to a case of paradigm commensurability. The interdependency between the AcCST and the ArCST is re-emphasised when the Architecture as commensurability is applied to irony (see this represented in figure 13.1), and consequently, an irony of paradigm commensurability is established. The establishment of an irony of paradigm (in)commensurability can be viewed as the process of the Acuity operating upon the structured decisions that stand as closed systems supporting either commensurability or incommensurability. The irony of this situation considers paradigm (in)commensurability as a linguistically dictated contingency. In order to re-appropriate our vocabularies which discuss paradigm (in)commensurability we need to respond to this linguistically dictated contingency in the creation of our own vocabularies, where the irony of 'final' vocabularies is made ironical through a literary simulated ignorance. The application of irony to this debate acts as a severe criticism of the Architecture as commensurability and stands as a strong enunciation of the urge to be critical of such constructions.

The process of this second stage has offered a close observation of the positive and independent approach offered by the first stage. A process that continually operates around the structure of the Architecture in order to draw out inconsistencies in its predominant logic of structural consistency. The re-tracing of the first stage by the second has been thorough in its rigourous maintenance of the same four basic moments (the four chapters of structure, process, and content, and application), re-organised to respond to the overall change in rationality (from critical construction to being critical of that construction). We can finish this thesis with a re-cognition that the Acuity necessarily returns to the Architecture in a recursive manner. This recursive manner is given by the result of chapter eleven's debate concerning paradigm (in)commensurability. The result was an irony of self-creation: an ability to master irony through creating a difference (and not an (in)commensurable position) between working vocabularies. This result returns to the Architecture because the Architecture will continue to create itself (according to the logic revealed throughout the second stage) in the interests of its own stability. The recursive manner allows for the Architecture to employ the findings of its own critique (given by the Acuity), it allows the Architecture to self-create in an ironical manner. This is shown below in figure 13.2.

The two urges in Critical Systems Thinking have been given a significant consideration in this thesis. The counter-position of the two urges has ensured that the argument for the interdependency of counter-rationalities has been supported (shown below in figure 13.2 in a recursive manner). We remain aware

that construction is necessary, but we also must add that constructions cannot avoid logical inconsistencies. An interdependency of these two urges will maintain the meaning of this thesis.

Figure 13.2 The Irony of self-creation



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