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Education after Wittgenstein:

A Causal-Cultural Theory of Reference and Meaning

and its Implications for Education

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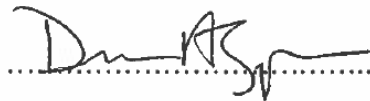
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Summary of Methods and Findings

This thesis sets out to examine the analytical philosophy of language and related pre-linguistic cognitive processes in order to identify what connections these may have with our knowledge of the natural and social worlds. It sets out some Initial Questions and aims to answer these and to produce a Causal-Cultural Theory of Reference and Meaning which has implications for Education and specifically for Learning and Teaching.

Methods: The methods used are Philosophical Analysis. This method involves critical analysis of sources, drawing out their implications using a variety of means, in order to draw valid inferences and conclusions from them. It therefore does not restrict itself to any particular methodological stance. This thesis takes a causal stance to perception, reference and therefore meaning. This relates to both the natural world and the social world.

Major Findings: By means of our perceptual faculties, the natural world makes causal effects occur in our brains. This is the process of seeing or sensing. Visual perception is our dominant sense and provides most of our knowledge. Our perceptual faculties allow for Object Identification and Re-identification through the process of selective attention. We are able to describe and differentiate Objects so presented and to group Objects into sets of Objects with the same or similar characteristics. This allows us to differentiate p and $\sim p$ which is the foundation for logic. Counting sets of objects provides a foundation for arithmetic and mathematics. Describing objects and predicting set membership allows a foundation for generality and hypothesis. All of these aspects are reflected in the development of language. Language is the expression of thought in symbolic form. Our descriptions of the world expressed in language are symbolic models of the world.

Given the above findings, it is clear that our knowledge of the natural world starts with the simplest of descriptions and builds up incrementally to conceptual complexity. In parallel with this our language starts simply and develops complexity from simple descriptive propositions which develop incrementally into complex conceptual hypotheses. Our methods develop incrementally from logical truth and falsehood, through analytical truth and falsehood, probability and finally to hypothesis. Each form of knowledge requires conditions of satisfaction to be stated in order to assess whether the statement, concept or hypothesis is reliable or unreliable (this starts with truth/falsehood and develops complexity through verifiable/falsifiable to

explanatorily reliable/explanatorily unreliable. Conditions of satisfaction are required in order to raise assertions from the status of opinion to the status of fact.

An examination of language shows that there are five and only forms of Speech Act. Speech Acts are Intentional Actions. An examination of these forms shows that these involve power structures, expressly or tacitly. A number of forms of Speech Act are necessary for the construction and analysis of the social world. Dialogue involves the negotiation of shared meanings aimed at achieving collective purposes. Descriptions of the social world are expressed in the form of narrative of lesser or greater complexity. The holistic social world and its products may be termed culture. Cultural explanations depend on the Hermeneutic or Interpretative method. There are a series of conditions of satisfaction required to state whether social narratives are reliable or unreliable. Conditions of satisfaction must remain faithful to the lower orders of knowledge, namely the knowledge of the natural world. These relate directly or indirectly to evolutionary developments. This is because human societies are aimed at allowing societies to live in and exploit niches in the world and to avoid external and internal threats. The strongest feature in our culture is social organisation.

This thesis produces both Causal and Cultural Theories of reference and meaning. In combination these produce the Causal-Cultural Theory of Reference and Meaning which is referred to in the title. This theory has implications for Education, namely for Learning and Teaching. The most important finding for Education is that the ability to learn and the curriculum must start with simple fields of knowledge, and progress to more complex ones. At the same time the learner must learn to develop cognitive skills, linguistic skills, methods, and concepts starting simply and progressing in complexity. Knowledge, cognitive skills, linguistic skills, methods, and concepts are all causally related to each other. Hence increasing complexity in one involves complexity in the others. Various ways of enhancing learning exist, particularly in ways that engage the limbic system and so involving affect, emotion and desire fulfilment. With regard to teaching, the teacher is a facilitator, guide, assessor, protector and friend to the learner. The teacher must introduce the learner to knowledge systematically from simples to complexes. The faculty of insight suggests that teachers should deliver materials at a level just in advance of the learner's level of attainment in order to encourage insight and creative problem solving and understanding. The Causal-Cultural Theory provides a cognitive and linguistic foundation for a number of empirical studies in Educational Theory.

Acknowledgements

The research for this thesis has taken a number of years to carry out. I have learnt a great deal about philosophy of language, cognitive science, psychology, and education. I have also learnt a great deal about myself. My learning was episodic and not linear. I have made a number of very sharp turns when I discovered that I could not pursue one line or other for various reasons. At times this has left me in a state of existential numbness and confusion. At other times I have felt considerably stressed, especially during the writing up time. These stops and starts are to be expected especially when one is working full time and looking after loved ones. My family, friends and colleagues have all provided me with great support throughout this research. Without them I would not have been able to submit a thesis at all. I should therefore like to acknowledge all their help. I have received a great deal of patient support and guidance from my supervisor, Dr. Aidan Seery. Thank you so much for all of your help. Your guidance has been invaluable. Even in the worst of times you have been calm and supportive. I wish also to thank my children, Filip and Katya, and my partner Lucy. You all have wished me well and supported me in so many ways and on so many occasions. Again I could not have submitted this thesis without you. I should also like to thank my late mother who listened patiently to what I had to say and who appeared at least to maintain an interest in my research. As I cannot now thank her personally, I wish to dedicate this work to her memory.

"A Causal-Cultural Theory of Reference and Meaning"

Duncan Alexander Spiers

Abstract

Educational theory frequently does not appear to have satisfactory cognitive and linguistic foundations. It is frequently reliant on empirical or ethnographic findings but without a connection to the underlying cognitive and linguistic faculties. This thesis sets out to remedy this defect. In doing so a causal theory of perception, knowledge, reference and meaning is developed. On analysis, it is found that knowledge is ultimately based on the recognition of objects in the natural world. Descriptions of objects such as allow criteria for identification and re-identification allow objects to be singled out or grouped into sets dependent upon their perceptual characteristics. The foundations of logic and mathematics are grounded in object identification and grouping. Regularities in object characteristics and behaviour allow for the generation of concepts and hypotheses. The methods are analytic logic, deductive-nomological and inductive-statistical. Our knowledge develops incrementally from simples to complexes. In parallel with this our forms of speech develop incrementally from simples to complexes. Similarly, methods and the conditions of satisfaction which are necessary in order to raise an description from being an opinion to being an assertion of fact. In the field of social knowledge, it is found that there are five forms of speech act. These necessarily involve power relations. Collective meaning is negotiated in dialogues. Speech acts are the basis of the construction and analysis of social institutions and organisation. The form of speech necessary for description of social organisation is the narrative. The methods are interpretative or hermeneutical. There are conditions of satisfaction required for explanations of social phenomena. The conditions of satisfaction devolve ultimately upon evolutionary selection. The sum of social knowledge, organisation, forms of life and social products are termed "culture". A causal-cultural theory of reference and meaning is developed and stated. The theory has implications for learning and teaching. This is particularly so for the staged delivery of teaching materials. Insight and creativity are important for understanding and problem solving. Affect and emotions enhance memory acquisition. Power relations are necessarily involved in discourses. Various means of enhancing learning and teaching are proposed.

CONTENTS

Chapter One

Introduction: Background and Context

1.1 Background

This thesis sets out to examine the analytical Philosophy of Language and related pre-linguistic Cognitive processes in order to identify what connections these may have with our knowledge of the natural and social worlds and in turn how they may affect learning and teaching. The origin of this work stemmed from the writer's forming a view that all too frequently educational theory has been developed on the basis of empirical findings during teaching or ethnographic studies rather than on the basis of some underlying foundation in our linguistic and pre-linguistic cognitive faculties. In other words the writer did not feel that our common humanity with all its relevant faculties was being sufficiently addressed. There also appeared to be some considerable dispute as to the purposes of education. Various explanations have been offered: making a person civilised, giving a person knowledge necessary for living through life, opening up possibilities for a person's expression and self-expression, training in skills for life, a body of knowledge from teacher to learner, the fitting of a learner for a role in society, the training of a learner with skills and knowledge as a prerequisite for future employment, among other purposes. It seemed to the writer that some clarity could be achieved by a careful study of the linguistic and pre-linguistic cognitive foundations of education.

This thesis proceeds to state and use a Causal Theory of Reference and Meaning. Causal theories are now mainstream in contemporary philosophy in all of the following areas: our perception of the world is now generally thought to causally given to us, our language is now thought to be causally based, and our forms of knowledge are thought to be caused by the world external to us. There are even causal theories of mind. In each case there is involvement of underlying cognitive functions which present the external world to us.

There is a close connection between language and thought. Wittgenstein thought that thought and language are one and the same. A sentence in a language is the expression of a thought. Language itself appears to be a social institution dependent on social conventions. It is a rule ordered activity. Language is not merely a model or simulation of the world but is also a social phenomenon. Language enables us to express our thoughts about the world. It is also the principal means of communicating knowledge and of relating to other human beings. As a model or simulation of the world, language is generated by and normalised to the world that it describes. For this reason the question of conditions of satisfaction are raised. If a description of the world is to be true, then there must be a correspondence between the sentence and the situation that the sentence describes. But equally language must contain structures which enable our perceptions of the world to be adequately stated. Whether language is innate or created out of our experience of the world is an interesting question. Either way, if our descriptions of the world and of society are to be of use to us we must be able to tell if they are true or false, right or wrong, explanatory or otherwise. Conditions of satisfaction are required for this purpose. The fact that we have conditions of satisfaction for our assertions

raises them from having the status of mere opinion to having the status of fact.

We therefore need to know what the conditions of satisfaction are for the type

of linguistic statement that we are making, whether it be a statement about how

things are in the world or whether it be a statement about our relations with

other human beings. So it is necessary to consider not merely our perceptions

and how our knowledge is derived from them, but also what sort or sorts of

conditions of satisfaction are appropriate for the adequate communication or

our knowledge. This study addresses conditions of satisfaction throughout this

thesis when considering both our causally given knowledge of the world and

also our conceptual and our social knowledge.

The sorts of knowledge that we can have together with ways in which we

can state or communicate that knowledge have a strong bearing on Education.

Education is a process of conveying knowledge from one generation to the

next. Learning involves being open to receiving that knowledge. Teaching

involves transmitting that knowledge. At one time our principal teachers were

our parents, but today teaching is professionalised. We need to know how best

to teach our learners. This thesis sets out to see how we can best achieve this

– so far as our linguistic and pre-linguistic cognitive faculties allow.

1.2 Research questions

To assist the author in this research, the researcher has formulated a number

of specific questions with which to interrogate the research and demonstrate

progress and conclusions which are addressed at the end of each chapter. The

questions were suggested by a long period of reading books and papers in

analytical philosophy and cognitive neuroscience and also from the researcher's own experience of teaching and learning practice over a large number of years. In most cases it is not possible to identify the precise situations which gave rise to these questions, this being particularly so in regards to teaching practice, but some specific aspects of the origin, context and utility of these questions are shown in the Appendix to this thesis. The specific research questions are:

1. How far can an understanding of pre-linguistic cognitive functions and linguistic functions be related to knowledge?

2. Do pre-linguistic cognitive and linguistic functions structure our knowledge?

3. How can a knowledge of pre-linguistic cognitive functions and linguistic functions illuminate and enhance our understanding of education, learning and teaching?

4. How are language and thought related?

5. What are curiosity, insight and creativity so far as relevant to education? How are they or should they be involved in the educational process?

6. Must we understand explanations of society and culture in terms of narrative?

7. How does narrative illuminate the educational process?

8. How are power relations related to the educational process?

9. How can we enhance Motivation in education?

10. What are the conditions of satisfaction (truth/falsehood of linguistic and mathematical assertions, appropriateness or otherwise of generalities and scientific laws and interpretative narratives) for our knowledge? How are these conditions of satisfaction related to the acquisition of knowledge?

11. Can we state a Theory of Education which summarises our findings concerning the above?

These initial research questions are addressed in the conclusion of each chapter in the thesis. In the final chapter this study gives a Causal-Cultural Theory of Reference and Meaning and shows how this relates to Education.

1.3 Philosophical and methodological perspectives of this research

The methodology utilised in this thesis is that of critical realism. This is a methodology devised by Bhaskar (1975) who conflated the deductive nomological method of the philosophy of science with interpretative methods of the philosophy of social science in order to explain knowledge in areas on the interface between these two realms of knowledge. This thesis is a qualitative examination and analysis of both of these realms. Chapters Two to Five discuss our knowledge of the natural world and show the importance of a causal theory of reference in that realm of knowledge. Chapter 6 discusses our knowledge of the social realm of knowledge and shows the importance of culture in providing interpretations of the relations of social entities. The

methodology of critical realism, enables knowledge of the world in these two realms to be built up, while asserting both the reality of the world or worlds being explained while at the same time recognising that our knowledge of the world depends upon and is constrained by our perceptions, observations and experiences of these worlds. In adopting this methodology, the perceiver is able to express the qualities of the underlying world as they appear to the perceiver in the manner of perceptual objects which are thus manifested to the perceiving subject. The commitment to the existence of an underlying real world represented in objects of perception enables the underlying real world to become known progressively through a process of iterative analysis and criticism. Bhaskar acknowledged that such knowledge may involve layers of reality at different levels of complexity. The methodology also allows for the use of analytical questions aimed at providing clarity to our knowledge through the process of analysis and criticism.

In this thesis the methodological commitments depend upon the researcher's ontological, epistemological and axiological perspectives.

Ontology is the study of what exists. In this thesis, the ontological approach is committed to the existence of the real world of natural objects as these are understood by science. The philosophers of the analytical tradition, notably Frege, Russell and Wittgenstein are committed to the existence of real objects in the natural world which are presented to the perceiving subject as objects of perception and even of acquaintance (Russell p.35 and 38 of this thesis) which can be referred to in language by words as it were by the attaching of a label. In addressing the world of social entities in Chapter Six of this thesis, this thesis is committed to the existence of social entities which

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stand in relation to each other and are recognised in social interactions. These have a reality which is constructed by the participants in the linguistic community and can be described in their totality as the culture of the linguistic community. A strongly realist stance is taken to both the natural and social worlds and the methodology of critical realism shows that a holistic theory of both aspects can be developed through a process of analysis and criticism.

Epistemology is the study of knowledge and is concerned with the processes whereby knowledge of the subject matter under scrutiny can be built up. Within the realm of the natural world and its objects, to which the ontology is committed, our knowledge of the world and its objects is provided by the relation between subject and object where the subject perceiver senses and becomes acquainted with the objects of perception. This thesis starts with simple objects perceived in the visual field and with their description in language using subject and predicate descriptions. As knowledge is built through the process of analysis and criticism more complex linguistic forms develop hand in hand as it were. Kant (1950) asserts that mere passive sense impressions of the perceptual objects is insufficient for knowledge. What is needed is the contribution of mental intuitions and analysis. Kant is not a pure empiricist as he asserts that the mind has work to do to make sense of and order the sense perceptions in order to build knowledge out of the sense data. This shows that a process of analysis and criticism is essential for the development of knowledge. Conditions of satisfaction are invoked to establish the truth of descriptions and generalities. At its most complex the relation of complex regularities and generalities of perceptual objects as experienced by the perceiving subject can be rendered by the deductive nomological method of

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the sciences giving truth conditions for these generalities and establishing the elements of perception as real entities within the natural world. In connection with the social world, where social entities are constructed by those within the linguistic community, the objective entities are experienced in relation to the perceiving subject. Knowledge of the social entities is determined by the experience of the relation of the subject with the social entities. From the perspective of the perceiving subject, the social entities are recognised through the culture of the linguistic community and interpreted using meanings. This gives rise to the hermeneutic or interpretative method in the social sciences where meanings are interrogated using narratives. This again involves a process of analysis and criticism.

Closely associated with the social world is the appearance of values which are also determined by the culture of the linguistic community. In negotiating these meanings within discourse, it is once again clear that a process of analysis and criticism is required. The same applies to the recognition of values within a culture but it is clear that the values of a community will become clear in the practices and customs of the community (see the discussion of Wittgenstein's forms of life and customs and practices on pages 82ff of this thesis) and will give rise to distinctive forms of behaviour and in particular the differentials of power and status of individuals. To a great extent therefore it appears that values are culturally relative. They evolve from the meanings which the cultures develop as they grow in complexity. They become manifested in the distinctive customs and practices which inform the actions of the members of the linguistic community. However, the five forms of speech act looked at in Chapter Six show that power differentials are to be

found as necessary elements in three of the five forms of speech act. The concept of power is very important in the discussion of the social world. This reaches its height in the discussion of Foucault and the implications of power relations and their abuses is briefly discussed in relation to power relations in the classroom (page 247).

1.4 Structure of the Thesis

The research starts by looking at the origins of the analytical Philosophy of Language.

Chapter Two looks principally at the work of Frege and Russell. Chapter Three looks at the early work of Wittgenstein. Chapter Four looks at the later work of Wittgenstein. Chapter Five looks at the Causal Theory of Language, at perception and at pre-linguistic cognitive faculties relating to perception and to language. At the end of Chapter Five we give a Causal Theory of Reference and Meaning. Chapter Six looks at speech acts and the social aspects of language. It considers power structures and social organisation. Various theorists' cultural theories are considered. Conditions of Satisfaction are considered for any Cultural Theory. At the end of Chapter Six a Cultural Theory of Reference and Meaning is given. Chapter Seven is the conclusory chapter of this thesis. It states how the Initial Questions are finally answered. The Causal-Cultural Theory of Reference and Meaning is stated. The combined theory is shown to be able to provide a foundation for the work of some notable Educational theorists. Finally recommendations for further research are made.

Chapter Two

The Foundations of the Philosophy of Language

2.1 Introduction

In this Chapter the foundations of modern philosophy of language are considered. These foundations were laid by the German philosopher Gottlob Frege in the late 19th Century who turned his attention from the logic of mathematical propositions towards the logic of linguistic propositions early in his writings. Frege had noticed that the logic of both was to some extent analogous, for example identity statements[1], and he set out to explore this analogy. The reasons for starting this study with Frege are not merely that his work was the beginning of a new philosophical tradition and remain highly influential, but also because his work on reference and meaning state original questions which have since given rise to causal theories of language, knowledge and perception. Put briefly, this study will show that our pre-linguistic perception of the world causally brings about effects on our minds which provide the basis for language, thought and thereby knowledge.

Frege's concern as a mathematician and logician, originally concerning questions about the logic of language, might appear to place him firmly in the syntactic[2] tradition – that he was asking questions about symbols and functions and their logical contribution to true sentences – but he rapidly realised that the logic of language, though used in an analogous way to the logic of arithmetic, was not so much about symbols and the effects of their logical manipulation on

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[1] a=a

[2] It is traditional to divide the philosophy of language into three parts: (1) syntactics (which deals with the logical structure of sentences); (2) semantics (which deals with aspects of conventional meaning); and (3) pragmatics (which deals with the contextual use of expressions).

the truth of a proposition, but rather about questions of fact – about what there is in the world. So he asked questions about the functions of the parts of sentences (about the reference between a term in a sentence and how it relates to objects in the world and also about determinate and indeterminate variables and functions and how these contribute to the truth of sentences) and about the meaning of sentences as whole well-formed propositions whereby judgements about things in the world can be meaningfully made.

To do this he developed predicate logic which provided an important tool in his logical analysis which he carried into his factual thinking.

His philosophical thinking in its more factual applications raised important questions about the meaning of language, about descriptions and sense, and about subjectivity and objectivity (that is to say whether on the one hand we should regard language as something that an individual speaker contributes, or whether on the other hand we should regard language as something external to the individual speaker, that is that language is a social system in which individual speakers merely participate). Frege's discussion of informative and non-informative identities provides the heart of his more factual philosophical thinking.

This study, being concerned with the broad aim of discovering connections between language and education, must be concerned with the questions of reference, logic, meaning, learning, understanding and the use of language. Frege's philosophical discussions of language illuminate these areas. So they are important not merely for their historical prominence but also as the starting point for the discussion of terms which we shall consider in an education context later.

The second philosopher discussed in this Chapter is Bertrand Russell. Russell was greatly influenced by Frege and set out to criticise and refine Frege's logic. Russell's principal concern was similar to that of Frege, namely to give an account of the logic of language and to show that the logic of language derives ultimately from the axioms of mathematics. Russell too asked more broad philosophical questions about language but he rejected Frege's idea that the reference of a term is given by its sense in the form of a definite description. Russell's contrary view was that the reference of a term is given by acquaintance, that is through some sort of experience of the thing designated by the referent. In making this claim, Russell shows his prior commitment to, and developed an empirical view of, language which is basically to be understood as causal: that descriptive sentences designate objects, of which we acquire knowledge through experience (that is to say through their effects upon our perceptual system), and that we therefore are enabled to make statements about these objects.[3] Russell developed from his logico-linguistic thought together with his empiricism the theory of logical atomism, a distinctive approach to understanding descriptive sentences by breaking them down into simple referents and functions in order to make clear their true meanings. Logical atomism reached its heights with Wittgenstein's picture theory of language contained in the Tractatus Logico Philosophicus (the *Tractatus)* which is the subject of Chapter Three of this study.

This study will now proceed to examine the main elements of Frege and Russell's linguistic philosophy.

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[3] This is perhaps a slight gloss on Russell since Russell's empiricism, as we shall see, was of a strong variety which made Russell take the view that ultimately all that we could have acquaintance with are our sense data (the perceptions that we experience with our sense organs) and that therefore all we could ultimately know are the regularities in our sense data and not the putative objects that may have generated them.

2.2 Frege – the Predicate Calculus

Prior to Frege's writings, logic was based upon Aristotle's propositional calculus, which, though greatly developed by Frege's time, still was capable only of showing the implications of individual propositions within a compound series of propositions. Propositional or sentential logic comprised individual propositions or sentences (usually designated A, B, C, et cetera) and logical connectives (negation (not), conjunction (and), disjunction (or), implication (if-then), and bi-implication (if and only if)). By assigning truth values to the individual propositions in the series it is possible to calculate whether the compound series of propositions is true or false. Because propositions are looked at as discrete wholes (whole sentences), they remain somewhat obscure to analysis, and the inferences which could be drawn from a series of propositions required to a great extent to be learnt. One famous example of propositional logic may be demonstrated by the syllogism:

1. All men our mortal.

2. Socrates is a man.

3. Therefore Socrates is mortal.

The syllogism moves from a major premise (1.) which describes a general judgement, through a minor premise (2.) which is a specific instance to a necessary true conclusion (3.). The outcome of the argument, the conclusion, is analytic, a priori and necessarily true .[4] Frege was dissatisfied with the limits of

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[4] These three distinctions are not synonyms. The first distinction which derives from Kant is between analytic and synthetic statements. The former are those statements that are true in virtue of the meanings of the words themselves (a semantic judgement) while the latter are those statements that are true in virtue of some factual situation in the world. The second distinction is between statements

propositional logic since it dealt with whole sentences (and therefore was dis-analogous with mathematical equations) and instead sought to analyse propositions into their constituent parts in order to show the contribution that these constituent parts made to the truth or falsity of the proposition as a whole.

In the *Begriffschrift* (Frege, 1879) and later in the *Grundgesetze der Arithmetik* (Frege, 1893-1903) (see English translations in Geach & Black, 1960), Frege examined the mathematical concepts of variables, functions and arguments, and was able to break propositions down into <u>quantifiers</u> (the existential quantifier (there exists at least one x), and the universal quantifier (for all x)), <u>terms</u> (constants or arguments (specific terms identifying things being referred to) and <u>variables</u> (general terms for things) which together stand for nouns and pronouns of language, and <u>relations</u> (functions uniting variables and constants into predicates of language and so into whole sentences or propositions). The function of quantifiers is to state whether the proposition is always, sometimes or never true (for which the words "all", "some" and "no" are used). These, together with the components of propositional logic which we have already seen above (<u>propositions</u> and <u>logical connectives</u>) allowed for a much more powerful analysis of the logic of linguistic statements. They also revealed more clearly the logical structure of propositions. It can be seen from the analysis of the proposition that a predicate has no truth value until it is

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that are known <u>a priori</u> and statements that are known <u>a posteriori</u> This is an epistemic distinction whereby we can know the truth of falsity of an <u>a priori</u> statement by means of drawing logical inferences, while an <u>a posteriori</u> statement can only be known to be true by carrying out an investigation of states of affairs in the world. The third distinction is between propositions that are necessary and those that are contingent. This is a metaphysical distinction. Necessary statements are those that due to the metaphysical commitments we hold factually could not be false, while contingent statements could be otherwise. As can be seen the meaning of expressions in a proposition in many cases guarantees the truth of the statements containing them. There is a very close connection between meaning and logic.

combined with a referring term. That is to say a constant and a variable are combined together to form a well-formed proposition. Only a well-formed proposition has a truth value and can convey a meaning. In this way Frege was able to break down sentences into their first order components and to show how these components contributed to the truth of a sentence and enabled a meaningful sentence to be expressed.

Frege conceived of logic as a system of principles which allowed for a valid inference in all kinds of subject matter (Kneale & Kneale, 1962, p. 735). Frege's principle use of logic was to show how the concepts of arithmetic (and particularly number) derive wholly from logic (Geach & Black, 1960) (for a full version of the *Grundgesetze* see Frege, 1950). Combining number and logic enabled Frege to make certain axiomatic statements about meaning and about sentences and the connections between the two. For example in his section on the Concept of Number Frege (1950) states that:

> "We ought always to keep before our eyes the complete proposition.
> Only in a proposition have the words really a *meaning*. It may be that
> mental pictures float before us all the while, but these need not
> correspond to the logical elements in the judgement. It is enough if
> the proposition taken as a whole has a sense; it is this that confers
> on its parts also their content. This observation is destined, I believe,
> to throw light on quite a number of difficult concepts, among them
> that of the infinitesimal, and its scope is not restricted to mathematics
> either." (p. 71, para. 60).

While individual terms have *meaning* in the sense that they are, as it were, labels standing for the objects which they represent (a referential theory of the meaning of proper names), sentences really only have *meaning* when read as a whole. However, this use of logic could give rise to a range of problems with which Frege struggled to find answers. He noticed that while some philosophical problems arose through a misunderstanding of logic (this is

perhaps the origin of the "linguistic turn"), others had different causes. In particular words could have different understandings when they are used in language in descriptive sentences. This latter philosophical problem, different understandings of words in use in descriptive sentences, was the subject of Frege's article *Über Sinn und Bedeutung* (1892) to which we now turn.

2.3 Frege – *Über Sinn und Bedeutung,* informative and uninformative identities

The problem of different meanings of words became apparent in the examination of identity statements. Frege's discussion of this (1892) was to have a powerful and lasting effect upon the philosophy of language: in fact it could even be said to have launched the analytic movement in philosophy.[5]

In logic the identity statement a=a is trivial and uninteresting. Leibnitz had formulated this idea in the law that takes his name: that *x* and *y* are identical if and only if they have all their properties in common. In applying his logical work to the realm of language, Frege noticed that apparent identity statements occurred in contexts which were however far from trivial. In his paper *Über Sinn und Bedeutung* (1892, ss. 25-50) (translated as 'On Sense and Reference' in Geach & Black, 1960). Frege gave the example of "the morning star" and "the evening star." These bright stars which appear at different times of the night are not two separate stars but in fact both refer to the planet Venus which can be seen close to the sun at a little before sunrise and just after sunset in the evening. That both terms refer to the same entity was an

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[5] Hence the expression "the linguistic turn."

astronomical discovery. The identity could not be deduced from the meaning of the expressions. Hence the terms are not analytic. There had to be a distinction between the sense (Sinne) of words, phrases and sentences and their reference (Bedeutung), the individual things that the senses pick out. If sense were not different from reference then the sentence "The morning star is the evening star" would be a mere tautology – an identity statement of the form a=a which is true in virtue of the meaning of its terms alone and therefore analytic and uninformative. This would be so if the meaning of "morning star" and "evening star" were simply the reference of these terms to the same astronomical entity, namely Venus. However, as the astronomical discovery showed, there had to be more to *meaning* than reference alone. The sense of the words "morning star" involves not merely a *reference* to a celestial object but in addition the meaning of the term must involve the manner in which the object is *presented* to us, to our senses. Hence the sense of "morning star" means that bright star which we may see in the morning at a little before sunrise and thereby come to know by the name "morning star". The sense of "evening star" means that bright star which we may see in the evening at a time a little after sunset and come to know by the name "evening star". The only thing that differentiates the morning star from the evening star must be the circumstances in which the object(s) are made manifest to us. The distinction could not be known by means of the reference of the two terms alone. *Reference* performs an important role in tying a word, proper name or other singular term to the object in the world so referred to, while the *sense* of the name or other singular term accounts for its cognitive significance. Thus Frege draws clearly a distinction between the reference of a term and the meaning of

a term. The distinction is the key to understanding the difference between informative and uninformative identity statements.

At this stage two further questions arise. The first is, is the use of a singular term in an informative identity statement an unusual or special case of referring? And the second is, in what does the sense of a referential term consist, and how does sense contribute to the reference of the singular term?

Regarding the first question: is the use of a singular term in an informative identity statement an unusual or special case of referring? It could be argued that informative identity statements such as "the morning star is the evening star" are unusual in requiring a distinction to be made between sense and reference. Frequently when we use a proper name or pronoun, we seem to have only the *reference* in mind as its meaning. When we use the term "Aristotle" in a sentence, can we only understand the meaning of the name by giving consideration to the manner by which the object is first presented to us? And what sort of manner of presentation or sense does such a term involve? For a proper name or pronoun, having a sense in addition to a mere reference appears to be somewhat unnecessary for the use of the term, or at least such a sense does not seem obviously to be present to our individual consciousnesses. Furthermore, as Frege himself notes, it seems that it is only in combination with the other components of the sentence that the sentence as a whole has *sense.* It seems that the sentence is the atom of meaning which is only created when referring terms and the other component parts and logical operators of a sentence are combined[6] (Frege, 2008 as translated in Martinich,

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[6] It is common today to refer to the semantic value or contribution which a term makes to a sentence. In this regard it is often said that the semantic contribution that a referent makes to a sentence is that it is a mapping from a term to an object in the world, while the semantic contribution of a predicate is a mapping from an object to a truth value. In this way in the sentence "Raleigh smokes" the semantic

2008, p. 36-49). This takes us to the second question, in what does the sense

of a referential term consist, and how does sense contribute to the reference of

the singular term?

The question of in what does the sense of a singular term consist, raises

for Frege the idea of objectivity, that is the sense of a term must be something

that is objective, common to all users of the term with that reference, rather

than something that an individual intends of the term – for if the sense was

merely something devised privately by the individual user, then the sense would

not be obvious or understood by other users of the language and

communication would be impossible. In a famous passage, Frege says:

> "The reference and sense of a sign are to be distinguished from the
> associated idea. If the reference of a sign is an object perceivable by
> the senses, my idea of it is an internal image, arising from memories
> of sense impressions which I have had and acts, both internal and
> external, which I have performed. Such an idea is often saturated
> with feeling; the clarity of its separate parts varies and oscillates. The
> same sense is not always connected, even in the same man, with
> the same idea. The idea is subjective: one man's idea is not that of
> another. There result, as a matter of course, a variety of differences
> in the ideas associated with the same sense. A painter, a horseman
> and a zoologist will probably connect different ideas with the name
> 'Bucephalus'. This constitutes an essential distinction between the
> idea and the sign's sense, which may be the common property of
> many and therefore is not part of a mode of the individual mind. For
> one can hardly deny that mankind has a common store of thoughts
> which is transmitted from one generation to another" (Geach &
> Black, 1960, p.60).

Frege in a footnote to the same article suggests that the sense is expressible

as a definite description:[7]

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contribution of the term "Raleigh" is a mapping from the term to the object (or person) Raleigh, while
the semantic contribution of the predicate "smokes" is a mapping from the object Raleigh to the truth
of the proposition. It will be noted that the meaning of the proposition as a whole is closely connected
to the notion of truth.
[7] A definite description is a meaningful statement which is often taken as identifying a particular object
or individual. It is in that sense definite. Definite descriptions are frequently indicated by the use of the
word "the." Russell disagreed with this idea of definite description.

> "In the case of an actual proper name such as 'Aristotle' opinion as to the sense may differ. It might, for instance, be taken to be the following: the pupil of Plato and teacher of Alexander the Great. Anybody who does this may attach another sense to the sentence 'Aristotle was born in Stagira' than will the man who takes as the sense of the name: the teacher of Alexander the Great who was born in Stagira. So long as the reference remains the same, such variations of sense may be tolerated, although they are to be avoided in the theoretical structure of a demonstrative science and ought not to occur in a perfect language" (Geach & Black, 1960, p.62, footnote 4).

The suggestion that a definite description could be the expression of the sense of a singular term (that is to say that sense and reference become one – i.e. that Sinn und Bedeutung (Sense and Reference) ultimately combine) is one that remains of great importance but involves particular difficulties. Russell, as we shall see, attacks this idea. We shall also see further difficulties for this suggestion when we come to Searle's Cluster Theory later in this study.

So, the nature of the *sense* of a singular term should be seen as objective, as an idea common to all the users of the language. Frege says that this idea must be the means of presentation of the object named in the language. It follows that this must intend that the manner of presentation is also objective rather than subjective (the way the thing appears to me as a subjective individual). Frege gives the example of the moon. Two people may at different times observe the moon through a telescope. They would have different, though similar, images before their eyes. Nevertheless it is what is common between the two presentations which forms the sense of the expression "moon". Frege says:

> "the moon … is the object of the observation, mediated by the real image projected by the object glass in the interior of the telescope, and by the retinal image of the observer. The former I compare to the sense, the latter is like the ideas or experience. The optical image in the telescope is indeed one-sided and dependent upon the standpoint of observation; but it is still objective inasmuch as it can

be used by several observers. At any rate it could be arranged for several to use it simultaneously. But each one would have his own retinal image." (Geach & Black, 1960, p. 60).

The problem with this idea that the sense of a term is independent of private ideas, mental images or psychological states of the observer, is that Frege gives us no clear criterion by which to identify from the use of a term what objective sense we are supposed to take, or even how to construct or infer an objective sense from any particular term's use. He does not seem to have made up his mind about this. While it may sometimes be obvious what manner of presentation is indicated by an expression such as the "morning star", we are often left wondering how we are supposed to know what sense of an expression is being indicated? Frege is notoriously unclear about the exact meaning of Sense.

Given these difficulties, that singular terms can have different understandings, and that our individual ideas and experiences are not objective and therefore not relevant for the purposes of identifying a referent, Frege is seen to reject a psychological theory of sense. He appears instead to adopt a conventional theory of sense. He also forms the view that sense and meaning must be wholly different. Senses, as properties of referents, cannot be true or false. Only meanings can be true or false. But where do we locate meanings? Strictly, neither <u>sentences</u> of words (as expressions of written or verbal propositions which could be in any human language), nor <u>ideas</u> as the contents of our minds as language users, nor our private <u>experiences</u> can be true or false. Strictly only <u>thoughts</u> (fully analysed well-formed <u>propositions</u> with fixed and determinate objective understandings and contexts) can have truth values. Language as we use it is a poor medium for objective thoughts (propositions),

though the symbolic predicate logic can be used to show us formally how the semantic values of components in a thought (a proposition) can be understood and contribute to the meaning of the whole proposition. This confirms the basis for the division in modern philosophy of language between syntactics (the study of the formal properties of propositions) and semantics (the study of the ability of propositions to convey meaning). This study which looks at the implications of having and using language for education, is concerned with semantic questions rather than logical symbolism and inference. Therefore our primary concern is not with syntactics. It is necessary, however, for a proper understanding of the development of reference and meaning, and therefore how they can be understood and what can be inferred from these, that we should proceed to examine Russell's and Wittgenstein's thoughts on these matters.

2.4 Frege – Analysis and contribution to this study

Gottlob Frege's lasting contribution to linguistic philosophy therefore includes his invention of the predicate calculus as an effective logical tool for breaking down a sentence into its component syntactic parts and showing how the sense of a proposition can be built up out of the semantic contribution of the component parts to the whole, where the whole's meaning is established by its being either true or false. Frege used the method of predicate logic to show that meaning involves both reference and sense but much remains to be drawn out from this distinction. Frege also insisted that it is only complete propositions, in their contexts, rather than individual words, or even sentences, which carry full

meaning. The semantic contribution of a name or singular term is a mapping from the sign to the object which the proposition will go on to talk about. The semantic contribution of the predicate is a mapping from the object talked about to a truth value. Both aspects are needed: both reference and truth. This was demonstrated by informative and uninformative identities. An uninformative identity is analytically true. It is merely a mapping of a sign onto itself. It can tell us nothing about the world. An informative identity on the other hand is not merely a discussion of signs. Rather an informative identity involves the world. The identity of the referent is not shown by means of signs. The world is needed. The first sign shows the manner of presentation of the object in the world. The manners of presentation are always objective. Equally the second sign in an informative identity involves a different manner of presentation of the same object in the world. The identity tells us that the two objects of presentation are in fact one and the same object. This is not analytic but is synthetic. Epistemologically it is an a posteriori connection which is made for the first time, something which could not be known without empirical experience. It tells us something new about the world. The sense of the predicate can be resolved, according to Frege, into a definite description. It is the sense of the predicate and thus the normalising notion of truth, in the sense of connection of the signs' manners of presentation which bind the two parts of an informative identity together. Some sort of experience of the world is indispensable, and language is tied to the way the world is and how we collectively experience it by means of our using the notion of correspondence truth, for either the proposition corresponds with the state of affairs in the world that it describes, and so is true, or it does not, and so is false.

This can be expressed slightly differently thus: with regard to reference, which is central to Frege's philosophical thought, the relation between the sign and the thing referred to is a relation set up by Sense, a definite description and the predicate of a proposition, whatever that may be. Sense, in the form of a definite description, properly construed in language, remains something mysterious in Frege's writings, he never developed the notion of what a definite description was, but the sense of an expression is something objective and common to all the users of a language and cannot be identified with any of: (1) a specific sentence made up of verbal or written words but devoid of context; (2) an idea in a mind; or (3) the private experience of an individual. It appears on the contrary to be some sort of objective human understanding, whether or not reducible in some instances to a definite description. Only propositions have a truth value. The truth and the meaning of a proposition appear to be intimately related – though as yet we cannot say how. We can see from Frege's work that it is logic and truth which were and remained the foundations of all his thinking. In these and other ways Frege introduced the idea of linguistic enquiry, made the linguistic turn into the heart of philosophy and himself made the first tentative attempts at a modern analysis of linguistic meaning. This was an astonishing achievement. It is on these foundations that all subsequent Analytic linguistic philosophy has been built.

It would appear that it is necessary to pursue the concept of reference further in this study. There are a number of landmarks which can be identified thus far: the idea of reference, the necessity of connection with the world, the importance of the tool of predicate logic. There are equally some huge areas of uncertainty: how is the mapping of referent and object to be set up, what is the

objective character of language which enables the sense of words and expressions to be settled in language, that is, who is to say what is the meaning of a definite description? There is no court to which we can refer this question. Rather we all seem mysteriously to accept or approve the meaning of references, words and expressions. How is this unanimity possible? It will appear in the course of this study that, at its most basic cognitive level, the relation between the thing and the sign is set up by a causal relation between the thing and the sign. That will be discussed in the ensuing chapters, but we now turn to Russell who first accepted that some form of causal connection with the world was necessary.

So far as implications for education is concerned, Frege did not appear to consider the connections that might exist between his logical linguistic philosophy and education. But there are themes relevant to education which are presented or may be inferred from this study so far. Frege's linguistic work depended on the idea of the real world. Frege's approach is strongly realist, for objects in the real world feature in Frege's various examples and cement the manner of presentation of a reference and of a meaning to the way that the world is, and is experienced by us. Frege's thought is in general terms scientific. He considered that in both his logical and his linguistic work he was contributing to the scientific edifice. A major role of any language is to describe what exists in the world. Perception and thought form a major part of the process of judgement and description. The thought involves some use of language, for thought is linguistic (for the atom of language and thought is the proposition). Any philosophy of education has to take into account the existence of the real world and the objects in it, and the role of language in expressing our

ideas about it. It is not yet clear in Frege's thought how this connection is made but it appears to be something objective rather than subjective. So it appears that in education, a major part of what we must do is to give our distinctively human collective descriptions of the world which we inhabit. To do so we must use language and this in turn involves common linguistic commitments to the sense of referring expressions and to the meaning of propositions. After all, in Frege's words, "one can hardly deny that mankind has a common store of thoughts which is transmitted from one generation to another" (Frege, 1892, p. 59). This implies that a major function of education is to transmit that store of thoughts to those who are engaged in the learning process, that is, from one generation to the next. This explains our common sense view of the infant child learning a language as engaging in a social practice that predates its existence in the world.

What the relation between the real world on the one hand and the sense of a referring term or the meaning of a proposition on the other hand is, is not yet clear. Nor do we know in what direction the influence between the two is. Common sense might tell us that it is more likely that the form of the real world influences our perceptions and our linguistic descriptions of that world, rather than that the language we use influences the real world or our perceptions of it. But the direction of influence remains to be seen. It is the aim of this study to show that the relation between the real world and the language we speak is, at its most basic, a causal one. If so this would dovetail with current causal theories of perception and knowledge (and, possibly, mind) which could add some triangulation to the causal hypothesis concerning language, and

specifically, reference and meaning. We shall see whether this is the case as this study progresses.

Frege's thinking is consistent with the idea of human beings as rational linguistic creatures living within a real world which they experience through their senses and which they understand by means of their rational faculty of judgement brought to bear linguistically upon their sense perception. There is an inner world of human mental ideas and of judgment which comprises the mind, and an outer world of the physically sensed real world. As such Frege's thought is anthropocentric, human centred, and relies on human capacities of perception, thought, judgement and language. The idea of what it is about human nature that makes a distinctive contribution to this study is one which we should hold in our minds and which is likely to become prominent as pre-linguistic aspects which may have a bearing upon the causal nature of human perception and human minds and cognitive processes. That is to say, the human pre-linguistic cognitive abilities and capacities may become definite conditions for causality of perception and language within this study. Thoughts, as the objective bearers of truth values, do not strictly inhabit either the inner mental or the outer real world (as viewed from the perspective of the human mind) and so in some sense exist, for Frege, in a third realm. This is an unsatisfactory and unnecessary conclusion which this study aims to correct. At this stage, having set the foundational question and some arguments for the linguistic turn in philosophy, the study must turn to the criticisms and contributions of Russell to the ideas of reference and meaning.

2.5 Russell – Introduction to his thought

Russell developed Gottlob Frege's predicate calculus and reformed Frege's notation making it more accessible to logicians. While Russell's principal work was on the foundations of mathematics (Russell & Whitehead, 1910-1913; Russell, 2010b), Russell was greatly concerned, like Frege, to place language upon sound logical foundations and so attempted to develop a perfect logical language, based on the predicate calculus, which would be capable of being used to give a clear description of the world as revealed to us by modern science. This task, of creating a perfect language, was necessary to enable a clear scientific description of the world to be given – which after all is the principal function of science. Ordinary language was imperfect and contained logical and grammatical ambiguities and other problems (for example not every sentence of ordinary language was a descriptive sentence). While Russell agreed with a great deal that Frege had written, he felt that the predicate calculus could be developed much more rigorously and he notoriously uncovered a paradox in Frege's logical system which Russell (2010b) stated could be avoided.[8] Apart from this logical work, Russell disagreed with Frege in number of ways as shall be shown. He considered that reference could not be achieved by a definite description. This was for two reasons.

The first reason is that, on a proper understanding, a definite description is a quantifier (a "how many?" term) which at best tells us something about an unidentified variable. Strictly, a definite description does not point to or identify an object but merely tells us what is true of that object, if it exists at all.

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[8] The purpose of this study is partly to investigate a causal theory of reference and ultimately of meaning. As a result the logical aspects of Russell's work, and in particular the paradox that he noted in Frege's writings, will not be further pursued.

The second reason is that reference must be obtained by some sort of "acquaintance" with, or knowledge of, the thing referred to. Russell believed that this acquaintance could only be derived through the senses. The approach was strongly empirical in that it is the objects in the external world which cause our senses to have the sensations they do. Russell therefore proposed a causal and empirical theory of reference and meaning. However, Russell, did not think that we could ever say that the object in the world had any particular attribute as all we ever have conscious access to, according to him, is the sensation in our minds, the sense-data, and so we cannot perceive the thing itself. This perceptual scepticism could effectively lock Russell into a sensory prison and makes further access to the external real world impossible. In *My View of the World*, Russell (1959) states:

> "And, if the location of events in physical space-time is to be effected, as I maintain, by causal relations, then your percept, which comes after events in the eye and optic nerve leading to the brain, must be located in the brain … What I maintain is that we *can* witness or observe what goes on in our heads, and that we cannot witness or observe anything else at all … We may define a 'mind' as a collection of events connected with each other by memory chains backwards and forwards. We know about one such collection of events – namely, that constituting ourself – more intimately and directly than we know about anything else in the world. In regard to what happens to ourself, we know not only abstract logical structures, but also qualities – by which I mean what characterizes sounds as opposed to colours, or red as opposed to green. This is the sort of thing that we cannot know where the physical world is concerned." (p. 19).

This is an erroneous view of perception as Searle and others have pointed out (Searle, 2015). Having the image or representation of the thing in one's mind just <u>is</u> seeing the thing. We are not looking at an image. We are looking at the thing, experiencing the thing. Russell regards the experience of seeing as the object of the awareness, but the experience and the seeing of the object are

one and the same. The image is the way, the means by which we see the thing. What this study takes from this discussion is that, due to this error, Russell frequently ends up with two consequences of devastating effect: First, all his perceptions and thinking take place internally within his head and there is no access to the external world, the existence and structures of which are always no more than hypothetical[9]; and Second, there is no access to other minds.[10] Russell is thrown into a state of solipsism from which he cannot escape. And this solipsism makes it difficult, if not impossible, to see how the linguistically necessary objective agreement on meaning can ever come about. Everything is far too private for language ever to get started.

However, though Russell makes this error much of the time, he does at times realise that we must be, and are, aware of the external real world as the cause of our knowledge of it, even if we are unable to express that knowledge propositionally. This Russell terms "knowledge by Acquaintance." For example Russell says:

> "I say that I am acquainted with an object when I have a direct cognitive relation to that object, i.e., when I am directly aware of the object itself. When I speak of a cognitive relation here, I do not mean the sort of relation which constitutes judgment, but the sort which constitutes presentation. In fact, I think the relation of subject and object which I call acquaintance is simply the converse of the relation of object and subject which constitutes presentation. That is, to say that S has acquaintance with O is essentially the same thing as to say that O is presented to S." (Russell, 1910-11, p. 108).

And again with more detail about the difference between knowledge by Description and Knowledge by Acquaintance:

> "Knowledge of things, when it is of the kind we call knowledge by acquaintance, is essentially simpler than any knowledge of truths, and logically independent of knowledge of truths, though it would be rash to

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[9] Ultimately this error leads to the odd situation that all we can ever talk about is ideas and their relation to other ideas. Such a view ultimately has no purchase on anything in the real world.
[10] Known as "solipsism."

assume that human beings ever, in fact, have acquaintance with things without at the same time knowing some truth about them" (Russell, 1912, p. 72).

Russell's general thought on language was influential on Wittgenstein's *Tractatus* Logico-philosophicus (Wittgenstein, 1922) which we shall look at in Chapter Three. A good overview of the general problems of language was given by Russell in his Introduction to Wittgenstein's *Tractatus*:

> "There are various problems as regards language. First, there is the problem what actually occurs in our minds when we use language with the intention of meaning something by it; this problem belongs to psychology. Secondly, there is the problem as to what is the relation subsisting between thoughts, words or sentences, and that which they refer to or mean; this problem belongs to epistemology. Thirdly, there is the problem of using sentences so as to convey truth rather than falsehood; this belongs to the special sciences dealing with the subject-matter of the sentences in question. Fourthly, there is the question: what relation must one fact (such as a sentence) have to another in order to be capable of being a symbol for that other? This last is a logical question …" (p. 7).

The second and third problems given by Russell above are closely related. The idea of reference (Russell's theory of meaning is also a referential one) leads us to question, what is it to which words refer and how is it that that reference is to be achieved? Russell holds that it is things in the world revealed by science that are being referred to. It is only when descriptive sentences validly refer to things in the world (the things about which the sentences comment) and accurately give descriptions of the relations or attributes those things in the world have, that those descriptive sentences can be said to have truth values. This is also a strongly realist, but also empiricist stance which leads us to the picture of the world held by Russell, a picture known as Logical Atomism. However, first, there are two other important and related aspects of reference which have to be discussed. The first aspect is the true nature of definite

descriptions and the second is Russell's theory of the distinction between knowledge by description and knowledge by acquaintance.

2.6 Russell's criticism of definite descriptions – 'On Denoting'

Russell (1905) noticed that while proper names and pronouns normally referred to things in the world, there were some difficulties with the idea that all and only proper names and pronouns had this referring capacity. The difficulty was with definite descriptions which, though not proper names or pronouns, the natural referring terms, also appeared to be capable of being used to refer to things in the world.

Expressions like "Pegasus" or "The present king of France is bald" offended Russell. They both appeared to refer to entities in the world but they clearly did not refer to anything extant. The first term fails because it refers to a fictional object. The second term, a definite description, fails because it appears to refer to something which could but does not exist. Meinong had suggested that entities like Pegasus or the present King of France in some sense must exist (Meinong 1904). He said they appeared to inhabit a third realm like Frege's thoughts. Russell disagreed. He had a robust sense of reality. For him there really was only one realm – the real world. He formed the view that fictional expressions and definite descriptions had the appearance of referring when in reality they do not. Though neither of these expressions, "Pegasus" or "The present king of France", refer to anything in reality, it also could not be said that either is nonsensical. "Pegasus", as a proper name, can be easily dismissed as the idea of this winged horse is obviously a fictional creation of

myth and legend and no such thing as Pegasus does or ever has existed. However, "The present King of France", a definite description, is more difficult to dismiss. A proposition which uses the definite description as a referent is not obviously true or false. Russell realised that the problem must be one of logical form which beguiles us into thinking that a meaningful expression must also convey an ontological commitment.

Russell solved the problem using Frege's predicate logic. On a proper logical construction, the logical form of the expression "The present King of France is bald" has the logical structure:

$$\exists x\ (Fx\ \&\ \forall y\ (Fy \rightarrow x=y)\ \& Gx).$$

That is to say, where we take "F" to abbreviate the predicate "… is a King of France" and "G" to abbreviate "… is bald", the expression resolves into:

i.   There is at least one King of France,

ii. There is at most one King of France,

iii. Anything that is a King of France is also bald.

Using this analysis we can see that (i) is false. There is no such entity as "the King of France". The expression is an empty variable, a place holder in logical notation. Nothing is referred to, a definite description does not refer to anything. Definite descriptions are not denoting expressions, even though the ordinary English language expression gives them the appearance of referring and indeed they may be placed in the subject position in a well-formed sentence. They are instead disguised predicates. Russell considered that ordinary English like this is logically unclear and not fit for scientific purposes. A perfect language would approach the matter using a fully worked out logical analysis in the manner of the above example. This means that complex expressions must be

broken down into the simpler ones that make them up and that before we can

consider the truth or falsity and hence the meaning of such expressions. But we

should notice the nature of the ambiguity which ordinary language has

introduced. What looks like a definite description, only looks like this because in

ordinary language the description is placed into the position of the referring

term. It looks like a referring term but on a proper logical construction it is

merely a quantifier term. It says how many things, if they exist, will satisfy the

description when reframed as a predicate (iii).

It follows that definite descriptions are one example of where ordinary

language fails to meet the exacting standards of an ideal logical language.

Russell considered that in giving an acceptable description of the world as

revealed to us by science, it would be necessary to do so in a logically perfect

language, or at least in an idealised form of English from which such logical

problems had been expunged by full logical analysis.[11]

Russell's way of dealing with definite descriptions appears at first to

resolve the difficulties of covert ontological commitments. However, further

difficulties, not completely unnoticed by Russell, arise when it is realised that

proper names themselves are often obscure entities only capable of being

given sense when related to covert definite descriptions. This is sometimes

referred to as the "Descriptive theory of proper names". One analysis of this is

given by Saul Kripke in 'Naming and Necessity' (1980) where Kripke considers

the case of Moses:

> "If 'Moses' means 'the man who did such and such' then, if no-one
> did such and such, Moses didn't exist; and maybe 'no-one did such

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[11] There are several other problems with ordinary language too. For example, the context in which a proposition is used can obscure its meaning, and individual signs may be used to mean different things at different times.

and such' is even an analysis of 'Moses didn't exist'. But if the description is used to fix a reference rigidly, then it's clear that that is not what is meant by 'Moses didn't exist', because we can ask, if we speak of a counterfactual case where no-one did indeed do such and such, say, lead the Israelites out of Egypt, does it follow that, in such a situation, Moses wouldn't have existed? It would seem not. … 'Moses exists' means something different from 'the existence and uniqueness conditions of a certain description are fulfilled'; and therefore this does not give an analysis of the singular existential statement after all." (p.58f).

Searle, who we shall consider in greater detail later in this thesis, has suggested (1958) that in a case where the meaning of a proper name is given by a set of descriptive elements of this sort, it does not affect the reference and meaning of the proper name if some of these elements turns out to be false, provided that <u>some</u> of the bundle of elements remains to support the meaning of the proper name (p. 162-174). This is referred to as the Cluster Theory of Proper Names. But Kripke's criticism, which again we shall see in greater detail later in this thesis, is more radical still and asks if the meaning and reference of a proper name could not still be possible even if <u>all</u> of the propositions in the set of supporting descriptions turns out to be false? His answer is that there can still be valid reference where there was an initial valid use of the proper name (a "baptism" or a "dubbing") and the present use is causally related to the initial use by means of a "chain of communication". That is to say that my current use of the proper name is causally related to the original use even where the cluster of descriptions which once seemed to support the meaning have all subsequently been proved untrue (Kripke, 1980, pp. 93-97). There are a number of complications which both Searle and Kripke give rise to which shall be examined later. However, it can now be seen that there are two types of theory of reference and meaning being proffered both of which necessitate further examination: (1) a theory of reference and meaning achieved by means

of description or descriptions; and (2) a causal theory of reference and meaning. It is worth bearing this pair in mind as we proceed.

Russell, as we have seen, rejected the idea of description as giving the meaning of a referent. He regarded definite descriptions, and presumably other singular terms, as quantifier expressions and nothing more. His reasons are made clear in his discussion of acquaintance and description to which we shall now turn.

2.7 Russell – On acquaintance and description

Russell's paper *On Denoting* (1905), whilst primarily concerned with discussing definite descriptions, sets out his early analysis of two sources of knowledge which he describes as "acquaintance" and "knowledge about." Due to his strong empiricism, Russell regards knowledge by acquaintance as being the primary source of knowledge. He says there are two sorts of knowledge by acquaintance. The first sort is acquaintance of perception in which we are acquainted with the objects of our perception, presumably knowledge of our sense data rather than acquaintance with objects which are merely presented to us in sense data. Russell's thought here is somewhat unclear. The second sort of knowledge is acquaintance by thought in which we become acquainted with objects of a more abstract sort as these are presented before the mind. Both of these are to be distinguished from "knowledge about" which he says are given to us by denoting phrases. It appears therefore that quite apart from there being only two sorts of knowledge, there are in fact three types of knowledge: (1) knowledge of our sense data and their qualia (what they are like); (2)

knowledge of our thoughts (which presumably indicates the mentally judged

unifications of our perceptual sense data); and (3) knowledge given to us in

denoting phrases. What are denoting phrases? These are phrases which point

or refer to an abstract object derived less directly from types of knowledge (1)

and (2) above. Russell gives the example of the centre of mass of the solar

system which must be at some definite point but of which we can have no

perceptual knowledge. However, we are in a position to affirm a number of

propositions about it. He asserts that although this third type of abstract

knowledge can be grasped, it is ultimately dependent upon perception or

perceptions of some sort by an individual or individuals and at some or more

time or times. On this point he says:

> "All thinking has to start from acquaintance but succeeds in thinking
> *about* many things with which we have no acquaintance." (p. 479).

Immediately prior to the above quotation, Russell states his solipsistic

conclusion that:

> "To take a very important instance: there seems no reason to believe
> that we are ever acquainted with other people's minds, seeing that these
> are never directly perceived; hence what we know about them is
> obtained through denoting" (p. 479).

Accordingly, it appears that a denoting phrase is to be regarded as a derived

definite description and we have already seen that Russell later analyses these

as quantifier expressions which cannot refer but are merely variables standing

for objects which, if they exist, have certain characteristics. What is of interest

at this stage is that he considers that denoting phrases "express a meaning and

denote a denotation." That is to say that Frege's distinction between Sense and

Reference is being approved and tied to Russell's empirical doctrine insisting

that all knowledge, in a Humean manner, derives ultimately from perceptual experience.

Russell's mature thought on acquaintance is expressed in his article *'Knowledge by acquaintance and knowledge by description' (*Russell, 1910-1911) in which Russell clarifies his earlier thoughts on perceptual knowledge. He writes:

> "I say that I am acquainted with an object when I have a direct cognitive relation to that object, i.e. when I am directly aware of the object itself. When I speak of a cognitive relation here, I do not mean the sort of relation which constitutes judgement, but the sort which constitutes presentation. In fact, I think the relation of subject and object which I call acquaintance is simply the converse of the relation of object and subject which constitutes presentation." (p. 108).

Russell then proceeds to insist that acquaintance is relational in character and hence that acquaintance is different from mere presentation. Presentation occurs when the object is actually being perceived by the perceiving subject whilst acquaintance is more than this for the subject is acquainted with the object perceived when the object is being perceived and also when, having once had that object presented to him or her, that object is not present before the perceivers mind. However, in both cases the fact that the object was present at the initial perception justifies both the initial perception and the subsequent acquaintance. The nature of knowledge by acquaintance is therefore relational and implies the existence of both object and subject. Russell is clear that the relation aspect must be acknowledged for if it were not, then there is a danger of the errors either of materialism or idealism. Russell says:

> "the word *acquaintance* is designed to emphasize, more than the word *presentation*, the relational character of the fact with which we are concerned. There is, to my mind, a danger that in speaking of

presentations, we may so emphasize the object as to lose sight of the subject. The result of this is either to lead to the view that there is no subject, whence we arrive at materialism; or to lead to the view that what is presented is part of the subject, whence we arrive at idealism, and should arrive at solipsism but for the most desperate contortions … I wish to preserve the dualism of subject and object … because this dualism seems to me a fundamental fact concerning cognition." (p. 109).

Russell proceeds to consider that in judging our immediate sense data we become aware of comparisons and generalities in our perceptions. He describes the immediate objects of perception as awareness of particulars but when we introspect upon our awareness we become aware of universals. He gives the example of the colour yellow and says that in perceiving a yellow object we are aware of the particular hue of yellow whilst in introspection, provided we have perceived a sufficient number of different yellows, then we unite the particular instances and this produces an awareness of universals – the general idea of concept of yellow which we may then use in judgements such as "yellow differs from blue" or "yellow resembles blue less than green does" (p. 111). In this way particular instances of acquaintance can be raised into general concepts which can form the predicate of a proposition. And so in this way we are able to express the general characteristics of an object in a subject-predicate form. Both particulars and universals are objects of direct or less direct perception of which we have acquaintance. But this is not the case for all of our knowledge, since we are able to acquire conceptual knowledge of the world by means of understanding propositions containing universals. In such cases we can describe the knowledge we acquire as "descriptive knowledge" that is knowledge that is not obtained from direct perception but by means of the communication of propositions containing descriptions of objects and using universals. Furthermore, we are, as in the case of the centre of

gravity of the solar system (above), able to form judgements and inferences from propositions and so derive descriptions of objects of an abstract nature for which no direct perceptual knowledge is practical. All that is required is that at some level there must have been perceptual knowledge by acquaintance of the simples from which the abstract knowledge is obtained. Further in making statements using this derived knowledge we may express our concepts in a manner in which there is no reference in the propositions to perceptual knowledge. Nonetheless Russell insists that from an epistemological perspective "all propositions which we can understand must be composed wholly of constituents with which we are acquainted" (p.117). This is a much more carefully analysed version of the "knowledge about" that we saw earlier and it shows that Russell is strongly empiricist in his approach. Russell also shows that, apart from concepts, we are able to make judgements in which we combine several entities. Russell gives various examples which show that by means of substitution, generality, comparison, contrast and by other means we may combine these in various ways. The conclusion of these judgements again is expressible in descriptions but this time of greater complexity. Thus Russell has paved the way for showing that we are able to build abstract ideas at high orders of complexity from the basic simples of perceptual acquaintance which remain at low orders of complexity. Most of our higher order knowledge comprises knowledge by description of the sort that Russell discusses. Russell summarises his conclusions, also referring back to his analysis of definite descriptions, as follows:

> "Our knowledge of physical objects and of other minds is only knowledge by description, the descriptions involved being usually such as involve sense-data. All propositions intelligible to us, whether or not they primarily concern things only known to us by description, are composed

wholly of constituents with which we are acquainted, for a constituent with which we are not acquainted is unintelligible to us. A judgement, we found, is not composed of mental constituents called "ideas," but consists of a complex whose constituents are a mind and certain objects, particulars or universals. … When a judgement is rightly analysed, the objects which are constituents of it must all be objects with which the mind which is a constituent of it is acquainted. … This leads us to the view (recommended also on purely logical grounds) that when we say "the author of Marmion was the author of Waverley," Scott himself is not a constituent of our judgement, and that the judgement cannot be explained by saying that it affirms identity of denotation with diversity of connotation. It also, plainly, does not assert identity of meaning. Such judgements, therefore, can only be analysed by breaking up the descriptive phrases, introducing a variable, and making propositional functions the ultimate subjects." (p.128).

In this way it can be seen that Russell's logical view of reference and his empirical commitments are intimately connected. In short, because perception is ultimately required for any judgement to be intelligible, and because judgements in the form of propositions have a subject and predicate form, our knowledge of reference and meaning both ultimately derive from the causal perceptual effects that objects in the world have upon our minds prior to our forming concepts and judgements about them. This can be seen as the start of the main argument of this thesis that a causal theory of reference and meaning is both tenable and is therefore likely to be illuminating of our capacities to learn and of our capacities to teach. However Russell did not make connections directly from his logical and empirical work to education.[12]

2.8 Russell – Analysis and contribution to this study

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[12] This is not to say that Russell did not have opinions on education which he stated in a number of articles of a somewhat political nature.

From our discussion of Russell and his thought, it can be seen that Russell takes up various ideas from Frege and notably the ideas of Sense and Reference which are reframed as Connotation and Denotation, that is to say as meaning and reference. Russell's views are strongly Realist but also Empiricist. All knowledge ultimately derives from simple perceptions caused by the effect of objects on our senses and producing sense data. This is not the end of the story, as the data of perception upon reflection in a mind can be built up into concepts and judgements, the intelligibility of which depends on their being built from components ultimately traceable back to perceptual roots. Thus complex and abstract concepts and judgements in which patterns are noted are built up from simples of perception expressible in language in descriptive propositions of subject predicate form, where the subject refers to an object and the predicate says something descriptive about it. In concepts definite descriptions are descriptions purportedly true of a variable and so placed into the subject position in a proposition. These however fail to refer to any referent. They simply state what might be true of an object. The role of knowledge is to produce descriptive propositions about the world. This is for both simple and abstract judgements and is the nature of scientific knowledge. There is little if any discussion of the importance of objectivity which so interested Frege. A proper understanding of perception is that it is reflexive in nature in that it involves both perceived object and perceiving subject standing in a relation to each other. A proper understanding of this avoids a descent into the errors of either materialism or idealism. Russell did not build a theory of learning or teaching from his logical, linguistic or empirical theories however he did refine the ideas first put forward by Frege. Russell shows us in embryo that perception

is a causal process and so are the concepts of reference and meaning derived from those perceptual foundations.

2.9 Prior – the Runabout Inference-Ticket

We have observed that Russell in *Principia Mathematica* (Russell & Whitehead, 1910-1913) provided arguments to establish the origins of logic and mathematics on the basis of set theory. It is worth at this stage including Prior's paper 'The Runabout Inference-Ticket' (1960) in which Prior sets out to test whether we have derived the correct number of axioms of logical inference from our descriptive language. His view is that we learn the axioms of logic from the inferences we use in descriptive sentences in accordance with Wittgenstein's statement (Wittgenstein, 1953, para. 92) that the meaning of an expression is its use. He does not consider that we learn the axioms from an analysis of truth tables.

In his paper Prior examines the logical connectives and invites the reader to consider an analysis based on rules of Introduction and Elimination (being consistent with Wittgenstein's dictum). From an introduction rule that "*P v Q*" where *P* is true and where *Q* is true, he shows that this implies the elimination rules that "*P v Q -> P*" is true and that "*P v Q -> Q*" is true (in the sense of Analytically Valid). These are the normal inferences that we use in our descriptive language ("logical harmony"). There is nothing more to know about the meaning of "and" than we can know from these inferences.

However, Prior invites us to consider a conjunction "tonk" which would allow us to derive any argument *P* or *Q* from the conjunction of *P tonk Q*. "Tonk"

is therefore a simple additional axiom to the rules of logic. Unfortunately when we replace *P* or *Q* with an argument containing the conjunction "and" we find that we can infer the truth of both *P* and *Q* from an introduction rule *P tonk Q*. He writes:

> "I want now to draw attention to a point not generally noticed, namely that in this sense of 'analytically valid' any statement whatever may be inferred, in an analytically valid way, from any other. '2 and 2 are 5', for instances, from '2 and 2 are 4'. It is done in two steps, thus:
>> 2 and 2 are 4.
>> Therefore, 2 and 2 are 4 tonk 2 and 2 are 5.
>> Therefore, 2 and 2 are 5.
> There may well be readers who have not previously encountered this conjunction 'tonk', it being a comparatively recent addition to the language; but it is the simplest matter in the world to explain what it means. Its meaning is completely given by the rules that (i) from any statement *P* we can infer any statement formed by joining *P* to any statement *Q* by 'tonk' (which compound statement we hereafter describe as 'the statement *P-tonk-Q*'), and that (ii) from any 'contonktive' statements *P-tonk-Q* we can infer the contained statement *Q*" (p. 38-39).

What Prior is doing here is showing that by adding a further axiom of inference to those in current use, we are able to prove both the statement *P* and its contradictory statement *~P*. Likewise any reduction in the number of rules of inference that we use will have the effect of preventing us from drawing any inferences altogether. That is to say, we have the correct number of logical rules of inference which are derivable from our use of descriptive statements. We cannot have any more or any fewer.

For our purposes, Prior's paper establishes that our linguistic use of descriptive sentences is sufficient to enable us to infer all the axioms of logic therefrom. Nothing more is required. Similar criteria apply to the axioms of mathematic as Russell and Whitehead have shown.

2.10 Conclusions to Chapter Two

We have now described in some detail the importance of Frege and Russell for any theory of reference and meaning. The foundations of reference are described by Frege as descriptions but he is not clear how these are related to the "mode of presentation" of the objects of reference. Frege does not give us a worked through view of meaning other than to declare that it is related to saying something about the referent of a proposition that thereby has a truth value. We should note that meaning in both Frege and Russell is connected with the idea of truth. The referent of a proposition is an object and the predicate of the proposition says something true or false about the object referred to. As a result of the objective nature of the "mode of presentation" the notions of reference and of meaning have an objective character. Language therefore appears to be objective in the sense that it is a pre-existing system of communication in which individuals come to participate. Russell shows that simple perceptions (causally) produced by objects in the world acting upon our senses are reflected upon in the mind and that thereby the occurrence of particulars can be abstracted into universals. More complex propositions can be built by various processes of conceptual analysis and judgement – broadly by noting repeated patterns of perception. Such concepts and judgements may then be placed in the subject position in propositions and enable us to think about objects (which may or may not be extant) in terms of patterns of those objects' perceptual or other properties. Definite descriptions used in this way do not necessarily refer to any object but merely say what is true or false about a variable which may or may not be extant. Complex propositions give us "knowledge about" being knowledge at high orders of complexity. Ultimately, however, all knowledge, if it

is to be intelligible, must be capable of being broken down into perceptual simples. At this stage the conditions for satisfaction for knowledge are the logical ones of truth and falsehood. A descriptive sentence can be a true description of the world or a false description. It either corresponds with what we perceive about the real world or it says something false about it. Conditions of satisfaction introduce the ideas of rightness or wrongness of a statement and so convert a statement from being a mere opinion into a factual statement. At this stage the form of truth is a correspondence between a description and the situation in the world that is described. At a level of abstraction, inferences may be drawn from general statements. The inferences drawn from such collections of propositions are the basis of the rules of logic which Russell derived from set theory. Truth in logic is based on a coherence theory of truth, where truth is analytic.

In the next chapter we shall consider the work of early Wittgenstein who laid out the requirements of a logically perfect language if it is to describe the world.

We now turn to the Initial Questions which we detailed in the Introduction Chapter One of this thesis to see how far we can presently answer them:

1. How far can an understanding of pre-linguistic cognitive functions and linguistic functions be related to knowledge?

Our pre-linguistic and cognitive functions together are responsible for all of our knowledge. In this Chapter we note that our knowledge starts with considering descriptive statements about objects in the world. Reference depends on our being able to recognise objects in the world otherwise we cannot claim the truth of any simple descriptive statement in which a

referent is used to stand for the object. Russell accepts that objects are presented to us but he thinks that this is in a non-descriptive sense. More than that Russell cannot say. Frege also says nothing about this aspect. We need some way of having objects presented to us in a descriptive sense. But that assumes that we can carry out object recognition in the sense of lifting a particular object out from the background environment as presented to our perception. Once we can recognise an object we can certainly say something about it and its mode of presentation in a descriptive sentence. Frege and Russell both develop what we can say in descriptive sentences. Russell derives, and Frege assumes, the axioms of logic and of mathematics from such descriptive sentences. Such descriptive sentences are the foundations of all our knowledge. From the recognition of p and $\sim p$ we can derive logic and from grouping objects with similar characteristics together in sets, as Russell did, we can derive the axioms of arithmetic and mathematics. Grouping in sets allows us to learn to recognise numbers of objects and to count them. So we have (provided we can do object recognition) the basis of all knowledge about the external real world. We start with (i) object recognition, (ii) object identification and re-identification based on the object's perceptual characteristics and so the ability to differentiate objects is derived from this, (iii) by using a symbol (such as a word) in place of the object we can build simple descriptive sentences in language and so talk about and think about objects, (iv) from this the ability to say p and $\sim p$ is given which is the foundation of all logic, (v) grouping objects together enables numbers and counting and is the

basis of all arithmetic and mathematics, (vi) grouping similar objects together also allows us to generalise characteristics and behaviour of objects which is the basis for all abstract knowledge and provides the foundations for science. Our cognitive and linguistic abilities progress from the simple to the more complex in the logical order given in (i) to (vi). In other words, providing we can carry out object recognition, we have the basis of all knowledge of the external world.

2. Do pre-linguistic cognitive and linguistic functions structure our knowledge?

This is adequately dealt with in the answer to question one.

3. How can a knowledge of pre-linguistic cognitive functions and linguistic functions enhance our understanding of education, learning and teaching?

Our knowledge and thought proceeds from the simplest descriptive assertion simples to levels of ever greater complexity as shown in the answer to question one. As this is the way that our cognitive and linguistic functions present us with information, it seems reasonable that this should be reflected in our educational processes and particularly in curricula. Learning will be best achieved by paying attention to the logical order of progression as given in (i) to (vi) in the answer to question one. It seems reasonable that young learners will need to learn about the real and linguistic worlds in the same order. So young learners will first be introduced to objects, then name them (in the sense of applying a symbol to an object), then learn how to describe the objects by their perceptual characteristics, and thereafter making generalities by looking at groups of objects and recognising patterns of descriptive

characteristics which the objects either have in common or which differentiate the objects. This enables generalisation based upon perceptual qualities and is the start of conceptual knowledge. Generalising is a form of pattern recognition. The young learner will learn by grouping objects that numbers exist and so will learn how to count the grouped objects. Thereafter the young learner will be able to learn the logical and mathematical skills necessary for further learning and for life. It appears that linguistic, logical and mathematical skills, being related will develop from simples to more complex in parallel. At this stage in our enquiry there is little more that we can say about learning and teaching. But we can say that, to be effective, teachers must understand the hierarchical nature of knowledge that we have given above. The teacher should also understand the forms of truth involved and the conditions of satisfaction for knowledge. The appropriate methods for acquiring knowledge at the simple level are descriptive. Teachers must introduce subjects at an appropriate level of simplicity for knowledge to be built up via the experience of the learner.

4. How are language and thought related?

At this stage little can be said other than observing that language is a symbolic system for representing the world. The simplest form is the descriptive sentence. It should be noted that our linguistic knowledge is a symbolic system of representing or modelling the world. The world and our models of it are two separate things.

5. What are curiosity, insight and creativity so far as relevant to education? How are they or should they be involved in the educational process?

We have little information at this stage. We shall see later that intuition and insight involve pattern recognition. Intuition is where we recognise patterns that we already know while insight involves recognising (in an instant) new forms of pattern. We shall look at these later in this thesis.

6. Must we understand explanations of society and culture in terms of narrative?

At this stage nothing can be said.

7. How does narrative illuminate the educational process?

At this stage nothing can be said.

8. How are power relations related to the educational process?

At this stage nothing can be said.

9. How can we enhance motivation in education?

At this stage nothing can be said.

10. What are the conditions of satisfaction (truth/falsehood of linguistic and mathematical assertions, appropriateness or otherwise of generalities and scientific laws and interpretative narratives) for our knowledge? How are these conditions of satisfaction related to the acquisition of knowledge?

At this stage little can be said. Descriptive sentences make an assertion about how things are in the world. They are either true or false based on

correspondence. Grouping collections of descriptions together and the inferences we can draw from these can give rise to logical truth and falsehood based on whether the inferences are valid. The criterion for logical truth is coherence. Nothing can be said about narrative at this stage.

11. Can we state a Theory of Education which summarises our findings concerning the above?

At this stage little can be said.

Chapter Three

Early Wittgenstein and the *Tractatus Logico-Philosophicus*

3.1 Wittgenstein and the *Tractatus*

It is not at all clear what were Wittgenstein's intentions in writing the *Tractatus Logico Philosophicus* (usually referred to as the '*Tractatus*') (Wittgenstein, 1922) (All references to the Tractatus in this chapter are to the 1922 edition except where otherwise stated). This is because the work is extraordinarily obscure both in form and content. It is clear that Wittgenstein had read works by Frege, Schopenhauer and Russell and it is very likely that he considered that he was advancing Russell's ideas. Russell had considered that Wittgenstein would be his successor in two areas: (1) the foundations of logic; and (2) the project of logical atomism.[13] To some extent Wittgenstein's Tractatus can be read as commenting upon these ideas, but it is much more than that. It claims to answer the problems of philosophy. So far as being a commentary by Wittgenstein on these ideas of Russell's, it would be incorrect to think that Wittgenstein agreed with what Russell achieved. And we find that there is some significant disagreement between the two philosophers. In particular, Wittgenstein appears not to agree with Russell that the project of describing the world scientifically involves the creation of a perfect logical language. Rather, Wittgenstein sets himself the task of saying what any language, perfect of otherwise, must be like if it is to be able to describe the world at all. In doing this it seems that Wittgenstein takes a strongly realist view

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[13] Logical atomism (Russell, 2010a) is the view that the world is ultimately capable of being broken down into logical facts or atoms. They are atomic in the sense that the world is composed of them in combination and that they are the smallest units of meaning. The world cannot be broken down further. The principal proponent of logical atomism was Russell who thought that the smallest units of meaning were objects. Wittgenstein differed from him in seeing facts as the smallest units of meaning.

of the world and draws a close parallel between the structure of the world and the structure of any language that is capable of describing it. Wittgenstein's answer to this is to produce a picture theory of language in which objects in the world parallel objects in language and the structure of relationships of objects in the world must have the same logical form as the structure of relationship of objects in language. A descriptive proposition describes a state of affairs of objects in the world describing how they are related spatially. The proposition is true if it correctly describes the state of affairs and is false (albeit possible) if it does not correctly describe the state of affairs. All meaningful propositions of language are therefore possible descriptions of the world and any apparent propositions of language which do not give a picture of the world are pseudo-propositions and as such are strictly without sense albeit that they appear meaningful at first sight. By means of this strict commitment to the picture theory of language, Wittgenstein is therefore able to show that there are limits to what language can meaningfully assert. A particular group of non-descriptive propositions are tautologies and contradictions which Wittgenstein asserts are no more than the expression of the rules of logical inference. Wittgenstein spends some considerable time in showing how the rules of inference can be derived from the simplest forms. To do this he creates truth tables which are an extremely effective and transparent device for showing logical connections and consequences. Like Russell, Wittgenstein considers the nature of the seeing subject and forms the view that solipsism, is inevitable, however, this is a rather different view from that of Russell. Finally, having examined certain particular areas of philosophical debate, Wittgenstein reveals the conclusion that because it is not possible to step back from language and compare it and the world of

facts side by side, as it were, certain consequences follow. One of these consequences is that at times language cannot state but can merely show (internally) certain features of the world. Another consequence of much greater import is that a philosophical discussion of the nature of a picturing language and its ability to describe the world involves the use of non-descriptive propositions and therefore these are themselves without sense. This radical sceptical conclusion if taken at face value would suggest that the Tractatus is ultimately non-sensical. We can only recover from this scepticism if we can accept that they too merely show rather than state truths. Throughout this chapter in our references to the Tractatus this study will use the numbering system that Wittgenstein himself uses.

3.2 The world is everything that is the case

Wittgenstein (1922) opens the Tractatus with the assertion:

> "1. The world is all that is the case.".

This odd statement is not at all clear in meaning. What exactly is Wittgenstein referring to as "the world" and why does Wittgenstein consider that it "is all that is the case." Nor does the meaning of this first assertion become much clearer in the following sentences:

> "1.1 The world is the totality of facts not of things. … 1.2 The world divides into facts. 1.21 Any one can either be the case or not be the case, and everything else remains the same. 2. What is the case, the fact, is the existence of atomic facts. 2.01 An atomic fact is a combination of objects (entities, things)."

It is reasonable to assume that these first sentences are a statement of logical atomism of a form and this is confirmed as we read through the Tractatus.

Nonetheless as a statement of logical atomism this is an odd beginning. For most of us it is very odd to see the world as divided into facts and that the totality of facts is the world, meaning, presumably, that there is nothing else to the world except that it is composed of facts. It would perhaps be more natural to see the world as composed of objects in space rather than facts. However, it should not be forgotten that the main function of the Tractatus is not as a treatise on logical atomism but rather it is a treatise on language and its relation to the world. Accordingly, these odd opening sentences can be read as expressing a view of the world as language sees it (or perhaps as a user of language should see it). This way of looking at the world is non-natural but essential if we are to understand philosophically how sentences in language can describe the world.

We saw in Chapter Two that descriptive sentences in language, the minimum units of meaning in language, have subject / predicate form where the subject of the sentence refers to an object and the predicate says something about that object. Accordingly, if the structure of sentences has this subject / predicate form, then it would be reasonable to look for the same sort of structure in the world. In this way language and world would share something in common. This appears to be Wittgenstein's motive in expressing the world as he does. For, just as a sentence is the minimum unit of meaning in language, so for Wittgenstein a fact must be the minimum unit of structure in the world. Equally, just as a sentence can be broken down into a subject and a predicate, so the fact in the world must be capable of being broken down into constituent objects and the manner in which they are arranged in space (see Morris, 2008,

p. 25). This way of understanding the opening sentences of the Tractatus appears to make sense of the paragraphs 1 to 2.225.

Having set out this parallel in the structure of sentences and world, Wittgenstein confirms this way of analysing sentences and facts:

"2.01 An atomic fact is a combination of objects."

But what exactly are these objects? It appears that they are things in the world arranged in space, whether or not relating in space to other objects:

> "2.0121 It would, so to speak, appear as an accident, when to a thing that could exist alone on its own account, subsequently a state of affairs could be made to fit. If things can occur in atomic facts, this possibility must already lie in them. (A logical entity cannot be merely possible. Logic treats of every possibility, and all possibilities are its facts. Just as we cannot think of spatial objects at all apart from space, so we cannot think of *any* object at all apart from the possibility of its connexion with other things. If I can think of an object in the context of an atomic fact, I cannot think of it apart from the *possibility* of this context. 2.0122 The thing is independent, in so far as it can occur in all *possible* circumstances, but this form of independence is a form of connexion with the atomic fact, a form of dependence. (It is impossible for words to occur in two different ways, alone and in the proposition)."

These two lengthy sentences confirms the view of a parallel between sentence and fact, hence the reference to words at the end of the final sentence.

There are a number of metaphysical commitments contained in this view which Wittgenstein makes explicit: the necessary spatial location of objects, the existence of atomic facts, the contingency of atomic facts, and the essential nature of objects.

Wittgenstein's reference to the necessary spatial location of objects and that language must necessarily reflect this is reminiscent of Kant's a priori intuition of space. In the Critique of Pure Reason, Kant (1950) describes this intuition as follows:

> "By means of the external sense (a property of the mind), we represent to ourselves objects as without us, and these all in space. … Space is

not a conception which has been derived from outward experiences. For, in order that certain sensations may relate to something without me (that is, to something which occupies a different part of space from that in which I am); in like manner, in order that I may represent them not merely as without of and near to each other, but also in separate places, the representation of space must already exist as a foundation. Consequently, the representation of space cannot be borrowed from the relations of external phenomena through experience; but, on the contrary, this external experience is itself only possible through the said antecedent representation. 2. Space then is a necessary representation a priori, which serves for the foundation of all external intuitions." (Transcendental doctrine of elements. Part First. Section I. Of space) (p. 43).

That is to say that the intuition of space is a condition on our experience and so on knowledge of the world – and thus of a fact. Oddly, Wittgenstein (1922) does not consider the other Kantian a priori intuition of time. The clearest and most Kantian expression of this intuition is:

"2.0131 A spatial object must lie in infinite space. (A point in space is an argument place)."

The second metaphysical commitment is to logical atomism, that is, to the view that complex propositions are composed of atomic units of meaning. Descriptive sentences occur at different levels of complexity but all complex sentences can be broken down into simpler ones until, in the manner of atoms of a substance, the most simple sentences are revealed. In exactly the same way, for Wittgenstein, it seems that the facts of the world may also involve various levels of complexity and these too can be broken down into simpler facts and ultimately into atomic facts which are simple combinations of objects (referred to by Ogden in his translation of the Tractatus as "states of affairs.") We have referred to "atomic facts" above and what we understand from this. However, it needs to be said that Wittgenstein does not make it explicit that there are atomic facts and complexes of atomic facts. It seems to be assumed

in the nomenclature: Wittgenstein uses the expression "Tatsache" (which is translated by Ogden as "fact" (in Wittgenstein, 1922)) and contrasts this with "Sachverhalt" (which is translated as "atomic fact.") Pears and McGuinness (Wittgenstein, 2001) translate these terms respectively as "fact" and "state of affairs."

Another metaphysical commitment of this picture involves the contingency of facts. Because complex facts are compositions of simple facts and ultimately of atomic facts, it follows that the complex facts are dependent upon the truth of the simpler atomic units. However, atomic facts are dependent upon nothing. They can exist or not and that is the end of the matter. No inferences from one atomic fact can be made to another. However out of those contingent atomic facts which do exist complex facts can be built by combination in various ways. This is sometimes known as the "combination theory" of facts. For this reason Wittgenstein (1922) states that:

> "2.061 Atomic facts are independent of one another. 2.062 From the existence or non-existences of an atomic fact we cannot infer the existence or non-existences of another."

The combination theory and the radical contingency of facts has a lengthy history in philosophy dating back to Aristotle (see: Aristotle, 1963, 16 a 9ff ; Aristotle, 1987, 430 a 27f ; Aristotle, 1998, 1027b, 1051b). Wittgenstein expresses this in sentence 1.21 which we have already quoted above. Wittgenstein asserts that the nature of the world is that it is composed of contingent atomic facts and nothing else. He says:

> "2.063 The total reality is the world."

The metaphysical nature of objects is more complex. Wittgenstein says that:

> "2.01 An atomic fact is a combination of objects (entities, things)."

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Things, it seems, have qualities some of which may be accidental and some essential. Wittgenstein says:

> "2.011 It is essential to a thing that it can be a constituent part of an atomic fact."

Glossing over the distinction between a "thing" and an "object" ("Ding" and "Gegenstand" in German), Wittgenstein says here that the internal logical properties of an object dictate how it can relate to other objects and hence how it can appear within an atomic fact. Wittgenstein is somewhat obscure about this. Two types of questions are immediately raised. First, what is it that Wittgenstein recognises as an object? He is silent on this issue. Traditionally there are two ways that we might come to recognise an object: (One) that objects in the world have some sort of causal influence upon us which forces their ontological status upon us; or (Two) the recognition of objects is something which we do because our language commits us to objects of this sort. The first moves from world to word, while the second moves from word to world. Either way, we should note that we recognise objects because in some sense they exist for us, for language using creatures like us. We shall examine this in more detail in the next chapters. However, at this stage, if we are to assume that objects exist then it seems to be incumbent on Wittgenstein to explain how we are supposed to recognise and re-recognise an object based presumably upon our perceptions of the world. That is, that we must have some sort of unifying ability to take our sense perceptions and unify the sense data into recognition of a discrete object. The second type of question is what sort of things are the logical properties that Wittgenstein has in mind in the Tractatus? He talks of logical and also internal properties and presumably this

distinguishes them in some way from external properties. Are we to assume that perceptual properties are external? Frequently he uses the word "internal" to refer to what is contained within language and by distinction "external" refers to that which is outside of language. On balance, it may well be that he is using internal of properties of objects to refer to their role in language rather than the effect the properties have on our sense organs. Wittgenstein's failure to give explanations on this issue leads to uncertainty as to his meaning. Wittgenstein does however give several examples of objects with different types of internal logical property:

> "2.0131 A spatial object must lie in infinite space. (A point in space is an argument place.) A speck in a visual field need not be red, but it must have a colour; it has, so to speak, a colour space around it. A tone must have a pitch, the object of a sense of touch a hardness, etc.."

The internal logical properties of these objects differ and no analysis of these differences is offered. Properties enabling recognition and re-recognition do not appear to be the point here. Rather we appear to be talking of perceptual categories in language to which, as language users, we are committed. The first of these examples deals with the spatial location of physical objects in what in language may be intuited to be infinite Euclidian space to which language is therefore committed (we have discussed this above), while the rest involve different ways that the objects are presented to the senses and our commitment in language to different categories of concepts to which these manners of sense presentation commit us. The lack of explanation, example or analysis makes it impossible to say precisely what Wittgenstein had in mind, however, it is likely that he intended to say that there are definite logical structures to our semantic commitments which mirror the way we experience objects in the world. As a result of our logically linguistic commitments, a grammatically well-

formed sentence can be created which is nonsense semantically. Noam

Chomsky gave the example of "Colourless green ideas sleep furiously"

(Chomsky, 1957, p. 15). It clearly makes no sense to combine these words in

this way in this sentence. They commit several category errors. We know from

the nature of ideas that they do not sleep and that they do not have a colour.

Our semantic and other commitments dictate that these concepts cannot be

combined in this way. But this is not otherwise obvious from any particular

sentence which contains them. We seem to have here a set of non-

propositional or pre-propositional commitments, beliefs and so on which derive

from our experience of the world and which are reflected in language by the

categories of meaning of the words and expressions we use. Searle refers to

our having a set of commitments and beliefs, abilities, capacities, skills,

knowhow, cultural and other practices and so on which he calls the

"Background" and that this has to be brought to bear in order that we can fully

understand what is involved in any linguistic statement (Searle, 1983, pp. 141-

159). Searle makes explicit connections between the Background and

Wittgenstein's thought (though to later Wittgenstein) (Searle, 2011). It is

tempting to think that Wittgenstein may have had some embryonic idea of this

sort in mind at this stage. However we conceive of this, it does appear to

involve knowledge of the internal logical properties of the object for Wittgenstein

says:

> "2.0123 If I know an object, then I also know all the possibilities of its
> occurrence in atomic facts. (Every such possibility must lie in the nature
> of the object.) A new possibility cannot subsequently be found. 2.01231
> In order to know an object, I must know not its external but all its internal
> properties."

And what do we learn from this sentence about the difference between external and internal properties? The internal properties are the object's essential logical properties which remain and do not change. The external properties in contrast it would seem are those accidental properties true of the object in the various states of affairs in which it actually occurs.

Having allowed that objects (whatever they are) are recognisable and re-recognisable as objects by us, and that they can occur in atomic facts, we now need to consider the ways in which they are portrayed in atomic facts.

3.3 The Picture theory of meaning

The picture theory of meaning is perhaps the most important theory in the Tractatus. It is a theory of reference and of meaning. The German word is "Bild" which perhaps better means a diagram than a picture. The intention is to show how objects in space are represented in language as existing in logical space. Wittgenstein is here putting forward a form of correspondence theory. Objects in the world are reflected symbolically in language. Their relations of objects in space, a "state of affairs", is a fact, and this correspond to their relations of the objects in language, or, as Wittgenstein puts it, in "logical space". Language is then a picture of a fact, of a state of affairs. Wittgenstein does not state how it comes about that objects in the world and words in the language are connected. The world seems to constrain the forms of language. But how? Presumably some causal mechanism is needed? We are not told.

At 2.12 Wittgenstein examines the manner in which sentences describe the world. From this world we acquire the thought:

> "2.1 We make ourselves pictures of facts. … 2.12 The picture is a model of reality. 2.13 To the objects correspond in the picture the elements of the picture. 2.131 The elements of the picture stand, in the picture, for the objects. 2.14 The picture consists in the fact that its elements are combined with one another in a definite way."

Thus the essence of the picture theory of meaning is expressed in generality. What a picture shows us is the state of affairs which is represented. A picture will have this capability whether it is a picture in language or a picture in any other representative form, including in language. The elements of the picture stand for the objects which exist in the real world and the picture shows diagrammatically (whether pictorially, linguistically or otherwise but always conventionally) how these elements may be related to one another. The state of affairs in the world and the picture share a logical form. A picture is a true picture if its logical form corresponds with the way the things are related to one another in the real world. Otherwise the picture is a false picture. This is a correspondence theory of truth. If the picture represents the state of affairs correctly, then the picture is true. If it represents the state affairs wrongly, then the picture is false:

> "2.223 In order to discover if the picture is true of false we must compare it with reality. 2.224 It cannot be discovered from the picture alone whether it is true or false." "3. The logical picture of the facts is the thought. … 3.01 The totality of true thoughts is a picture of the world."

To be brief, the conventions which dictate how any picture is to be understood are the conventions of logic appropriate to the manner in which the picture is represented. Because a picture is a diagram of a state of affairs, a symbolic picture, it requires to be understood before its truth can be recognised. A picture therefore requires to be interpreted, and to do this it is necessary to understand the conventions, the logic, which dictate how the particular pictorial

form is built up. A linguistic picture (a proposition) must conform to the conventions of logic.

The logic of language, if it is to be capable of representing a state of affairs as a picture must have the capability to do so. This is achieved by means of conventions or rules of logic. Language must have a sufficiency of rules to enable representation to be comprehensive enough. Wittgenstein equates the rules of language with the rules of logic. This is why he regards a picture as a logical picture of a state of affairs. It is the nature of representation that the picture must be understandable and the rules of logic should be sufficient to allow this.

3.4 Proposition and thought

The smallest unit in language which is a picture of the world is a sentence. Of course a sentence will differ from language to language. The Tractatus shows this to be the case since it was written in German but it usually is published with an English translation side by side. The sentences in language are different. But their meaning is the same (or at least should be so). Philosophers deal with this problem by referring to the meaning of a sentence as a "proposition." A proposition should have the same meaning no matter into which language it is translated.

The proposition is a basic picture of the state of affairs. Just as the state of affairs is a fact, so the proposition is the expression of a fact. Propositions like any picture therefore have a sense. Wittgenstein says that they *show* their sense. This is appropriate because a picture shows or depicts a state of affairs.

Language is the same. It shows its sense. A proposition, if it is not a tautology, will show its sense. It will say how things are in the world. Tautologies are propositions which merely have a sense but do not make any statement about how the world is. Wittgenstein says that

> "6.1 The propositions of logic are tautologies. 6.11 The propositions of logic therefore say nothing. (They are the analytical propositions.)".

A proposition will be the meaning of a sentence as it is understood by a person who reads the sentence in language. If a person reads an English sentence, and is a speaker of English, he understands the meaning of the sentence. Another person reads a German sentence with the same meaning as the English one. The person who reads the German sentence, if he is a German speaker, understands its meaning. Both sentences express the same proposition. Both people understand the same thing. They understand the same proposition. The meaning engendered in both is the same. The proposition of both sentences is the same. The meaning and the proposition are the same. The proposition is the way in which we think about states of affairs represented in sentences of a language. Or to put it another way, the sentence is the expression of the thought in language. A thought and the sentence which expresses it have the same logic. They are logically equivalent. It follows from this that we cannot think something that we cannot express in language. The two are equivalent. Wittgenstein states:

> "3.1 In the proposition the thought is expressed perceptibly through the senses. 3.11 We use the sensibly perceptible sign (sound or written sign, etc.) as a projection of the possible state of affairs. The method of projection is the thinking of the sense of the proposition. …"

In this way, Wittgenstein shows how the world, understood as a set of factual relations among objects, can be represented conventionally in pictorial form

and how this becomes a thought which is capable of expression verbally or in writing. The enormously powerful compositional and generative power of language enables us to think and express propositions capable of showing how certain things may exist in the world and how they may be related to each other. Language does not, however, provide us with truth. For that we need to compare the proposition with the state of affairs in the world it sets out to depict. There is no suggestion in the Tractatus that we may only use a logically perfect language to make pictures of the world. Wittgenstein says:

> "5.5563 All propositions of our colloquial language are actually, just as they are, logically completely in order. …".

He says this to refute Russell's view that ordinary language is not sufficiently precise to be capable of expressing scientific knowledge clearly. Russell thought that we needed a more perfect language to express scientific truths. A perfect language for Russell is perfect in terms of its logic. For example Russell (2010a) says:

> "In a logically perfect language the words in a proposition would correspond one by one with the components of the corresponding fact … In a logically perfect language, there will be one word and no more for every simple object, and everything that is not simple will be expressed by a combination of words … A language of that sort … will show at a glance the logical structure of the facts asserted or denied. The language that is set forth in *Principia Mathematica* … aims at being that sort of language that, if you add a vocabulary, would be a logically perfect language. Actual languages are not logically perfect in this sense, and they cannot possibly be, if they are to serve the purposes of daily life." (p. 25).

It is clear that Wittgenstein will have none of this. This is one feature of Wittgenstein's thought that is continuous with his later thought. The idea of a logically perfect language has, however, continued to make occasional appearances to this day. Nonetheless, language, even everyday language, contains limits imposed by the conventions of logic:

> "3.02 The thought contains the possibility of the state of affairs which it thinks. What is thinkable is also possible. 3.021 We cannot think anything unlogical, for otherwise we should have to think unlogically. … 3.032 To present in language anything which "contradicts logic" is impossible as in geometry to present by its co-ordinates a figure which contradicts the laws of space; or to give the co-ordinates of a point which does not exist."

But it is quite possible for language to confuse us:

> "4.002 Man possesses the capacity of constructing languages, in which every sense can be expressed, without having an idea how and what each word means – just as one speaks without knowing how the single sounds are produced. Colloquial language is part of the human organism and is not less complicated than it. … Language disguises the thought; so that from the external form of the clothes one cannot infer the form of the thought they clothe, because the external form of the clothes is constructed with quite another object than to let the form of the body be recognized. The silent adjustments to understand colloquial language are enormously complicated."

There is therefore nothing logically imperfect about colloquial speech. This is because it contains the same rules of logic as a perfect logical language would. That logic is a factor of the logic of the world plus the logic of representation of the world in symbolic form. Nevertheless it is clear that Wittgenstein continued to give detailed thought to the ambiguities of colloquial speech. The cause of the ambiguities are a product of the way that it is expressed or "clothed" as Wittgenstein states it. It is part of our human biology that we create and use symbols to express and think about the world. Spoken language is a series of conventional verbalised sounds. Written language is a series of conventional marks on paper (or on a computer screen). It is partly because of these clothes and the constraints they put on us that some of the ambiguities arise (as in Russell's example of using one word to mean various things).

3.5 Logic and Truth in the Tractatus

We have seen that Wittgenstein asserts that logic is involved in language. That logic comes from the logic of the world and from the logic used in the construction of languages. The former logic makes it impossible to think or say those things that are impossible. The latter logic allows us to express our thoughts symbolically. Tautologies and contradictions are propositions that contain no description of a state of affairs in the world. They are technically meaningless as they present no picture of a state of affairs. Nevertheless they illustrate the logic of language and allow us to identify the inferences which we use in language. To clarify the logic of language, Wittgenstein provides a new method for showing where propositions of logic are tautologies or contradictions. He does this by using truth tables. He concludes:

> "4.462 Tautology and contradiction are not pictures of the reality. They present no possible state of affairs. For the one allows every possible state of affairs, the other none. In the tautology the conditions of agreement with the world – the presenting relations – cancel one another, so that it stands in no presenting relation to reality."
> Nevertheless, tautologies are important in that they enable language to express the extent of all logical space.

Wittgenstein does not see logical operators as part of the picturing relationship. Logical operators are used to operate on the picture but they are not themselves part of the picture. They do not represent the world. Searle explains this:

> "Wittgenstein thought that words like 'not' and 'and' and 'or' and 'if', the so called logical constants, were not actually part of the picture relationship. He says 'My fundamental thought is that the logical constants do not represent.' He thought of these logical words as just ways we have of stringing pictures together, but they aren't themselves part of any picture. And that's not so unrealistic if you think about it. For example, across the street from my house in Berkeley is a small park. And posted in the park is a picture of a dog with a red line drawn through it. Now notice that we quite effortlessly understand the red line in a

different way from the way we understand the picture of the dog. We know the picture is not supposed to depict dogs that have a red stripe painted on them. Rather, the line is a negation sign. The whole sign means 'No Dogs'. So the sign in the park is really a Wittgensteinian sort of picture, at least in the sense that the 'not' symbol is used to operate on the picture but is not itself part of the picture." (Magee, 1988, pp. 324-325).

Wittgenstein used the Truth Table method to analyse the logical constants and to show that the axioms of logic are derivable in full from the way that we use language and make inferences. It follows from this that we learn the principles of logic from the way we conventionally construct descriptions of the world in language. It is not the purpose of this thesis to show how the axioms of logic are derived from descriptive sentences but only to show that this is the order in which our knowledge of logic flows – as something which we learn as part of the learning about how we go about describing situations in the world. Descriptive sentences come first. Our analysis of logic comes from our recognition of the principles of inference that we use in language. The axioms of logic are abstracted from countless examples of descriptions which contain them.

3.6 Paradox in the Tractatus

Despite Wittgenstein's very careful and measured analytical approach to the subjects which he covers in the Tractatus – and it cannot seriously be suggested that he is not meticulous in analysing and elucidating the problems of philosophy to which he refers, there is one particular sentence which is utterly paradoxical and which, as a result, has caused a division among

Wittgenstein scholars and spawned an enormous literature. That sentence, the penultimate sentence in the Tractatus, is 6.54 which reads:

> "6.54 My propositions are elucidatory in this way: he who understands me finally recognises them as senseless, when he has climbed out through them, on them, over them. (He must so to speak throw away the ladder, after he has climbed up on it.) He must surmount these propositions; then he sees the world rightly."

If we are to take Wittgenstein literally, then we might feel justly annoyed that we had expended considerable effort in trying to make the best sense of what he has written on all the problems that he analyses and elucidates. However, Wittgenstein's work is to some extent mystical and poetic and so a significant number of scholars take the view, referred to as "the Resolute reading," that there is a way of resolving this paradox. Resolute indicates that there is, despite the paradox, an enduring meaning to be found in the Tractatus (and incidentally the same or a very similar meaning contained in the later writings too), that Wittgenstein's thought has a continuous line running through it. That continuous line of meaning is: that it is not so much what Wittgenstein says that is his primary concern but rather that it is his method of analysis and elucidation which is important. The Tractatus shows its truth rather than says it. That is because all that language can do is depict the world. Early Wittgenstein thought that that was all it could do. It will be recalled that the Tractatus asserts that there are criteria for meaningfulness of sentences. A descriptive sentence is a picture of a fact and a fact shows us the relation between objects in the world in logical space. But Wittgenstein has written in the Tractatus a very large number of carefully numbered sentences most of which are not pictures of facts. They are in effect language talking about itself. They are a form of metalanguage. Such sentences clearly fail to meet the strict criteria for meaningfulness that

Wittgenstein insists in, and so strictly are senseless. We have already seen that Wittgenstein makes a distinction between what can be said and what can merely be *shown.* It follows that Wittgenstein's sentences in the Tractatus are senseless regarding the things that they say. But it does not follow that they cannot *show* us what we need to know. Most resolute reading scholars take the view that what is important in Wittgenstein's Tractatus is that he shows us how he analyses and elucidates the problems with which he deals and that this activity or method of elucidation is the real insight of the Tractatus. James Conant, in his paper 'Wittgenstein's later criticism of the Tractatus' (2006, pp. 172-204), provides a good summary of the Resolute reading and of these insights. Conant describes how a reader of Wittgenstein's works, both early and late, is likely to pass through three levels of understanding before reaching a mature resolution of Wittgenstein's philosophy of language. Conant describes each level of understanding and for each level provides a list of typical insights as greater resolution of the early and later philosophy is reached. Whether or not Conant is successful remains to be seen since Wittgenstein scholars are not unanimous in their approval of the Resolute approach, however, what is of importance is that we should understand philosophy as an activity in which philosophical problems are elucidated and answered, often by means of the dissolving of the original problem, during the philosophical process. Wittgenstein's approach in the Tractatus is therefore a special case of the "say" / "show" dichotomy of propositions.

3.7 Shortcomings of the Tractatus

The Tractatus is an obscurely written volume. Wittgenstein does not provide sufficient explanations or illustrations for what are complex ideas. Nor does he provide examples of what he is asserting. These are shortcomings of expression of his thoughts and as such do not impugn his picture theory of language and thought but simply add unnecessary obscurity.

It is not simply obscurity of expression which might be regarded as a shortcoming. There are a number of other areas in which the Tractatus may be criticised. Despite its very wide philosophical scope, the Tractatus sets out to give a general theory of language and to show how language is used to describe the world. This involves two assumptions. The first is that the function of language is reducible in *all* cases to descriptions of the world. This is incorrect. Description may well be the primary function of language from which other functions stand in contrast (and it has to be admitted that both Frege and Russell made this same assumption) but it is most definitely not the only function of language. Later Wittgenstein and the Ordinary Language philosophers who followed him make this clear. Having said that, description is certainly the main function of language in scientific discourse and so would have been at the forefront of both Frege's and Russell's concerns.

The second and related assumption that Wittgenstein makes is that all language functions in the same way wherever it is used. This justifies the fact that the Tractatus produces one single general theory of language. But again it is by no means clear that language always has to function in the same way. Indeed it has many uses other than description. So Wittgenstein's theory of language and meaning in the Tractatus appears to have weaknesses. His

criteria of meaningfulness is narrow and it has not been established to apply to all sentences of language. Both these weaknesses, the concentration upon descriptions to the exclusion of other uses of language and the monolithic nature of the theory are weaknesses that impugn it. But neither is sufficient to overturn the theory completely. There is no reason why the theory, subject to these weaknesses, should not provide an adequate explanation for descriptive sentences.

Another shortcoming of the Tractatus may be that Wittgenstein does not consider the intuition of time, in the sense of how a sentence is used in a concrete situation. As a result he does not consider the context in which a sentence is uttered. We shall see the importance of this in Chapters Four and Six. As it stands, the Tractatus appears to be restricted in its application to conventional descriptive uses of language. But is it not the uses of language which bring language to life? Notwithstanding this weakness, we do have the phenomenon of standard or contextless conventional uses of language, literary uses such as the uses of language in this thesis are a good example of that. It follows that there is no reason to reject Wittgenstein's picture theory as applicable to such conventional contextless uses.

There are a number of problems with the idea of "picturing." In his explanation of the picture theory of meaning, Wittgenstein describes sentences as picturing objects (plural) in relation to each other in logical space. But this is not always the case by any means. Frequently a descriptive sentence will refer to only one object (the subject of the sentence) and say something about it by means of describing its qualities or behaviour. This shortcoming can still be accommodated within the picture theory, for sentences describing several

objects standing in relation to each other is only one example of how a sentence can picture states of affairs. However, it shows that Wittgenstein had particular sorts of descriptions in mind when writing the Tractatus and this again involves a narrowing of scope. It is likely that this weakness comes about as a result of Wittgenstein being concerned that his picture theory should be able to comment, as he does, upon Russell's dual relation theory of judgement that A's belief that *aRb* cannot be a dual relation between a subject and an object as if it is false then there is nothing in reality corresponding to it. This would render it meaningless. Russell's dual relation theory is described in *'The Problems of Philosophy'* (Russell, 1912, p. 72f). Wittgenstein mentions this at 3.1432 and discusses this at 4.012, 4.122ff. For him *aRb* should be understood as an internal relation expressed within language. This together with the demand that the sentence should in some sense "picture" a state of affairs and that both a positive and a negative situation should be capable of such "pictorial" representation has the consequence that while it is fairly easy to see how a true proposition of the form "the cat sat on the mat" is a picture, it is by no means easy to see how one might picture a conditional sentence of the sort "If the dog will be in the kitchen tomorrow afternoon, then I doubt the cat will be sitting upon the mat." But are these above points weaknesses? It is probably a mistake to take the view, that the picturing relation is "pictorial", as directly analogous to the simple sense of a graphic diagram or picture. Wittgenstein is entitled to say that the conditional sentence example given above just has pictured its possibility in language as it contains all the various relevant bits. Certainly our language is easily capable of expressing complex conditional statements even though we could not represent them in a graphic diagram.

Wittgenstein nowhere suggests the relationship is crudely pictorial and in 4.014

he gives examples of other forms of "picture" which are clearly not pictorial in a

crudely graphic sense:

> "4.014 The gramophone record, the musical thought, the score, the waves of sound, all stand to one another in that pictorial internal relation, which holds between language and the world. To all of them the logical structure is common. … They are in a certain sense one."

Perhaps the biggest problem for the picture theory is that a picture is by itself

not sufficient to convey the meaning but needs interpretation. We need to bring

something to the picture in order to understand it. We will see in Chapter Four

that the later Wittgenstein recognises this point. But there are intimations of this

in the Tractatus. One example is 2.0123 that we seem to have to know the

properties of an object in order to know the possibilities of its occurrence in

atomic facts. But when it is placed in an atomic fact Wittgenstein assumes that

the meaning is clarified. Perhaps the way to understanding this is that

Wittgenstein is, in talking of our knowledge of the properties of an object and

therefore of its possible occurrences in atomic facts, doing so in order to explain

how language users come to be able to construct their sentences in speech

and thought, rather than in interpretation of a stated sentence where we are

shown all that we need to understand the sentence. Thus Wittgenstein is able

to say in 4.022:

> "4.022 The proposition *shows* its sense. The proposition *shows* how things stand, if it is true. And it *says,* that they do so stand."

So we are left with the conclusion that conventional or literary descriptive

language is indeed possible in a "pictorial" manner because there is a

connection of some sort between its parts in the proposition and the portrayed

object or objects in the world and such that proposition and world share the same logical form. Wittgenstein did not state what that connection is or how it comes about. He merely says:

"2.1511 Thus the picture is linked with reality. It reaches up to it."

It could be thought that the connection is one of pure coincidence so that because it works to convey information about the world then we become aware of a connection. But that is not satisfactory. There should perhaps be some causal link between world and proposition. For our purposes, would it not have been possible to state the mechanism of connection with some clarity? Perhaps Wittgenstein considered that the issue of mechanism was a psychological rather than a philosophical one and therefore not relevant to his philosophical purpose. We are not satisfied in eschewing further explanation and so we shall see in the following chapters in this thesis, that the view is taken that the relation between objects in the world and language can be seen as mediated causally. That is to say, that objects in the world, by means of our faculties of sense perception, cause sensory effects upon us and enable us to identify and re-identify the objects and that this ability is at the heart of a causal theory of language. Russell had already formed this view. It is somewhat surprising that Wittgenstein did not address this issue. As it stands, the Tractatus remains the most carefully elucidated theory of connection between world and word and that is why it is included in this thesis. It now falls to us to explain more fully the features of this connection and what its implications are.

Despite the shortcomings of the positions put forward in the Tractatus which we referred to in the previous section, it is clear that Wittgenstein was committed to a realist view of the world. Such a view is consistent with a causal

theory of language which we will argue for in the following chapter. One important feature of the picture theory of meaning is that the meaning of a sentence involves its being a picture of some sort of the objects in the world laid out in logical space. The picture may be true of false. So in the same way as for Frege and Russell, the concept of meaning of the picture is dependent upon the logical notion of truth. A sentence contains a referent (the subject of the sentence) and the predicate which tells us something about the referent. That is to say, in the same way as for Frege and Russell, the semantic value of the referent is a mapping to the object in the world for which it stands, while the semantic value of the predicate is a mapping from that object in the world to a truth value. This appears to be entirely consistent with Wittgenstein's picture theory. In fact Wittgenstein's picture theory provided such a powerful theory of language that it was in a modified form adopted by the Logical Positivists who regarded a meaningful sentence only to exist when we know the facts which would verify it. We shall see when we come to later Wittgenstein that there is another way of explaining meaning which negates the importance of truth, namely the notion of use. For now we may regard Wittgenstein's picture theory of language as a theory of the conventional or literary nature of language, that is to say a theory of language when language is contextless. When sentences are uttered a whole new dimension to meaning is given. It is the argument of this thesis that meaning as use does not negate conventional or literary meaning but, for reasons which will become clear, supplements it.

3.8 Conclusions

So far as education is concerned, it is clearly of importance that we are aware of how language operates and what the limits of language are.

  We now consider how far we have progressed in our research by reviewing the Initial Questions with which this thesis was introduced. In doing this at this point in the thesis, we are not going to reiterate what has been written at the end of Chapter Two. There is no point in mindless repetition. Rather we shall consider what additional contribution has been made in this Chapter:

1. How far can an understanding of pre-linguistic cognitive functions and linguistic functions be related to knowledge?

  It is difficult to say at this stage in the research what pre-linguistic cognitive functions there are and how they are related to knowledge. However, we do observe, as was stated in this chapter, that the faculty of language creation is one of the most important pre-linguistic functions. Without it we would have no language and would not be able to communicate except in the most rudimentary way. The fact that we do construct and use languages, apparently effortlessly, means that this function is strongly embedded in our human nature. It is probably precisely the same function which allows us to learn a language. It is interesting to note that Wittgenstein likens our ability to make pictures in language with our ability to make other kinds of symbolic representation. He talks of pictures and gramophone records. It seems to be hard wired into us to make and interpret symbolic representations. We do these in so many ways. Any time we make a model or diagram or other

representation, we are using this function. Indeed making concepts can be seen as making a model in this sense. The fact that we can understand a model, picture or other representation is the corollary. The fact that we can use a word or other symbol and link this to some object in the world is an astonishing feat in itself. The fact that we can use symbols and manipulate them depends on this initial step.

2. Do pre-linguistic cognitive and linguistic functions structure our knowledge?

The pre-linguistic functions for symbol creation and language construction have a huge bearing upon the structuring of our knowledge. Language is constructed by applying symbols to objects (like a label) and then manipulating the symbols in a language or other symbolic structure. Language is itself a model of the world according to Wittgenstein. It is easy for us to forget this. Descriptive sentences in language are models of reality. We are inclined to think of them *as* reality itself, so closely is the label tied. But language and the sentences of which it is composed are models, they are created symbols in a logical order, which we can use and manipulate in order to think about the world. We need a language in order to think. We need a language in order to structure our knowledge and build our concepts. Our knowledge is, apart from our knowledge by acquaintance of the most rudimentary events, structured in language. Our recollection and memory of knowledge is, again apart from the most rudimentary, structured in language. Our knowledge is therefore almost entirely a symbolic picture of the truths that it contains. Moving to the phenomenon of logic and the axioms of arithmetic and mathematics which are closely allied, these

systems of knowledge are properly to be understood as systems of the implications we can draw from language. They are part of the rules we use in communication. They are part of the construct and derive their validity from the phenomenon of language. To consider these in the abstract is a form of metalanguage and demands some capacity for conceptual thought. It seems that in the learning process, we should first learn to identify objects in the world (however that is to be achieved) and thereafter to describe them in simple descriptive sentences. Only thereafter when we are able to deal with basic conceptual thinking are we able to start to construct knowledge of the rules of logical implication and of number and arithmetic. But all of these capacities are based in pre-linguistic and linguistic capacities.

3. How can a knowledge of pre-linguistic cognitive functions and linguistic functions enhance our understanding of education, learning and teaching?

As mentioned in the answer to Question two above, the process of learning should start with object recognition, then develop to description, and only thereafter develop to basic conceptual study such as of logic and arithmetic. It seems reasonable that this progression should be reflected in the curriculum. So far as teaching is concerned, the teacher should be able to assess how far along this progression the learner has moved and so to deliver to the learner materials to assist the learner in the progression to the next stage or stages. Some way of assisting object recognition, attention to material features of the environment, symbol affixing and using, and basic concept forming would assist the learning process.

4. How are language and thought related?

Wittgenstein is of the view in the Tractatus that thought and language are the same. Sentences in language are only the outward expression of the inner propositions of thought. To think clearly, we should be able to communicate clearly. The better we learn to speak and write, the better will our thinking be.

5. What are curiosity, insight and creativity so far as relevant to education? How are they or should they be involved in the educational process?

We have no information about this at this stage. It is noted that the process of grasping the meaning of a word is a basic ability which language use demands and which is most likely hard-wired into us.

6. Must we understand explanations of society and culture in terms of narrative?

We have no information about this at this stage.

7. How does narrative illuminate the educational process?

We have no information about this at this stage.

8. How are power relations related to the educational process?

We have no information about this at this stage.

9. How can we enhance Motivation in education?

Apart from what was said in the answers to the above questions, we can say little at this stage.

10. What are the conditions of satisfaction (truth/falsehood of linguistic and mathematical assertions, appropriateness or otherwise of generalities and scientific laws and interpretative narratives) for our knowledge?

The conditions for satisfaction of a true descriptive sentence is its correspondence with the reality that it depicts. If there is a correspondence between the situation in the world and the situation depicted in the sentence then it is true. The conditions of satisfaction allow us to build up a body of knowledge made up of true facts about the world, about the way the world is. If there is no such correspondence between the situation in the world and the situation depicted in the sentence then it is false. The conditions for satisfaction are the truth and falsehood of the representation. Truth and falsehood are the conditions of satisfaction for all of logical truth, arithmetic and mathematics. They are the conditions of satisfaction for all analytic statements.

11. Can we state a Theory of Education which summarises our findings concerning the above?

At this stage we have insufficient information to put forward a Theory of Education.

Chapter Four

Later Wittgenstein

4.1 Introduction

Following the publication of the Tractatus, Wittgenstein became increasingly dissatisfied with philosophical work, resigned his position in Cambridge and returned to Vienna where he trained as a primary school teacher and taught very unsuccessfully, it would appear, in a small primary school in the Tyrol. Whilst at times his students appeared captivated by the tasks he devised for them, such as designing a steam engine, in the main Wittgenstein had little patience with the slowness of his students, and this inevitably ultimately involved complaints from the parents. Wittgenstein withdrew from teaching, became a gardener in a monastery for a time, and designed a minimalist house in Vienna for his sister. Finally he was persuaded to return to Cambridge where he returned to the teaching of philosophy, developing a new philosophy of language based on understanding the meaning of a word as a tool with a use in linguistic discourse. In 1953 the Philosophical Investigations was published posthumously (Wittgenstein, 1953). The Philosophical Investigations will be referred to in the references as "PI". Notes of Wittgenstein's Lectures in the period leading up to the Philosophical Investigations were collated together and published as the 'Blue and Brown Books' (Wittgenstein, 1958). The Blue and Brown Books will be referred to in the references as "BB". Other posthumous papers were collated for publication.

4.2 Meaning as Use

There is some continuity between the Tractatus and Wittgenstein's later

thought. Wittgenstein does not reject the Tractatus and its picture theory of

language outright, but he does expend a considerable amount of effort in

reacting to it and criticising it and showing the paucity of its views. Wittgenstein

still sees the problems of philosophy as being created by language but now the

cause is the misuse of language. In the Tractatus one besetting problem for

philosophers was the move from particular observation to a generality, as

though we should be trying to find the essence of an expression or type of

expression or a definition for a word. Such a move is regarded by Wittgenstein

as an illusion which bewitches us. Wittgenstein describes the illusion as follows:

> "92. This finds expression in questions as to the *essence* of language, of
> propositions, of thought. –For if we too in these investigations are trying
> to understand the essence of language – its function, its structure, - yet
> *this* is not what those questions have in view. For they see in the
> essence, not something which already lies open to view and that
> becomes surveyable by a rearrangement, but something that lies
> beneath the surface. Something that lies *within*, which we see when we
> look *into* the thing, and which an analysis digs out. *'The essence lies
> hidden from us.'* : this is the form our problem now assumes. We ask:
> *'What is* language?', *'What is* a proposition?' And the answer to these
> questions is to be given once for all; and independently of all future
> experience. 93. One person might say "A proposition is the most
> ordinary thing in the world" and another: 'A proposition – that's
> something very queer!' – And the latter is unable simply to look and see
> how propositions really work. The forms that we use in expressing
> ourselves about propositions and thought stand in his way. Why do we
> say a proposition is remarkable? On the one hand, because of the
> enormous importance attaching to it. (And that is correct). On the other
> hand this, together with a misunderstanding of the logic of language,
> seduces us into thinking that something extraordinary, something
> unique, must be achieved by propositions. – A *misunderstanding* makes
> it look to us as if a proposition *did* something queer." (PI).

In this way Wittgenstein is rejecting a prescriptive view of language such as he

had given in the Tractatus. There is no overall general scheme for

understanding language that explains the way it works, always and in every

instance. But if we cannot explain the essence of language then what can we do? Philosophical problems still arise. The problem remains how to analyse the role of language in the particular problem that is bewitching us, what it is about the representation of language in the problem which is beguiling us. The choice of "bewitching" is deliberate. Wittgenstein does not want to say that we are wrong in some normative sense of right and wrong, but rather that we are in the *habit* of investing the meaning of a word with some representation or method of interpretation and that this approach can only take us so far as it is an illusion. To see a philosophical problem clearly we need to discard such approaches and look at the problem and the meaning of the expressions afresh. What we need to do is reject the idea that any holistically applicable general solution exists and look to the individual problem situation to see how language in that particular instance is misleading us. We need to describe how we use language in that specific situation and never fall into the temptation of seeking essences or generalities despite our urge to do so. We need to bring back language from grand theories and return it to its original home – the specific way that it is used in the problem situation. This is a practical problem of description of the use of language in its specific context:

> "116. When philosophers use a word – 'knowledge', 'being', 'object', 'I', 'proposition', 'name' – and try and grasp the *essence* of the thing, one must always ask oneself: is the word ever actually used in this way in the language-game which is its original home? – What we do is bring words back from their metaphysical to their everyday use." (PI)

The first step in description is to look at the use of the word in its context, for the meaning of a word is often no more than its use in ordinary language. Ordinary language, ordinary use is the key here as language must be understood as a tool which enables us to undertake and fulfil linguistic tasks in the real world,

the world where we live and move and act. While Russell and Frege thought that the way to understand language was to develop a perfectly logical language and compare this with our uses – use the perfect logical language as a standard to show where ordinary language goes wrong, Wittgenstein in his later works regards ordinary language as the place where we should start and discards the idea of perfect logical languages. In fact they have no place in his later work. Sentences of ordinary language perform essential roles in our ordinary everyday activities. They involve co-ordinating our actions when we perform them, establishing meanings in our and others' minds, conveying information and organising actions in furtherance of the fulfilment of the tasks in hand. They are akin to tools. They allow us to do things collectively we could not otherwise achieve. According to this view of language, it is both social and practical. Wittgenstein is able to say that:

> "43. For a *large* class of cases – though not for all – in which we employ the word "meaning" it can be defined thus: the meaning of a word is its use in the language. And the meaning of a name is sometimes explained by pointing to its bearer." (PI).

Three features in particular should be noted in this. First, the use of the expression "we" shows that meaning is a collective activity carried out by the members of the linguistic community. Second, if the meaning of a word is its use in language, then it should be possible to link the uses of words with the ends or purposes to which the language in which the word is embedded is aimed. That is say what social purposes it achieves. It may even be possible to state what different sorts of purposes may be involved. That is a matter of classification. Third, it is important not to overstate this theory of meaning as use. Wittgenstein does **not** say that the meaning of a word **is** its use in language. That would be to fall back into the beguiling search for essences.

This statement should not be read to mean that the picture theory of the Tractatus is therefore rejected out of hand. For this definition allows that descriptive language can be used to describe the world by means of picturing, only that this is not necessarily the only way of describing. Further, this definition allows that, as we saw in Chapter Two, the reference of a name can very often be understood as pointing or referring to its bearer. There is therefore no need to reject the conclusions as to meaning and reference that we considered in Chapters Two and Three of this study. Only, that if we wish to understand language more fully, and so to solve philosophical problems as they arise, one by one, we need to enlarge our understanding of the role of words to include a much wider range of uses and to examine, in each case, the social role and purposes at which the language used is aimed. That is to say, we need to understand the use of the word in its relevant context.

4.3 Forms of Life and Language Games

The idea of forms of life relates to the idea that words, as we have seen, are tools used to achieve social ends. Tools are never contextless. They are what they are only as means of achieving an end result. And that end is something that we intend to achieve by means of the use of the tool. Wittgenstein expressly refers to the multiplicity of ways we use tools. Wittgenstein says:

> "11. Think of the tools in a tool-box: there is a hammer, pliers, a saw, a screw-driver, a rule, a glue-pot, nails and screws. – The functions of words are as diverse as the functions of these objects. (And in both cases there are similarities). What confuses us is the uniform appearance of words when we hear them spoken or meet them in script or print. For their *application* is not presented to us so clearly. Especially when we are doing philosophy!" (PI).

Wittgenstein draws a similar analogy to handles in the cabin of a locomotive and observes how they may be operated in different ways. It follows that words, as tools, only have meaning in the context of the forms of social life in which they are used. There they are used to do something specific, to achieve some end. The context of the word's use is the key to understanding what the meaning is. Wittgenstein calls these contexts "forms of life" and the interrelated uses of the sets of words in these contexts as "language games." But how are we to understand these expressions?

Wittgenstein is somewhat obscure about the meaning of forms of life. He uses the expression in five places in the Philosophical Investigations:

> "19. It is easy to imagine a language consisting only of orders and reports in battle. –Or a language consisting only of questions and expressions for answering yes and no. And innumerable others. – And to imagine a language means to imagine a form of life. .." (PI).

At paragraph 23 he joins the idea of a language game with the idea of a form of life:

> "23. But how many kinds of sentence are there? Say assertion, question, and command? -There are countless kinds: countless different kinds of use of what we call "symbols," "words," "sentences." And this multiplicity is not something fixed, given once for all; but new types of language, new language-games as we may say, come into existence, and others become obsolete and get forgotten. (We can get a rough picture of this from the changes in mathematics.) Here the term language-game is meant to bring into prominence the fact that the *speaking* of a language is part of an activity or a form of life. …" (PI).

At paragraph 241 he says:

> "241. … It is what human beings *say* that is true and false; and they agree in the *language* they use. That is not agreement in opinions but in form of life." (PI).

At page 174 of Part II:

> "Can only those hope who can talk? Only those who have mastered the use of a language. That is to say, the phenomena of hope are the modes of this complicated form of life. (If a concept refers to a character of

human handwriting, it has no application to beings that do not write.)"
(PI).

And at page 226 of Part II:

"What has to be accepted, the given, is, one could say, forms of life."
(PI).

We mention these five references to "form of life" to show how disparate are their uses. It is clear that Wittgenstein intends us to understand that forms of life are more or less autonomous activities, purposeful activities in which we engage. The range of examples quoted is limited which gives the idea of a form of life a mysterious quality. But we can get an idea what kinds of thing he is talking about. Mathematics is an entire sphere of mental activities. A mathematician may orientate his or her entire life around the interrelated activities. Within mathematics there are countless subdivisions, countless different ways to doing mathematics. Wittgenstein suggests that the subject matter or set of mathematical activities may change and expand or contract over time. From his example in paragraph 23 we can see the close relation of "form of life" as a term used to describe a larger or smaller grouping of interrelated activities engaged in by people. In each of these activities, words are needed as tools in order adequately to think, express and communicate the thoughts of one participant in the activity with others. It is the activity which generates the need for the words which will become used in common by the participants and so will become characteristic of the purposes of the activities in which they are generated and used. That is to say, the meanings of the words in those purposeful activities normalise or set standards of right and wrong use of the words in those *specific* activities. In order to understand the meaning of the words we have to analyse, possibly participate in, or at the very least

understand, from the inside as it were, the activities in which the words are used. Only if we know and understand the activity can we grasp the use and therefore the meaning of the words as tools in those activities. If we do not have the understanding which would enable us to participate in the activity then we cannot come to understand the meaning of the words. This is because forms of life are essentially practical activities, social activities, things that human beings do. This is why a person who cannot write could not understand a character of hand-writing. It is not an activity which he or she carries out or can comprehend. The meaning of a word cannot be understood by a person who does not understand the activity in which it is used.

So forms of life encompass the whole range of purposeful human activity engaged in by human beings. They can be anything practically undertaken by two or more people. Hence Wittgenstein's mysteriousness and lack of examples.

But forms of life also perform a normative role in language. It sets standards for the right and wrong use of a word. It seems that using a word correctly or incorrectly involves conforming or not to the accepted uses of the word within of the form of life. It means knowing the purposes for which the word, as a tool, is needed. Thus the form of life, if it is to be purposefully undertaken by the participants, imposes consistency upon the *use* of the word and hence it imposes consistency upon the *meaning* of the word in that context. That is not to say the same word could not mean something else in another form of life, where it could possibly do something completely unrelated to its use in the first form of life. This gives rise to the phenomenon of lexical ambiguity where one word can mean several things and it is only the context

which reveals the intended meaning. This is likely to be obscured in contextless uses of language (such as in texts) where the reader must use his or her imagination in order to imagine the form of life, or setting, in which the word has its normal use for that setting.

And how does a reader know what is the normal meaning in the imagined form of life? To know this requires the reader to know an extraordinarily large number of background facts. For it is only in an understood context that the use of the word can be known. Wittgenstein recognises the fact that we use a background set of facts. He specifically refers to the background in the notes that came to be published posthumously as 'On Certainty' (Wittgenstein, 1969) as follows:

> "94. But I did not get my picture of the world by satisfying myself of its correctness; nor do I have it because I am satisfied of its correctness. No: it is the inherited background against which I distinguish between true and false." (Wittgenstein, 1969, para. 94)

And again in an illustration of the importance of background in knowing the context and expectations within that context:

> "460. I go to the doctor, and show him my hand and say "This is a hand, not …; I've injured it, etc., etc." Am I only giving him a piece of superfluous information? For example, mightn't one say: supposing the words "This is a hand" *were* a piece of information – how could you bank on his understanding this information? Indeed, if it is open to doubt 'whether this is a hand', why isn't it also open to doubt whether I am a human being who is informing the doctor of this? – But on the other hand one can imagine cases – even if they are very rare ones – where this declaration is not superfluous, or is only superfluous but not absurd. 461. Suppose that I were the doctor and a patient came to me, showed me his hand and said: "This thing that looks like a hand, isn't just a good imitation – it really is a hand" and went on to talk about his injury – should I really take this as a piece of information, even though a superfluous one? Shouldn't I be more likely to consider it nonsense, which admittedly did have the form of a piece of information? For I should say, if this information really were meaningful, how can he be certain of what he says? The background is lacking for it to be information." (Wittgenstein, 1969, paras. 460 and 461).

It seems that to understand the use of the word requires that one understand the context of the word. All of these situations require to be understood. This requires that a vast amount of knowledge has to be acquired before even the simplest of situations is sufficiently laid bare.

Within the form of life concerned, the use of the word must be consistent enough for its use to be capable of being expressed in terms of a rule, a generality that describes the use in its context. It is the consistency of contexts, purposes and word use that Wittgenstein is reflecting in his use of the expression "language game". By this he intends that the activity or form of life is a rule-ordered activity, that is an activity conducted by means of a set of general rules governing the various behaviours of the participants. And this rule-ordered character of activities Wittgenstein likens to games: He does not restrict games to forms of recreation. All activities which are rule-ordered, and which set out to achieve the social purposes to which they are aimed by means of following rules, constitute games in Wittgenstein's thinking.

Wittgenstein is clearer about the meaning of language-games. In paragraph 23 (PI) he gives us a clearer definition of language games and shows us a range of examples. As we have seen above, he says that a language-game is a part of an activity or form of life. It is a game because the activity is rule ordered and it is a language-game because the speaking of a language is a material part of the rule ordered activity. At times it is not clear whether the use of "language-game" is meant to indicate a form of life where language is used, or whether the expression is meant to indicate only that part, those rules, which use the language in the activity. If the expression is synonymous with "form of life" then it would seem that there is no room for

private language-games, for a form of life is a social activity undertaken by two or more persons. Standards of meaning and usage are imposed by the activity jointly undertaken. We shall return to this shortly. First we shall consider what it means to follow a rule. Clearly we should have a good idea of what this is.

4.4 Rules and rule following

It was said above that a form of life is a rule ordered activity, an activity which is carried out by means of a system of interrelated rules. The form of life contains situations in which words are used as tools. It is possible to provide a rule for the use of the words, a rule being a generality expressed in a linguistic formula which governs the way the word is used in its form of life. To use the word correctly means that we adhere to the rules or conventions of the word's usage. That is to say that we follow the rules of usage in the form of life. It might seem a little odd that Wittgenstein seems to be saying that a prescriptive rule governs our use of a word and hence its meaning. And Wittgenstein is indeed not saying that strict adherence to a rule is required, only that the rule is used to give the general use of the word within the activity. The rule need not be strictly prescriptive for it can open up possibilities of slight variation in use. But it must still mean the same or approximately the same as other participants mean by the meaning of the word when they engage in the form of life.

There is another reason why Wittgenstein uses the term "game" in "language-game". For not all games are the same. There are many games that are similar in one or other respect but some are very different. Yet they are all catalogued together by their being games. Wittgenstein gives examples of

games. Some are aimed at competition between teams and others are like

patience where only one person plays at any one time. While all games operate

by means of rules, and the participants follow the rules in carrying out the

game, games come in many different forms, some similar to others in one

respect, and other games being similar to others in other respects. Wittgenstein

uses the expression "family resemblances" to indicate this kind of similarity and

difference, for members of one family may share some characteristics in

common with other members of the family whilst looking very different from yet

other members of the same family in that respect, but having other sorts of

characteristic in common with those they differed from in respect of the first

characteristic. Hence all members of the family will share some characteristics

with some other members whilst they may differ markedly from yet other

members of the same family. Wittgenstein says:

> "66. Consider for example the proceedings that we call "games". I mean board-games, card-games, ball-games, Olympic games, and so on. What is common to them all? –Don't say "There *must* be something common, or they would not be called 'games' " –but *look and see* whether there is anything common to all. –For if you look at them you will not see something that is common to *all*, but similarities, relationships, and a whole series of them at that. To repeat: don't think but look! –Look for example at board-games, with their multifarious relationships. Now pass to card-games; here you find many correspondences with the first group, but many common features drop out and others appear. When we pass next to ball-games, much that is common is retained but much is lost. –Are they all "amusing"? Compare chess with noughts and crosses. Or is there always winning and losing, or competition between players? Think of patience. … And the result of this examination is: we see a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail." (PI).

> "67. I can think of no better expression to characterize these similarities than "family resemblances"; for the various resemblances between members of a family: build, features, colour of eyes, gait, temperament, etc. etc. overlap and criss-cross in the same way. And I shall say: 'games' form a family. …" (PI).

The idea of words having a family resemblance in terms of their uses allows us to see that the same word may be used in one way in one form of life but may be used subtly differently in a connected form of life. As forms of life evolve, it is reasonable to assume that the meanings of words used in them will be likely to change slightly over time, where the original meaning bears a close family resemblance to the later meanings. But at any one time there will be a rule for its use in that form of life, to which reference may be made, governing the use in the form of life. It is always the form of life which drives this development of meaning. The phenomenon of family resemblances gives rise to some difficulties in learning the meaning of a word, even when the use is expressed in a rule. But family resemblance is not the only problem in learning a word or activity by means of using rules. A rule is frequently thought of as providing a standard of rightness or wrongness for usage of a word or conduct of an activity. But Wittgenstein notices that there is a difficulty at the heart of using rules to normalise activities. Indeed he is sceptical about the possibility of doing so. His argument is difficult to follow, but broadly he insists that we cannot follow a rule strictly since every rule is capable of a range of interpretations. There is never one fixed interpretation for any rule. As a result it is not strictly possible to use a rule as a standard of right and wrong for carrying out the activity governed by it. Wittgenstein's argument for this sort of rule scepticism starts at paragraph 185 (PI):

> "185. Let us return to our example (143). Now –judged by the usual criteria the pupil has mastered the series of natural numbers. Next we teach him to write down other series of cardinal numbers and get him to the point of writing down series of the form
> 0, n, 2n, 3n, etc.
> at an order of the form "+n"; so at the order "+1" he writes down the series of natural numbers. –Let us suppose we have done exercises and given him tests up to 1000. Now we get the pupil to continue a series

> (say +2) beyond 1000 –and he writes down 1004, 1008, 1012. We say to him: "Look what you've done!" –He doesn't understand. –He answers: "Yes, isn't it right? I thought that was how I was *meant* to do it." –Or suppose he pointed to the series and said: "But I went on in the same way." –It would now be no use to say: "But can't you see ….?" –and repeat the old examples and explanations. –In such a case we might say, perhaps: It comes naturally to this person to understand our order with our explanations as *we* should understand the order: "Add 2 up to 1000, 4 up to 2000, 6 up to 3000, and so on." …"

What Wittgenstein is saying is that since the pupil learned empirically the activity of adding 2 by means of a finite set of examples and, let us assume for the purposes of Wittgenstein's example, that the set did not involve adding 2 to any numbers above 1000, then, from our learning examples, we know how to add up numbers only in the restricted range of our experience. As soon as we attempt to use the rule outside of the restricted range of these learning examples, we find that we encounter uncertainty and may interpret the rule in different ways, there having been no example of the practice to restrict us in the interpretation of situations over 1000. The pupil in the example is not being disobedient. He is trying to follow the rule. However, since the use over 1000 is outside the range in which he learned the rule, he has interpreted the rule differently. It has to be conceded that if we take the rule "add 2" and use it in the normal sense of adding 2 within the restricted range up to 1000 then we will get precisely the same results within the restricted range as the pupil who interprets the rule to mean "Add 2 up to 1000, 4 up to 2000, 6 up to 3000, and so on." No-one could tell that his interpretation is different from our own if he restricts his usages to sums below 1000. It is only with the addition of numbers above 1000 that the difference in interpretation is encountered. Given that any rule will be learned empirically from a limited range of experiences, it follows that any rule can be interpreted in an infinite number of ways, we can never use a rule as a

standard of instruction outside the range of the examples of its use that we have experienced within the range of practices that we have undertaken within our linguistic community. It is of note that here the normal customs and practices within our linguistic group is the sum of the ways that we have experienced the forms of life activities to have been conducted. Wittgenstein states this as follows:

> "198. "But how can a rule show me what I have to do at *this* point? Whatever I do is, on some interpretation, in accord with the rule." –That is not what we ought to say, but rather: any interpretation still hangs in the air along with what it interprets, and cannot give it any support. Interpretations by themselves cannot determine meaning. "Then can whatever I do be brought into accord with the rule?" – Let me ask this: what has the expression of a rule –say a sign-post –got to do with my actions? What sort of connexion is there here? –Well perhaps this one: I have been trained to react to this sign in a particular way, and now I do so react to it. But that is only to give a causal connexion; to tell how it has come about that we now go by the sign-post; not what this going by the sign really consists in. On the contrary, I have further indicated that a person goes by a sign-post only in so far as there exists a regular use of sign-posts, a custom." (PI).

By this means, Wittgenstein suggests that the standard for following a rule cannot be any interpretation of the rule but only the fact that members of our linguistic community have a customary practice of interpreting the rule in this way. And we can only understand the meaning of the rule within the narrow range of practices that we have experienced. Standards of rule-following then bottom out on the customs and practices of our community and not on any particular interpretation of the rule being followed. But if any rule is subject to interpretation, does it make any sense to say that a practice can be reduced to a rule? For if following a rule could allow for an infinite number of interpretations, then how can a rule mean anything at all? It seems that the idea of rule following is ultimately fruitless and ungrounded. This is a far reaching

conclusion. If Wittgenstein is correct then there is perhaps no more to meaning than that we follow the usages of a word as it is used in the customs and practices of our linguistic community of which we have repeated experience. And if the meaning of a word is nothing more than the uses to which it is put in our linguistic community, then it would seem that there can be no standard for assessing the rightness or wrongness of meaning other than the fact that it is a matter of custom and practice.

Some philosophers such as Kripke have suggested that the scepticism is as radical as this, and that there can be "no fact of the matter" to which we can refer to resolve which interpretation of a rule is the correct one (see Kripke 1982). Indeed Kripke's scepticism is so extreme that it can be said that if there is "no fact of the matter" to distinguish uses, then it follows that there is nothing to know at all, and hence no possibility for knowledge or judgement in this matter. Correct usage for Kripke seems to be nothing more than having our general practice accepted or approved of by our linguistic group. There is no other criterion. Meanings then are completely groundless.

But this is perhaps to overstate the scepticism. While custom and practice in our linguistic group is the most important factor in determining the meaning of a word, indeed it is the driving factor of meaning, it must not be forgotten that description of the world is one of the uses to which a word may be put. This locates and roots some words and practices in our perception of the natural environment and so we can expect to continue to be able to use the normative standards of truth and falsehood. This is certainly so if the perceptions of the world have causal effects upon us. This is yet another reason why we need to know if there is a causal connection between the world

and our perception of it. For if there is such a connection, then we still have the conditions of satisfaction for a truth which is causally communicated to us. The rule scepticism would then retreat to a degree but would still reside in social situations. Furthermore, since perception of the natural environment essentially functions to serve our biological needs, these too may continue to assert a normative function as conditions of satisfaction upon our customs and practices in the social realm. The situation is not therefore as bleak as the sceptic might suggest.

4.5 Representational scepticism

Another similar area of scepticism (and one subject to the same criticism as regards normative standards of true and false, right and wrong) is that of image or representational scepticism. This concerns the mental pictures that we think might be running through our heads or perhaps used by us diagrammatically to illustrate a meaning or concept. Wittgenstein makes very little of this in the Philosophical Investigations but it does occur in the footnote to paragraph 139 where he considers it necessary to have a method of projection in order that we can understand the meaning of the image. He writes:

> "(b) I see a picture; it represents an old man walking up a steep path leaning on a stick. –How? Might it not have looked just the same if he had been sliding downhill in that position? Perhaps a Martian might describe the picture so. I do not need to explain why *we* do not describe it so." (PI).

The point here is that a picture or representation on paper or in our minds is subject to precisely the same need for context and interpretation as a rule is. We may think that we know what the picture means, but we can only

understand it if we are making an interpretation of it – just like whether the man in the illustration is going up or sliding down the hill. Again the interpretation would be that which is provided by the customs and practices of our linguistic community. We would use our background knowledge to inform us, from experience, of how the practices and customs will take place and what the expectations will be within that context.

4.6 Private language

That language is essentially social and involving social action is emphasised by Wittgenstein's Private Language argument. If the meaning of language is its use in social action, then it would seem that it is impossible to have a purely private language. The criteria for using a word in language is a matter of being able to state the criteria for the word's use. This is normalised by the social practices we engage in but it is absent from our private meanings. Wittgenstein says:

> "293. …Suppose everyone had a box with something in it: we call it a "beetle". No-one can look into anyone else's box, and everyone says he knows what a beetle is only by looking at *his* beetle. –Here it would be quite possible for everyone to have something different in his box. One might even imagine such a thing constantly changing. But supposing the word "beetle" had a use in these people's language? If so it would not be used as the name of a thing. The thing in the box has no place in the language-game at all; not even as a *something*; for the box might even be empty." (PI).

For a word to have a meaning, there needs to be public criteria which normalise that meaning. Usually these are the customs and practices of the language game in which the word is used. It follows from this discussion that there can be

no such thing as a private language. Language is essentially a public social phenomenon.

4.7 How we learn

Another feature of Wittgenstein's thought which is revealed in the Blue and Brown Books is the capacity we have for insight (a matter on which Köhler commented on as we shall see) which we use to interpret our experience.

Wittgenstein's example is to be found in the Blue Book.:

> "We point to a thing which [an Englishman] has never seen before and say: "This is a banjo". Possibly the word "guitar" will then come into his mind, possibly no word at all but the image of a similar instrument, possibly nothing at all. Supposing then I give him the order "now pick a banjo from amongst these things." If he picks what we call a "banjo" we might say "he has given the word 'banjo' the correct interpretation"; if he picks some other instrument –"he has interpreted 'banjo' to mean 'string instrument' ". We say "he has given the word 'banjo' this or that interpretation", and are inclined to assume a definite act of interpretation besides the act of choosing." (BB, p. 2).

It would seem that in learning situations, we receive instruction piecemeal, getting instances pointed out to us. It is our own mental processes, conscious (in the case of the 'banjo') or pre-conscious (in the case of colour words) which unite our disparate experience into categories and so enable us to associate our experience with the meaning of the word in language. But this process of uniting piecemeal learning, is not sufficient. We need to grasp the meaning as an act of insightful interpretation that unites our previous experience together. Just like the man in the example, we can come to wrong understandings initially but as we have more and more experience of the use of the word, we will refine our understanding so that it gradually conforms more closely with the meaning

in general use. Again this suggests a progressive awareness of the customs and practices of our linguistic community in which the word is used. At each stage insight will let us grasp the newer and more refined understanding.

4.8 Pain behaviour and Pain language

Pain is initially problematic for Wittgenstein. Pains are not felt publicly and yet we use language to describe them. Is this not a case of private language? Are pains not like the beetle in the box? But consider how we learn pain language. We suffer a fall and graze our knee. We feel the pain and we start to cry. At this point our mother may come to our aid and comfort us using expressions of our public language to describe the pain as sharp or dull or whatever. She will know what we are feeling from her own experience of pain. On future occasions when feeling a similar pain we have learnt the words of our language which describe the pain. Wittgenstein says:

> "244. … how does a human being learn the meaning of the names of sensations? – of the word "pain" for example. Here is one possibility: words are connected with the primitive, the natural, expressions of the sensation and used in their place. A child has hurt himself and he cries; and then adults talk to him and teach him exclamations and, later, sentences. They teach the child new pain behaviour. "So you are saying that the word 'pain' really means crying?" On the contrary: the verbal expression of pain replaces crying and does not describe it." (PI).

4.9 Aspect seeing and colour learning

What is 'aspect seeing'? It seems that human beings have innate pre-linguistic capacities. It is on these cognitive foundations that linguistic capacities are built. Language has to have a foundation somewhere. Wittgenstein notices several of

these underlying cognitive capacities. In this section we briefly look at two of these: 'aspect seeing' and colour.
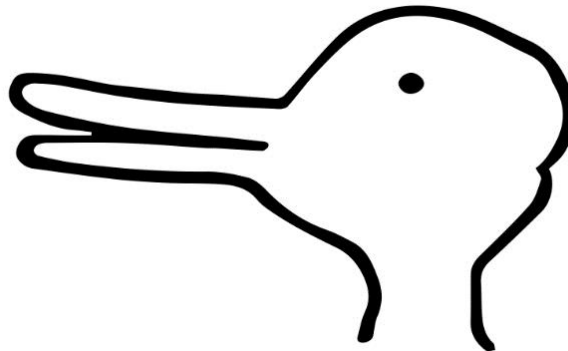
Figure 1 – The Duck Rabbit

The first of these innate capacities is 'aspect seeing'. Wittgenstein gives the example of the 'duck-rabbit' optical illusion (PI, p. 194-195). This involves Jastrow's famous outline drawing (Jastrow, 1901, p. 295) which appears at some moments as a rabbit's head with long ears looking up and to the right and at other moments as a duck's head looking left. When we see the picture as a duck, the rabbit's ears transform in our judgement into the duck's bill. When we see the picture as a rabbit, the duck's bill transforms in our judgement into ears. Wittgenstein notices that we cannot understand the drawing unless we see it as either a duck or a rabbit. At any one time we are predisposed to interpret the drawing in one of these two ways. But, even when we know that both 'aspects' exist in the drawing, we cannot see the drawing as both duck and rabbit at the same time – we seem to have to move between these two judgements holding at first one and then the other. Our pre-linguistic cognitive faculties are imposing an interpretation of the pattern upon the visual image. We have no control over this judgement. It is just part of the way we see things. Wittgenstein also notices that when we look at an image such as an optical illusion that we

have not seen before, it will baffle us until we see the pattern in it. Wittgenstein calls this the "dawning" of the pattern. He writes:

> "… I must distinguish between the 'continuous seeing' of an aspect and the 'dawning' of an aspect. The picture might have been shewn me, and I never have seen anything but a rabbit in it." (PI, p.194).

And again:

> "What is the criterion of the visual experience? –The criterion? What do you suppose? The representation of 'what is seen.' The concept of representation of what is seen, like that of a copy, is very elastic, and so *together with it* is the concept of what is seen. The two are intimately connected. (Which is not to say that they are alike.)" (PI, p. 198).

It seems that all of our perception is like this. We make judgements constantly in order to make sense of the world of our perception. We cannot view the world without making these judgements. We have an innate capacity for imposing interpretative patterns upon our experience. This is precisely the kind of pattern recognition that we will see when we consider the Gestalt psychologists in the following Chapter. Wittgenstein was well aware of the writings of the Gestalt psychologists. Indeed he mentions Köhler (to whom we shall refer in Chapter Five, section 5.8) on PI page 203. Wittgenstein's extended treatment of the idea of aspect seeing asks how far this innate capacity extends? And this problem remained with Wittgenstein and he frequently returned to it. He concludes that there is no aspect of our sense experience which is mediated to our consciousness in its raw form. We must impose pattern and order upon it even before apperception of sense data is available to our conscious mind. This is confirmation of the existence of Gestalt pattern recognition capacities.

The second of the innate pre-linguistic capacities is our grouping together of colour into colour categories. The problem is that there are an infinite number of shades of a colour. This makes it impossible to learn empirically all the shades of a colour. We can only learn instances of different shades which may subtly differ from each other. Yet, somehow we judge these different shades to fall into the colour category (for example we put crimson and scarlet into the category "red"). Wittgenstein's awareness of this problem is referred to in the Brown Book where he considers how the colour red might be learned and the fact that in the learning, despite only having individual shades pointed out to us, we are still able to find "something in common" among the shades to the effect that we find ourselves easily able to associate the word "red" with them all and, once learnt, can use the word to find other examples. Again it is reasonable to assume that there is an underlying perceptual and cognitive function at work. The reason why we can all achieve knowledge of redness is because we all share the same perceptual apparatus and so make the same judgements. It is quite possible, though Wittgenstein does not mention this, that the reason why we can group reds together is because of the fact that we have three different colour receptor cones in our eyes, which are sensitive to red, green and blue hues. The different extent of their stimulation produces the colour discrimination that we all experience. This is known as "Trichromacy." Wittgenstein is, however, only concerned with the fact that we all make these judgements and so are able to unite the infinite number of shades of red together and use the word "red" effortlessly in relation to them. Of course there are problem situations at the margins between different colour word categories: when does red merge into orange, and so on? Wittgenstein's point

is that despite the learning of the colour red being given only by instances of different shades being pointed out to us, yet we are still able to unite our discrete learning experience into a common concept and use the colour word "red" without difficulty. He writes:

> "Suppose I have explained to someone the word "red" (or the meaning of the word "red") by having pointed to various red objects and given the ostensive explanation. –What does it mean to say "Now if he has understood the meaning, he will bring me a red object if I ask him to"? This seems to say: If he has really got hold of what is in common between all the objects I have shown him, he will be in a position to follow my order. But what is it that is in common to these objects? Could you tell me what is in common between a light red and a dark red?" (BB, p. 130).

This example shows us that, in learning the association of a word with a visual concept, or indeed an auditory or other sense concept, we rely on the fact that we have the same sensory apparatus and that this imposes order and judgement on our perceptions and unites them long before we associate language with them.

4.10 Conclusions

We have only been able to summarise Wittgenstein's main arguments as these relate to the research undertaken for this thesis. Wittgenstein's philosophy of language is very broad ranging and insightful. For our purposes, the main points are: that language is a social phenomenon; that it is therefore an essentially public activity; that there is no such thing as a private language; that word meaning is related to forms of life, that forms of life are rule ordered; that rules are generated to unite the experience of our customs and practices which provide the foundations for the meaning of the words used in activities that

comprise the forms of life; that there are an infinite number of ways of interpreting a rule and so strictly the foundations are unsound, particularly when we attempt to use a word in new, hitherto unexperienced situations; that just as rules are open to interpretations, so pictures and mental images are equally open to an infinite number of interpretations which renders these incapable of providing meaning to words; that learning involves insight and a gradual process of conforming to the generally accepted use in a form of life in accordance with our customs and practices; that we learn to replace sensations like pain with learnt verbal and other social forms of behaviour; that we have pre-linguistic pattern recognising and imposing capacities which mediate our perception to our consciousness meaning that we see "aspects" as interpretations of visual phenomena and receive colour images in pre-linguistically ordered categories of colour experience to which category words are attached. We shall now look at the Initial Questions to assess what we have learned in this Chapter:

1. How far can an understanding of pre-linguistic cognitive functions and linguistic functions be related to knowledge?

In this chapter we have noted the existence of pre-linguistic Gestalt pattern recognising and imposing capacities which mediate our perceptual experience to our consciousness. We should therefore expect our knowledge, causally communicated to us to have imposed upon it pre-linguistic categories of features. At this stage we know of only one or two such pre-linguistic categories. Insight appears to be one of these whereby we are able to grasp the meaning of a word that we are learning in the context of its use in a form of life. Our linguistic functions

show us that the meaning of a word is its use, one of which is the use of describing the world of our experience. Other uses appear to be related to social activities (forms of life) and the usages there, despite difficulties of rule scepticism, are grounded in the customs and practices of our linguistic community. A causal theory of reference and meaning might resolve the scepticism. Images, mental and pictorial, cannot be understood on their own but require the imposition of an interpretation to make sense of them. Such interpretation is also subject to scepticism. However, provided that we can find conditions of satisfaction for our knowledge there is no reason why we cannot make sense of the natural and social world and build up a body of knowledge.

2. Do pre-linguistic cognitive and linguistic functions structure our knowledge?

The answer to this is emphatically in the affirmative as we have seen in the answer to Question one hereof.

3. How can a knowledge of pre-linguistic cognitive functions and linguistic functions enhance our understanding of education, learning and teaching?

As yet this is not clear. We know of the existence of such functions but we still have to investigate how learning can be enhanced. This issue will be researched in the remaining Chapters of this thesis.

4. How are language and thought related?

Wittgenstein did not waver from his view in the Tractatus that language and thought are the same. In his later work, Wittgenstein was at pains to show that language is a social phenomenon based and grounded upon

our practices and customs. It is not just a means of representing the world. Our perceptions of the world are mediated to us by our pre-linguistic capacities and are ordered. We should expect our knowledge to be ordered similarly.

5. What are curiosity, insight and creativity so far as relevant to education? How are they or should they be involved in the educational process?

Insight is important in enabling us to grasp in a moment the meanings of words and to make sense of the forms of life we participate in. At this stage it is not yet clear how they engage the educational process.

6. Must we understand explanations of society and culture in terms of narrative?

As yet we still have little information to go on.

7. How does narrative illuminate the educational process?

As yet we still have little information to go on.

8. How are power relations related to the educational process?

As yet we still have little information to go on.

9. How can we enhance Motivation in education?

At this stage we have little information to go on.

10. What are the conditions of satisfaction (truth/falsehood of linguistic and mathematical assertions, appropriateness or otherwise of generalities and

scientific laws and interpretative narratives) for our knowledge? How are these

conditions of satisfaction related to the acquisition of knowledge?

In his later work Wittgenstein has little to add to what he said in the

Tractatus, at least concerning descriptive sentences. However, because

we now know that the meanings of words are grounded in their use in

forms of life, we must examine the purposes of the forms of life and the

uses the words are put to, in order to grasp the conditions of satisfaction

of knowledge derived from this. Words appear to be grounded ultimately

in the customs and practices of our social activities. We must therefore

consider these practices when considering conditions of satisfaction for

our knowledge.

11. Can we state a Theory of Education which summarises our findings concerning the above?

It is still too early to do so.

Chapter Five

Towards a Causal Theory of Education

5.1 Introduction

In this Chapter, based on the findings of Chapters Two to Four, we develop and finalise the Causal Theory of Education.

We first examine the causal theories of reference of Searle, Kripke and Evans. This concludes with the realisation that words are symbols which in linguistic use can be applied to objects and persons in the natural environment by a process of initial "baptism" or "dubbing" rather than by use of descriptions, whether of a singular or definite sort or in the plural as members of a dossier of descriptions. Such linguistic use enables the use of simple descriptive sentences in which a word can stand for a referent. Thus, provided we are otherwise able to identify objects and persons given to us perceptually, we can refer to them by means of using a word. In addition, the structure of simple descriptive sentences is generative in that it also allows a word to be applied to a rational concept, where a description, generality or hypothesis can be named.

We then proceed to consider Putnam's causal theory of meaning from which the now mainstream idea of Externalism of meaning has developed. This asserts that the structures of our language are causally dependent upon the structures we encounter in the world. That is to say, that when we open our eyes (sight being the dominant sense) light from the objects in the world enter our eyes and have a causal effect upon our brains: they make particular representational changes in our neural apparatus, and we interpret these as

discrete identifiable objects bearing particular characteristics. By a process of judgement we learn to distinguish objects, group them into types having similar characteristics and so learn to differentiate objects and types of objects by means of the particular way these objects in the world are given to us perceptually. Hence the meaning of the words "dog" and "cat", though both used for types of four legged animal, are nonetheless distinguishable through their perceptual characteristics (though we may need time to see the differences). Through these causal differences, we come to use words differently because there is an essential difference between these categories of animal in the natural world which we learn to recognise. The words therefore reflect the natural categories that are to be encountered in the natural world, and the differences in usage in language reflect our having developed the knowledge of those categorical differences in the world. We learn to recognise different natural kinds. At the end of the section on the causal theory of language we consider conditions of satisfaction for our findings as these raise the status of descriptive assertions from the status of mere impression or opinion to the status of fact. We do this through considering the connection between the behaviour of the magnetosome in swimming towards cold water as caused by its underlying ability to sense magnetic North. This is a simple and non-conscious product of Darwinian evolution which allows those organisms with the requisite senses and behaviour to survive whilst those which fail to co-ordinate their senses and behaviour will become extinct. In the same way humans who have developed the ability to recognise and give appropriate attention to different types of objects in the environment, whether those objects be threats or opportunities, will have a definite evolutionary advantage. The

symbolic expression of these cognitive abilities are the basis of descriptive language. This is not unique to humans for, in embryo, object recognition of this type, together with simple symbolic expression, enables the Vervet monkey to develop distinct danger calls and this gives rise to the ability to communicate dangers either truthfully or falsely. Individual Vervet monkeys are able to lie in order to take advantage over others in an immediate situations such as in competitive feeding. This could be described as the origins of a symbolic language. But it also enables users to distinguish between truthful assertions and false assertions. In logical terms this can be expressed as *p* or *~p*. Out of this alternative, logic can be developed. Furthermore, by grouping similar objects together into sets, we are able to form simple general hypotheses to predict membership or otherwise of a given set. Such hypotheses are general statements expressed as rules – linguistic generalities. Conditions of satisfaction of an object falling under a general rule again result in truth and falsehood. But conditions of satisfaction of the general hypothesis come about by means of verification or falsification of the rule. This gives rise to the Deductive Nomological method used in science.

The third section of this chapter looks at underlying cognitive theories and in particular the development of a modern theory of human cognition in which the "reptile" brain and the primitive limbic brain appear to enable a rapid and immediate set of emotional and pre-linguistic responses to environmental objects which systems are in constant battle against the rational, higher brain symbolic or linguistic functions of the frontal cortex. The higher brain enables slower rational and reflective action independent of the primitive emotions and desires. Thus in Humean terms, the higher faculties of reason are in constant

battle with the primitive passions leading to Hume's famous comment that "reason is and ought only to be the slave of the passions" (Hume 1972: Book II, Section III 'Of the influencing motives of the will'). The primitive brain, the seat of emotions and desires, has a stronger motivational power than the rational brain. Nonetheless, there is such a thing as a desire-independent reason for action as we shall see in Chapter Six. The battle between emotional brain and rational brain has profound effects upon human behaviour. We briefly look at the alternative ways in which this has been expressed by Hume, Freud, Minsky, Petersen and Goffman. Goffman produces a theory of masks as a means of self-presentation in the world. Masks are invented personae which enable us to overcome our fears and doubts of self-presentation and to replace these with ritualised standard forms of interaction. This theory of masks or schemae has proved of very great importance in contemporary psychology especially for the treatment of personality disorders.

We then proceed to examine the cognitive capacity of pattern recognition, developed in Gestalt psychology, which is a higher brain function and which underlies our ability to generalise and form hypotheses. This capacity also lies behind our ability to use insight and creativity. Here the conditions of satisfaction again are to be found reflected in the Deductive Nomological Method used in science in which a scientific hypothesis is developed and used subject to falsification.

Finally we conclude this chapter by stating the Causal Theory of Education which draws together material from this Chapter and the preceding Chapters in this thesis.

5.2 Introduction to the Causal-Historical Theory of Reference

We mentioned towards the end of Chapter Two that Russell made a distinction between knowledge by acquaintance and knowledge by description. Acquaintance appears to comprise two ideas: First that knowledge of an object is derivable directly from the presentation of the object to the perceiver rather than through any process of judgement or inference; Second that this involves some sort of intentional or direct awareness of the object whereby the senses are presented with or simply given the object rather than that one comes to recognise the object's presence by means of using a description of that object as though the perception of the object is the production of a judgement about it. In this way, Russell makes the distinction between knowledge by simple acquaintance and knowledge by description. Knowledge by acquaintance is simple presentation of the object while knowledge by description is a judgement based upon the sensory characteristics of the object. So one can become aware of an object without necessarily acquiring a description of its characteristics of the sort which we would need to provide us with criteria for recognition and re-recognition of that object. It will be recalled that Russell (1910-11) said:

> "I say that I am *acquainted* with an object when I have a direct cognitive relation to that object, i.e., when I am directly aware of the object itself. When I speak of a cognitive relation here, I do not mean the sort of relation which constitutes judgment, but the sort which constitutes presentation." (p. 108).

The possibility of knowledge by acquaintance therefore raises questions about how much information is required before we are able to use a name, word or symbol to stand for an object in a descriptive sentence, that is to say what is the minimal information whereby we, in a linguistic community, can come to use a

name for a referent in descriptive sentences in the language of that community. We shall see in this section that there is some dispute about these minimal requirements. It is worth looking as Searle's Theory of Proper Names first since Searle takes the view that a Proper Name is a term which we can only use if we have a description or group of descriptions available by which to define our recognition of the object. It would seem that Searle is opposed to Russell's idea of knowledge by acquaintance. We then look at Kripke who in 'Naming and Necessity' (1980) put forward a causal-historical theory of proper names which does allow for knowledge by acquaintance. Gareth Evans produces a hybrid theory which acknowledges that the normal way of starting a linguistic use of a name is a causal-historical process and is therefore appropriate for knowledge by acquaintance, but he also allows that we may also come to know an object by means of a description. This allows us to fix a name to a description or an idea and therefore enables us to refer to ideas and concepts as well as to objects in the natural world. This flexibility in the structures of language is very rich and productive.

The idea of knowledge by acquaintance, and the ability to apply a word or symbol to an object known about through such knowledge by acquaintance is important because it appears that we become aware of objects in the natural environment long before we are able to reflect upon their characteristics. So we are able to refer to objects prior to being able to describe them. The physical behaviour of pointing to an object would appear to be an example of this. It also appears logically prior in the sense that, as we have seen from Frege in Chapter Two, a descriptive sentence both (1) refers to a referent, and (2) then goes on to say something about it. Or we might say that the semantic value of a

referent is a mapping between the word and the object to which it refers, while the semantic value of a predicate is a mapping between the predicate and a truth value relating to the object. Either way the object, and our ability to refer to it, appears logically prior to the ability to say something about it. The causal-historical theory of reference allows for this, while Searle's Theory of Proper Names does not.

5.2.1 Searle's Cluster Theory of Proper Names

Searle puts forward his Theory of Proper Names in an article entitled "Proper Names" (1958). Searle's theory is a variation of the Description Theory of Proper Names.

The Description Theory asserts that we are only able to use a Proper Name because the Name stands for a definite description whereby the object named can be identified. Thus "Scott" can be understood as "the author of 'Waverley'" to quote Russell. In short there is one and only one person who wrote 'Waverley' and that person is known as "Walter Scott". This has the unfortunate consequence that if it should turn out historically that someone else other than Walter Scott wrote 'Waverley' then we end up confused and labouring under a contradiction as "Walter Scott (the man) is not Walter Scott (the author of 'Waverley')". Furthermore our right to use a proper name would depend on our holding the right description of the person or object so named. Any Description Theory of Proper Names is vulnerable to this kind of problem.

Searle's elegant solution to this problem is to produce a Cluster Theory of Proper Names. Instead of relying upon a single definite description which might turn out later to be historically inaccurate, and so cause confusion and prevent us from using the proper name as we had hitherto done so, Searle suggests that we have the right to use a Proper Name because we have one or more of a number or cluster of definite descriptions of the object or person named (we have a "dossier" of descriptions), any one or more of which descriptions may prove to be false whilst still leaving us with a number of other definite descriptions which are not so falsified. So long as some of the definite descriptions in the cluster remain unfalsified we are able to continue using the Proper Name despite the falsification of one or other of the descriptions in the cluster.

There are a number of other arguments which create problems for any Description Theory of Proper Names. We may ask for example where the various descriptions come from? Who is to say what definite descriptions should be placed in the dossier? Are we to rely upon experts? It may be that one person might come to know a particular person named by means of one definite description while another might come to know the person named by means of an entirely different description. Often we may know very little about the person named and yet still feel entitled to refer to them. One example of this occurs with "Tully" and "Cicero". Both these proper names refer to the same Roman individual. Presumably the same definite descriptions will hold true of the use of either of the names. Quite apart from the fact that there is opacity about reference (as I may know all the definite descriptions in the cluster other than knowing that "Tully" and "Cicero" are the same man, and be able to refer

to "Cicero" with ease whilst not knowing or not being aware that I am at the same moment referring to "Tully") there is the problem that people may refer to "Tully" or to "Cicero" without knowing very much at all. Maybe all that I know about "Cicero" is that he was some Roman citizen. And similarly all that I know about "Tully" may be that He was some Roman citizen. Does this prevent me from validly referring to him under either appellation? For example I might be asked, "Have you read any of the speeches of Cicero?" Am I entitled to say "No" without knowing in some definite way who Cicero was?

It seems that we are entitled to use a proper name even when our knowledge of the person so named is minimal to non-existent. Kripke puts forward a Causal-Historical argument for proper names which is critical of any Descriptive Theory of Proper Names and which allows us to use a proper name with minimal knowledge of the individual so named.

5.2.2 Kripke's 'Naming and Necessity'

In Lecture 2 of his book "Naming and Necessity" (1980) Saul Kripke puts forward a devastating critique of any Descriptive Theory of Proper Names and in particular attacks Searle's cluster theory of reference. The argument is extensive but we can summarise it as follows: Kripke considers the possibility that a description commonly used in the linguistic community as a means of reference is incorrect. If the descriptive theory be the case, then the person who is identified by the description is not the person to whom the description really applies but is only a person to whom it is thought the description applies. The

example Kripke gives is that of Gödel, who as we know was the author of the Theory of the Incompleteness of Arithmetic.

Kripke supposes that Gödel is the man who proved the incompleteness of arithmetic. He conjectures that in reality Gödel was not the man who proved the incompleteness theorem but rather that the man who proved the theorem was a Viennese man named Schmidt whose body was found in Vienna under mysterious circumstances many years ago. Schmidt had had a friend called Gödel who had read the proof that Schmidt had written and proceeded to publicise the incompleteness theorem. In these circumstances the person who satisfies the definite description "the man who discovered the incompleteness of arithmetic" is actually Schmidt and not Gödel. Nevertheless in the linguistic community in which Gödel publicises the theorem, Gödel will become known as "the man who discovered the incompleteness theorem." But in these circumstances there is the disjunction between the person who actually satisfies the statement and the person who the linguistic community considers satisfies that description. Now supposing we later discovered that Schmidt had originally discovered the incompleteness theorem and had written about it then we would have to accept that our description was incorrect and we would have to revise our description that points to Gödel by saying that he is the man to whom the incompleteness theorem is commonly attributed but who we now know was falsely attributed to him and properly it was Schmidt who satisfies the description. What we would not conclude is that "Schmidt is Gödel." Until such time as that discovery is made we would continue to attribute the incompleteness theorem to Gödel even though it turns out to be false.

The point of Kripke's theory is that each one of us, in learning the reference of a name, acquires the reference by identifying a description which is another person's reference to that particular. And, as it may turn out, there is a chain of reference where person A acquires the description from person B who has in turn acquired that from person C and so on and so on. That is to say that the predecessor in the chain sets the conditions whereby the successor learns to use the proper name. The connection between each generation is causal – the use by the predecessor causes the use by the successor. In most cases if the description is a correct attribution then the chain of references will proceed backwards until it ultimately reaches the actual person called Gödel or, in the case of the mistaken attribution, the actual person called Schmidt. In this way Kripke imagines that what is important about our use of reference is not so much the content of the description itself which may or may not designate accurately the original holder of the name but the fact that at some stage in the past the description has been associated with that name and subsequently the description is passed from individual to individual in a continuous causal chain of usage until it reaches the present day.

Kripke's next step is to consider that the connection between the definite description and the individual named is purely contingent. It is, in a sense, not the reason why a proper name is associated with a particular individual at all. In fact the reason why an individual bears a name has nothing to do with subsequent events in their life history but rather reaches back to the point of the original christening or "dubbing" with that name. It is really this, rather than the attribution of a description to the person, which designates the individual with the proper name and that name continues to be used of the individual thereafter

and to be associated with that individual's achievements in subsequent steps in the chain. This is a causal-historical theory of naming which derives from the original dubbing. Kripke gives the example of Richard Feynman as follows:

> "The picture which leads to the cluster-of-descriptions theory is something like this: one is isolated in a room; the entire community of other speakers, everything else, could disappear; and one determines the reference for himself by saying, "by "Gödel" I shall mean the man, whoever he is, who proved the incompleteness of arithmetic." Now you can do this if you want to. There's nothing really preventing it. You can just stick to that determination. If that's what you do, then if Schmidt discovered the incompleteness of arithmetic you *do* refer to him when you say "Gödel did such and such." But that is not what most of us do. Someone, let's say, a baby is born; his parents call him by a certain name. They talk about him to their friends. Other people meet him. Through various sorts of talk the name is spread from link to link as if by a chain. A speaker who is on the far end of the chain, who has heard about, say Richard Feynman, in the marketplace elsewhere, may be referring to Richard Feynman even though he cannot remember from whom he first heard of Feynman or from whom he ever heard of Feynman. He knows that Feynman was a famous physicist. A certain passage of communication reaching ultimately to the man himself does reach the speaker. He then is referring to Feynman even though he can't identify him uniquely. He doesn't know what a Feynman diagram is, he doesn't know what the Feynman theory of pair production and annihilation is. Not only that … So he doesn't have to know these things, but, instead a chain of communication going back to Feynman himself has been established, but virtue of his membership in a community which passed the name on from link to link, not by a ceremony that he makes in private in his study; "by Feynman I shall mean the man who did such and such and such and such."" (pp. 91-92).

Kripke continues to discuss and to defend the chain theory of reference by considering situations where the referent relates to a fictional object, or has been built up in folk culture (as in the case of Santa Claus) and he also considers Frege's example of Phosphorus and Hesperus. In essence Kripke's theory is that at some stage an initial baptism takes place whereby an object or a concept is named, this may be by extension, or may come about by the attribution of a description. However the original baptism takes place, the name

is then passed from one receiver of the name to another within the linguistic community in a continuous causal chain of uses down to the present day.

In this way, as in Frege's example of Phosphorus and Hesperus, we tag the evening star Hesperus and on another occasion we tag the morning star Phosphorus. At later date we discover that we have tagged the same planet, Venus, twice. This discovery is empirical. As a result we discover that it is a necessary truth that Hesperus is Phosphorus. The empirical discovery is that, due to the fact that we learn about the orbits of the planets we learn that the planet we have previously tagged Hesperus occupies the same point in space as the planet which we have previously tagged Phosphorus. Any contingency arises from the fact that we have applied the name Hesperus and the name Phosphorus contingently to the same object in the initial baptisms but there is no contingency in whether these two planets are the same. The statement "Hesperus is Phosphorus" is a necessary truth.

At this point Kripke complicates the argument by a discussion of alternative possible worlds. An alternative possible world is one which is very similar to our existing world, it is a world of conjecture, in which things are only very slightly different from the way they are in the real world – usually only in one small attribute. It is just the same as our real world except that things might have happened differently. The differences must be logically possible. This last factor insists that the laws of logic apply to both the real world and the near possible worlds. (For a fuller discussion of possible worlds we must turn to Putnam, 1979, pp. 73-75).

At this stage Kripke coins the expression "rigid designator" which he uses to refer to the same object in every possible world in which they occur. Kripke asserts that the terms Hesperus and Phosphorus when used as names are rigid designators. This is because in every possible world they refer to the same planet, namely Venus. The contingency of naming is highlighted by the fact that although Venus exists in every alternative possible world, there may have been some worlds in which Venus was not visible in the morning from Earth or perhaps was not visible in the evening and therefore would not have been baptised twice with the same name. This highlights the fact that while the association of a particular name with a particular object or person is a contingent fact, in the examples given by Frege, where Frege says that sense and reference are clearly separable, the objects named Hesperus and Phosphorus are nonetheless necessarily the same object. Or to put this another way, although "Hesperus is Phosphorus" is a necessary truth, we do not know a priori that this is the case. We can only make the discovery that Hesperus is Phosphorus by means of empirical investigation.

Kripke's "causal" theory of naming was subsequently developed by Gareth Evans and by Hillary Putnam. We must turn to these now.

5.2.3 Evans's Causal theory of Reference

In his paper entitled 'The Causal Theory of Names' (1973), Evans opens with an attack on Kripke's 'Naming and Necessity.' Evans points out that there are in fact two description theories which Kripke does not distinguish. The first description theory is dependent upon the speaker having a description or a

cluster of descriptions which the speaker associates with the name and thereby uses the description or descriptions to determine the reference to the object being spoken about. This theory, according to Evans, is the one which Kripke sets out to criticise in 'Naming and Necessity.' However, Evans points out that, the correct locus for the description or set of descriptions is that the description or descriptions are used by the speakers within the linguistic community and that this will determine the reference rather than any individual belief held by an individual speaker determining the reference. It can be seen that in this sense it is the beliefs of the linguistic community as a whole which matters for the Description Theory of Proper Names.

Evans is not clear about how this set of beliefs held by the linguistic community is to be acquired. He suggests that it might be obtained by a form of averaging in the manner expressed by Strawson in 'Individuals' (Strawson, 1959) whereby Strawson stresses that the relevant set of beliefs are those which can be arrived at by averaging out the beliefs of different speakers. On the other hand, although Evans does not refer to this, it may be that the beliefs of some type of experts within the linguistic community are more relevant. Evans, having distinguish between the two different description theories asserts that Kripke's attack is directed towards the first, that of the individual speaker, and provides support for this view by referring to Kripke's repeated instances of what "the ordinary man in the street" or what "a person who associated with the name…" believed. In this way Evans establishes weakness in Kripke's argument to the effect that a cluster theory of some sort is still a viable way of looking at reference if only we can identify how the accepted cluster has come into existence. One inference that may be drawn from this argument is that it is

logically possible to associate a name with a definite description and in point of fact we may frequently do this. That is to say, that the name may be applied to a concept thus making the concept available for analysis and functional use.

Evans then proceeds to consider the Causal Theory as laid out by Kripke. He accepts that in practical speech we very often do proceed to use a reference without having any set of descriptive beliefs about the referent. Evans describes this as follows:

> "A group of people are having a conversation in a pub, about a certain Louis of whom S has never heard before. S becomes interested and asks: "What did Louis do then?" There seems to be no question but that S denotes a particular man and asks about him. Or on some subsequent occasion S may use the name to offer some new thought to one of the participants: "Louis was quite right to do that"." (pp. 193-194).

Evans accepts that the causal theory is able to deal with the situation, and that there are also other circumstances where this situation may arise as, for example, where a speaker, S, refers to a particular person about whom they may have had information in the past but about whom they can later remember no description. In these circumstances there can be no doubt that they are still referring to the same named person.

Both of these situations, where there is no belief held by S about the person being referred to, but it should be noted where there are beliefs held within the linguistic community, tend to support the causal theory of meaning. What is essential about both the second form of the description theory and the causal theory is that in both of these instances the speaker's own beliefs are not relevant to the denotation whilst there may or may not be a precise or agreed to set of descriptions in operation within the linguistic community. It is unlikely, contra Kripke, even in the case of a purely causal understanding of

reference, to be a situation where there are no descriptions available within the linguistic community or in its past which can be used to specify the person denoted.

The importance of Evans's view is, that in order to use a name, the individual speaker must really intend to use the name in the way that that name is used generally within the linguistic community.

However, Evans then proceeds to consider what might be regarded as the Shift of Meaning Problem. He gives the example of the name "Madagascar". Quoting from Isaac Taylor's "names and their history" he states:

> "In the case of "Madagascar" a hearsay report of Malay or Arab sailors, misunderstood by Marco Polo, … has had the effect of transferring a corrupt form of the name of a portion of the African continent to the great African island." (Taylor, 1898, p. 6) (Evans, 1973, p. 202).

In this instance it would seem that a mistake had been made and that Marco Polo had failed to use the name with the intention of those from whom the name was acquired. As a result of this mistake, the island in effect was dubbed "Madagascar" by Marco Polo in error and this mistake has become the standard usage namely that 'Madagascar' denotes the name for the island and thus perpetuates the original error within the linguistic community. The interesting question is what should we and would we do once the error is discovered? It would appear to make no sense for us to remove the name "Madagascar" from being the name of the island and to reinstate it to the headland of the mainland of Africa. To do so would be to rename Schmidt as Gödel. And that would be absurd. And in practice what we tend to do is to apply a name to the person referred to in common usage. Evans gives the example of a little blond haired girl on holiday. When she is seen by a group of local

villagers she is dubbed by them "Goldilocks" in virtue of the colour of her hair and thereafter in the linguistic community of villagers the name is repeatedly used to refer to this girl. However unbeknownst to the villagers there are in fact two identical girls for the one that they have seen is one of two identical twins who the villagers totally fail to distinguish. In these circumstances, while it is possible that the name should properly be used to apply to the first of the twins to be dubbed it is not practical for that name to be used to distinguish the twins. In these circumstances it makes more sense to deny that the name "Goldilocks" is the name of either twin. But it should be noted that in this case the description would be incapable of distinguishing between the twins. So that neither the second form of the description theory nor the causal theory could be used to resolve the difficulty.

In conclusion Evans rescues a form of the cluster theory from Kripke's attack but only where, in principle, the person so named is capable of being identified in speech or otherwise. Evans points out that a rescued theory of descriptive reference in fact fulfils the function of some demonstratives so that:

> "Such an expression as "that mountaineer" in "that mountaineer is coming to town tonight" may avert to a body of information presumed in common possession, perhaps through the newspapers, which fixes its denotation. No one can be that mountaineer unless he is the source of that information no matter how perfectly he fits it, and of course someone can be that mountaineer and fail to fit quite a bit of it. It is in such generality that defence of an idea must lie." (p. 208).

In this way Evans shows that we can apply a name to a description or set of descriptions and this opens up the possibility of being able to refer in language to complex concepts by means of a name. Another feature of this is that the intentional stance of individual speakers is ultimately not necessarily

relevant for the correct identification of a person named nor is the average of

the intentional stance of the whole speakers in the community necessarily a

guide for the use of the name meaningfully within the linguistic community.

5.3 Cognitive underpinnings to Object Recognition

One of the tacit problems in what we have written so far is that all of the

theories of language which we have referred to hitherto assume that we already

have objects which we can pick out or lift out perceptually from the natural

environment. That is to say that we already have the ability to identify and re-

identify objects in the world. The problem was first ably presented by Benjamin

Lee Whorf in 'Language, thought and Reality: Selected writings of Benjamin

Lee Whorf' (Whorf, 1956). Whorf (1940) wrote:

> "We dissect nature along lines laid down by our native languages … We
> cut nature up, organise it into concepts, and ascribe significance as we
> do, largely because we are parties to an agreement …that holds
> throughout our speech community." (p. 229).

In other words, every language makes its speakers pay attention to aspects of

the world that are of significance in the language and culture of their linguistic

community. It is for this reason that it is said that Eskimos have fifty different

words for snow. This is because the different ways of looking at snow and its

characteristics are of significance to the Eskimo way of life and that this has

determined the particular way in which Eskimos refer to those characteristics

which would appear invisible to persons who were not members of the Eskimo

linguistic community. Whorf considered that we identify characteristics in the

world because of the causal effect of language on our perception and thinking. However the position could be stated precisely in the reverse, namely that there are these fifty different appearances of snow and because they have a significance to the Eskimo and impinge on the Eskimo way of life, then Eskimo language will come to reflect these characteristics. There remain today a large number of neo-Whorfians who hold the former view (sometimes referred to as Linguistic Determinism). But for our purposes we need to know whether and how the reverse position is the case. For this we turn to the cognitive work of Zenon Pylyshyn who has made many studies of cognitive object recognition and tracking.

5.3.1 Pylyshyn on Selective Attention and Tracking

Pylyshyn reports his recent work in the book 'Minds without Meanings' (Fodor & Pylyshyn, 2014). Tracking involves following a group of marked objects in a visual field as they move about among other similar objects. Experiments are conducted on computer screens and the subjects have to identify the members of the original group at the end of the experiment. The ability to do so is referred to as "tracking". The experiment is repeated a number of times. Initially the objects have stable characteristics but in advanced experiments the characteristics of the objects to be tracked can be varied (changing characteristics may involve changes in size, colour and shape) and the changes in characteristics make the tracking of the objects more difficult. In this way Pylyshyn has been able to identify an underlying cognitive function which enables tracking and he has further been able to identify the characteristics of

tracked objects which cause the subject's brain to give selective attention to the tracked objects. The cognitive function which enables tracking is referred to as "attention" or "selective attention". Pylyshyn describes this as follows:

> "Attention has often been viewed as the brain's way of matching the high speed and high capacity of visual inputs from sensors with the relatively slow speed and limited capacity of subsequent visual processes and short term memory that receives information from the early stages. It has been likened to a spotlight that focuses limited perceptual resources at places in the visual world. … Attention, like a spotlight, can be switched or moved along a (usually linear) path between visually salient objects in the field of view. This can and often does occur without eye movements. Attention can be shifted by exogenous causes (as when it is attracted by something like a flash of light or a sudden appearance of a new object in the field of view); or it can be controlled endogenously, as when people voluntarily move their attention in searching for some visual feature. Although it seems that, under certain conditions, attention may be shifted continuously between different objects of interest, the more usual pattern is for attention to switch to, and adhere to an object. If the object is moving, then attention will stick to the moving object: that is it will track that object." (p. 90-91).

Pylyshyn states that there are some properties of objects that help the tracking function. These include importantly movement, colour and shape which appear to be essential to enable the object to be lifted out perceptually from the background visual field.

5.3.2 Campbell on Selective Attention and Binding

John J. Campbell has written about selective attention in various articles and books (for example Campbell, 2001 and also Campbell & Martin, 1997) from a philosophical perspective. His view of the underlying cognitive function which allows for object identification in the visual field is that propositional and imagistic representations of objects need to be connected or bound together. To identify an object in the visual field as an object and to continue to identify it

over time involves the brain combining different perceptual information in the visual field together. This is called the problem of binding and it is solved by the conscious mind giving selective attention to the object which is lifted out of the visual field using the same aspects as Pylyshyn, namely colour, movement and shape. Additional cues may come from binocular vision, spatial location and from other senses such as associated sound. Campbell (Campbell & Martin, 1997) says:

> "To find when two demonstratives have the same sense, we have to look at the principles that the perceptual system uses to select a collection of imagistic information as all relating to a single object. The use of a demonstrative depends on some principle of selection being used to isolate some of one's current imagistic information as all relating to one object. … Another way to put my proposal is in terms of the idea that visual processing involves the use of 'feature maps': that the various features of the objects one perceives, such as colour, shape or movement, are processed separately by the visual system, which then has the problem of binding together the features which are features of the same object. Anne Treisman (1993) has proposed that the binding is achieved in selective attention. It follows from this that there is as yet no binding of features in the unattended areas of an imagistic representation. So demonstrative identification of an object requires the exercise of attention, using some principle or principles to bind together features of the same object." (pp. 60-61).

In other words the identification of an object involves cognitive attention upon aspects of the environment causally transmitted by our perceptual system to the relative processes of the brain and that these are united by selective attention. Campbell goes on to say:

> "At the level of a practical grasp of causation, there is no need for any capacity to give causal explanations. But at the propositional level, there is a capacity to say what the properties of the object are, and to use them in giving explicit causal explanations. Giving explicit causal explanations requires the use of something like propositional content: we need subject-predicate structure and the possibility of deductive reasoning. We need the ability to refer to individual objects, to ascribe predicates to them, and to ascribe the same predicates again and again, so that a grasp of physical law can be put to work. … What is the fundamental type of human reasoning that exploits this structure? I am

suggesting that it is precisely this type of reflective causal thinking that demands and exploits subject-predicate structure and deductive inference." (pages 64-65).

Taking the work of Pylyshyn and Campbell together, we now have a demonstration of the pre-linguistic cognitive functions which enable us to lift an object out of visual background and to give attention to its features. These enable both initial object perception and give us criteria for recognition of that object over time and re-recognition at some future time using our faculty of memory. Furthermore it is natural for us to attend to features and to express these linguistically in terms of subject and predicate language structures. In other words, we now have found the cognitive basis not only for object identification and re-identification but also for the linguistic structure of simple descriptive sentences.

5.3.3 Arbib and Vervet Monkey Studies

It is now well documented in various sources (for example Hauser, 1986) that vervet monkeys have developed three distinguishable danger calls for respectively: eagle, snake, and leopard. Each call is distinctive and is responded to by a distinctive and different form of fleeing behaviour. Eagle alarms cause monkeys to look up, snake alarms cause monkeys to look down and leopard alarms cause monkeys on the ground to run into trees. The calls being distinctive have been played back to monkeys using recording technology and loudspeakers and the response of monkeys is predictable. It therefore appears that vervet monkeys have developed evolutionarily similar cognitive capacities to human beings for object recognition and attention in the manner

we have seen with the work of Pylyshyn and Campbell. This is hardly

surprising. Vervet monkeys however do not have human linguistic abilities and

therefore are not able to express their perceptions in any other than

rudimentary distress calls. They do not have language. However, Arbib has

noted (2006) that the monkeys have developed social intelligence and the

ability to deceive other individuals by deliberately and falsely using distress

calls to achieve social ends. In other words, Vervet monkeys can reflect

sufficiently on their use of distress calls to use them in order to achieve

purposes other than mere warning of dangers. Arbib writes:

> "Cheney and Seyfarth (Seyfarth & Cheney, 1990) also found that vervet monkeys engage in *tactical deception*, or lying. In their study, a vervet monkey would give a predator alarm call as the group fed in a desired fruit tree. As other group members fled from the "predator," the call-giver would capitalize on its lie by feeding aggressively in their absence. Byrne and Whiten (Byrne and Whiten 1988) collected examples of potential lying in non-human primates, and concluded that this behaviour showed an evolutionary trend, being more widespread in social primates. Great apes seem to be skilled at deceiving one another, while lemurs rarely if ever engage in tactical deception." (p. 94).

This article shows that the pre-linguistic cognitive functions which enable

human selective attention and object identification and re-identification are a

product of a long history of evolutionary adaptation shared by monkeys and

primates. Vervet monkeys show an ability to be able to associate a symbol (a

distinctive alarm call) with a type of object in the environment (a predator) which

is a precursor to and a prerequisite for language. As is common with pre-

linguistic cognitive functions, human language is built upon these cognitive

functions and shares something of the underlying pre-linguistic structures, in

the human case the development of subject-predicate structures which have

enabled the development of simple descriptive sentences. The conditions for

satisfaction of a descriptive sentence of this sort is twofold: One, that there is an

object of attention and that it has the characteristics described in the sentence; and Two, that the use of symbols as a means of communication in both the human and Vervet monkey cases have evolved to enable the respective species to survive in the hostile environments which they inhabit. We shall return to conditions of satisfaction in the concluding sections of this Chapter.

5.3.4 Chomsky's Universal Grammar

It is worth briefly discussing Chomsky's highly important theory of Universal Grammar at this point. Chomsky's theory is based upon the observation that, regardless of the intellectual abilities of the infant, all human infants in the first three years of life, provided they have not suffered from some sort of sensory deprivation, learn to speak their mother tongue. This is an enormous achievement. Out of observation and empirical studies, Chomsky developed in stages a number of theories about the general form of human language. Chomsky's first theory was that of Transformational-Generative Grammar in which Chomsky examined context free uses of words and developed a series of syntactical rules by means of which words of various types can be combined or recombined in order to generate sentences in any given language. By this means Chomsky formed the view that the grammars of any given language use simple syntactical rules which by repeated iterations can be used to develop all the grammatical structures of the given language. He further observed (1957) that such rules, or at least a basic set of the same, were used in common among all human languages which therefore differed by reason only of the

words used rather than by reason of the underlying combinatorial syntactical structures.

As problems started to emerge when comparing different language grammars, Chomsky made a distinction between surface grammar and deep grammar. Surface grammar involves simple combinatorial rules and thus repeats much of Chomsky's findings in his 'Syntactical Structures' (1957), while deep grammar involves semantic relations belonging to types of words (for example colour words) which are mapped onto the surface grammar but which nevertheless do so in distinct ways. Words from one semantic category are not replaceable by words of another semantic category (Chomsky, 1972). Chomsky came to realise that the simple surface grammar rules actually vary to some degree between given languages but that there remained a core set of rules which languages use to a greater or lesser degree. At the same time Chomsky realised that the task of the human infant in learning a language without any formal teaching was too vast and complicated for language to be learned by mere observation, as though starting from a blank slate. Part of the complexity arises from the fact that out of the grammatical rules it is possible to generate an infinite number of sentences many of which would never have been created and used before and therefore cannot stand as the foundations for empirical learning. He therefore formed the theory that human children inherit an internal Universal Grammar, in much the same way as they inherit DNA. The universal grammar is part of the cognitive functions inherited by every human and, by a process of listening to fluent and sophisticated language users using language in concrete situations, the infant is able to switch on or off the innate rules of the Universal Grammar and so home in on the core syntactical rules appropriate to

the mother tongue. Some concepts such as number are therefore always present in any language, whilst others may be present or not depending upon the mother tongue concerned.

More recently, Chomsky (1986) has distinguished between I-language and E-language, meaning respectively Internal language and External language to which Internal language is contrasted, to refer to respectively the elements of the Internal set of general rules as opposed to the External aspects of language such as the contextual situations in which particular forms of language are used (for example the cultural knowledge and practices of the particular linguistic community). This distinction has proved fruitful in that it has been taken up, particularly by holders of the Computation Theory of Mind, and has been used to develop a theory of an innate Language of Thought (LOTH) a perhaps unnecessary hypothesis whereby it is conjectured that thought takes place using an internal innate language common to all humans rather than taking place using actual spoken language (for example in Fodor's theory of Nativism (2008).

While it appears reasonable to posit internal innate grammatical abilities as an answer to the question of how it is possible for linguistic abilities to develop in infant children, the precise nature and extent of a Universal Grammar remains a subject in a great level of flux. This is not assisted by Chomsky's repeated changes of emphasis and revision of his previous work. In addition individual elements of the Universal Grammar as posited by Chomsky have been disproved. For example, Everett who has made several studies of the language of the Pirahã people, an Amazonian tribe (2009 and 2013) takes issue with Chomsky concerning two main issues. First that the Pirahã people

do not use numbers other than three ("one", "more" and "many") which tends to disprove that a Universal Grammar contains innate number abilities, and Second that the Pirahã do not use subsidiary phrases which tends to disprove that the Universal Grammar's rules of recursiveness are a feature of all human languages.

5.4 Putnam on the Causal Theory of Meaning, and on Externalism

So far in the philosophy of language in this chapter we have discussed one form of causal theory in relation to reference, namely the idea that the reference of a term is to be found in the history of links of usage leading back from the present day to the original dubbing of an individual or object identified in the environment with the name that is used thereafter to refer to it in conversation. We now come to the second and more important form of causal theory in relation to reference and meaning which is the idea that names require to be applied to persons or objects in the real world because the existence of that object in the real world necessitates this. The object or person provides the occasion whereby any description of the real world will require to take account of the existence of that object or person and if any discourse is to be made about that object or person a word requires to be applied or associated with it by an initial dubbing with the word. That is to say when we open our eyes (sight being the dominant sense and provides the most distinctive information about the environment) we are presented in our visual field with objects, the existence of which makes causal effects in our brains. The object causes light to enter

our eyes and there to stimulate the rods and cones which in turn stimulate the elements of our perceptual cognitive systems leading to our awareness of the object. The sense perceptions of the object therefore result in brain changes in the perceptual systems in our brains which we call sight. But for the existence of the objects in the external world, we would not have changes in our mind causally transmitted and induced, and we would therefore have no requirement for any words to be associated with these objects. The existence of the objects is the occasion for the need for the words to be applied to the representation of objects so presented. Therefore the very act of perceiving the external world creates changes in our brains which necessitate, if we're going to talk about them, the existence of words to be applied to the objects of our perception. This was discussed by Putnam (1979) in his paper "Are Meanings in the Head?" (pp. 223-227). This paper concludes with the famous closing conclusion that "Cut the pie any way you like, "meanings" just ain't in the *head*."

Putnam invites us to consider the possibility of an alternative possible world very similar to our own but where the clear liquid which performs the role of "water" on earth is, however, on twin earth not H_2O but a different liquid with the chemical formula which Putnam abbreviates to XYZ. XYZ is indistinguishable from water at normal temperatures and pressures and Putnam supposes that it will also occur in the atmosphere and on the surface of twin earth and in oceans and lakes so that it performs all the same functions on twin earth as water does on our earth but it is nevertheless a different stuff chemically. In addition the inhabitants of twin earth refer to this stuff as "water". Also on earth there is a human being whose name is Oscar1 while on twin earth there is an identical human being called Oscar2 who is the counterpart of

Oscar1 on the real earth. Oscar1 and Oscar2 are exact duplicates of each other down to the level of molecule for molecule and as a result they have the same thoughts and feelings as each other. As a result Oscar1 and Oscar2 would in their own respective worlds both refer to the liquids that we have previously mentioned as "water". Prior to around 1750 in both the earth and twin earth neither Oscar1 nor Oscar2 would have been able to notice any difference in meaning between "water1" (H_2O) and "water2" (XYZ). At that time neither Oscar1 nor Oscar2 would have known that "water1" on earth is H_2O and "water2" on twin earth is XYZ. If they were able to travel backwards and forwards between earth and twin earth they would see no difference and would not distinguish between the two liquids. However as science progressed on both earth and twin earth it is possible today to use chemistry to tell the difference between water1 on earth and water2 on twin earth. To be able to distinguish between these two liquids requires a knowledge of chemistry at an advanced level. Putnam invites us to ask how it is that in the languages of earth and twin earth material which once would have been referred to and thought of as the same material is subsequently discovered to be different? Nothing in our experience prior to 1750 would inform us that there is a distinction between these two liquids and so as far as meaning is concerned, until that date "water1" and "water2" meant the same thing. Nowadays we are able to tell the difference but only by reference to experts of an appropriate sort. There is nothing in the psychological state of Oscar1 or Oscar2 that would distinguish between the two liquids. Nevertheless it is the case that when Oscar1 gives the extensive definition "this liquid is water" he intends to refer to H_2O and not to XYZ. Equally Oscar2 intends by his use of the word "water" XYZ and not H_2O.

The conclusion Putnam reaches is that the meaning which distinguishes between these two liquids is not something that is within the heads of either Oscar1 or Oscar2 but rather is something which resides within the material itself. The meaning of water1 as H_2O means the liquid water as we recognise it on earth rather than the liquid water2 recognised on twin earth. This is because the two liquids are, as we learn or discover, different in their chemical formulas. This is a shorthand way of stating and demonstrating that the categories of objects within the world dictate to us the way we have to divide the world up into objects and materials and it follows that the application of the language names to the objects and materials in the world is something which is imposed on us by the way the world is. We can assume that in the same way, the names we use of natural kinds of creatures within the world or rocks in the world are dictated by the existence of different natural kinds of creatures or different kinds of rocks within the world.

Putnam is aware of the fact that there is a distinction between the usage of individual speakers and those of linguistic society as a whole and in his paper he refers to the example of "beech" and "elm". He says that he himself in his own idiolect is unable to tell the difference between elm trees and beech trees, nevertheless as a speaker of the English language he knows that there are two different kinds of tree and that there therefore must be a distinction in terms of the causal effects of elm trees and beech trees on our minds (or at least on the minds of experts) which is thereafter reflected in the distinctions used in language. This enables him to posit the existence of "expert" speakers who are able to distinguish between specific types of external objects and materials by means of their expertise and to whom one should have recourse in

order to decide upon the correct usage where this is relevant to our needs. Putnam suggests that this indicates that within any particular language there may be a linguistic division of labour such that a distinction between objects and materials in the world is recognised by these experts and taken over into language by the imposition of different names to the different types of object or material concerned. This shows that the different types of objects and materials in the world dictate the fact that we speak of them and distinguish in language between them in the way that we do. The distinctions may be ever so slight, and not perceptible to ordinary language users, but the fact that there is a demonstrable and known about distinction necessitates a change in our nomenclature.

This asserts the now mainstream causal theory of meaning whereby the different sorts of natural kinds of things in the world, because they have different causal effects upon our senses (or at least different measurable causal effects), demand that they are regarded as different objects by us and so have different names applied to them. Our language about the world therefore tracks the structures of things that exist in the world. The mechanism of connection between the world and our language is causal.

It is in this sense, that of causality of reference and meaning, that the title of this thesis is referred to as involving a causal theory of reference and meaning. That is to say that this thesis takes a strong realist stance to the world and the categories of objects within the world which dictate that our language takes the form that it does. In other words the categories of different types of objects in the world dictate the distinctions used of them in language.

In his article "Brains in a vat" which forms chapter 1 of "Reason, Truth, and History" (1988), Putnam provides another thought experiment which extends and develops his causal hypothesis of meaning and reference. He invites us to consider that, in a manner reminiscent of Descartes's evil Demon, we may not be individuals living in a real world but rather we may be no more than disembodied brains suspended in vats of nutritious material supported by vat tending machines, and where our entire sensory input is provided by means of a supercomputer which stimulates our sensory centres in so efficient a manner that we are unable to distinguish between what we experience as brains in a vat and what we would experience if we were our normal selves and going about our everyday life. In principle we would be unable to tell the difference. So could it make any sense for us to deny that we are a brain in a vat? At first this thought experiment appears to be no more than a contemporary restatement of global scepticism just as Descartes originally intended its counterpart (Descartes, 1641). But the point is more subtle. His point is that whereas when I see a tree, the tree causes me to have the perception of it in the case of a real brain, so if I in the real world say "I see a tree" the statement is true as the meaning of "tree" by virtue of the causal theory of reference and meaning means a real "tree" which causes me to have the meaning in my head, but in the case of the brain in the vat there is no real tree but merely computer stimulation of the brain's sensory inputs, so if the brain in the vat said "I see a tree" then the statement is true in vat world since the meaning of "tree" in vat world is merely an organised collection of sensory inputs and not a real tree: the meaning of "tree" in vat world tracks the organised collection of electrical stimulation and can have nothing to do with

trees – there are no trees in vat world to cause the real world meaning to have any place there. It follows from this that when I in the real world say "I am not a brain in a vat" that statement is true in the real world as the meanings of "brain" and "vat" are caused by the existence of brains and vats in the real world. If a brain in the vat world were to say "I am not a brain in a vat" the statement is also true since in the world of brains in vats the experiences do not derive from real brains nor do they derive from real vats but rather the experiences are no more than the sensory stimulation given by the supercomputer. In other words no matter which world I am in, I cannot utter the expression "I am a brain in a vat" with truth. I therefore know that I am not a brain in a vat. This odd argument does not end here. It appears that it is Putnam's intention to stress upon us that in both our case and in the case of the brains in the vat, our minds are not to be identified with either the physical stuff of which they are made, or in the brain in a vat world with the objects suspended in the vats, but rather on a proper understanding of both, which they have in common, that a mind is nothing more than mental processes, functions or roles. This allows Putnam to develop a functionalist theory of mind which is a picture of mind based on the functions, roles and processes involved in thinking and cognition. He likens this within our world to that of a computer. Where the computer has hardware which in our world would be brains, and software, which are the thoughts and stimulation upon those brains. In both cases the stimulation or input is evidence of an external world on the other end of the input process. In both cases we have different forms of realisability of minds and Putnam refers to this phenomenon as multiple realisability. The correct way to understand minds is as nothing more than the processes, functions and roles within whatever systems these

are realised. It follows that a linguistic community is no more than a set of co-ordinated processes, functions and roles which respond to the external list of inputs which derive from their environments. This is true of both the real world in which we live and of the world of the brains in the vats which receive all their input from the external influence of the supercomputer.

This view of the causal theory of meaning deriving from the external influence of the environment in which the minds are situated leaves us to look more at the underlying cognitive processes involved in our thinking and the contents of our thought rather than to concentrate upon subjective elements of perception.

In conclusion, Putnam is concerned to show that any account of reference and meaning must involve both an internal and external element. Meaning is to be found in the conjunction of both. This is because it is necessary to produce an account of reference and meaning which is not circular, in that it does not use the terms within the definition which explain the meaning of reference and meaning. That is to say, that an account of reference or meaning which purely talks about one's ideas leads to an infinite regress. My idea that my perceptions give rise to the concept tree, and refer to a tree, can only be explained by reference to other ideas no matter how hard I scrutinise those ideas. This is not sufficient. No account of meaning which merely looks at connections between ideas can ever grasp what meaning is. What is needed for any robust concept of meaning to be true is something outside of the mind that contemplates the meanings. Hence there must be at some stage a causal connection between ideas and the things that ideas are about. Putnam's Causal Theory of Meaning and Reference provides just this required External

element. Externalism (the variety of related causal theories of meaning) depends upon the notion of a causal connection between the world and our ideas of the world at some point – though exactly where is still a matter of dispute. What any form of Externalism is doing is saying that for a proper account to be had of both the Internal elements and the External elements, those judgements and concepts which are Internal to the mind of which we have direct access require the existence also of an External element, that is to say there must be something outside the mind which causes the senses and thus the brain to produce the patterns within them that it does. Necessary and sufficient conditions for any Theory of Meaning must involve External inputs connected causally with Internal ideas of which you have direct awareness. As we shall see later in this chapter both of these are brought together in the case of the Gestalt pattern recognition.

5.4.1 Dretske: Magnetosomes, Conditions of Satisfaction of the Causal Theory of Reference and Meaning

In his paper 'Misrepresentation' (1986) which forms Chapter 2 of the book 'Belief: Form, Content and Function' (Bogdan, 1986), Dretske considers the question of Conditions of Satisfaction of knowledge statements concerning the external world. He states:

> "Epistemology is concerned with knowledge: how do we manage to get things right? There is a deeper question: how do we manage to get things wrong? How is it possible for physical systems to misrepresent the state of their surroundings?" (p. 17).

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What is important here is that for us to make a statement which is meaningful and which is a linguistic description of the external world we need to satisfy the condition that it shall be true or false. In the absence of any such Conditions of Satisfaction of a statement, the statement that is made is no more than mere opinion. The existence of Conditions of Satisfaction raise the statement to being a meaningful factive assertion.

Dretske initially considers natural signs such as water not flowing uphill so that our northerly-flowing river "means" (in the sense of natural meaning) that there is a downward gradient in that direction. Natural signs may be indicators of natural meanings in that they can indicate when something, which can be inferred from the natural sign, is the case. In the real world most natural meanings express a causal or lawful relation between the sign and the thing indicated.

Nevertheless there are also non—natural meanings such as where an organism derives a meaning from its senses and moderates its behaviour accordingly, and in that event the Conditions for Satisfaction of such a non-natural meaning will be functionally related to the organism's immediate biological needs. That is to say there must be some need or other condition without which they would not survive: and the non-natural meaning will fulfil the meaningf (functional meaning) if and only if the indication is correctly understood or fulfilled by the organism. In this way the organism will fulfil some indicated basic biological need and moderate its behaviour so as to allow for behaviour which will optimise the survival or flourishing of the organism concerned. Dretske states:

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"To illustrate the way Mf [the functional meaning] is supposed to work it is convenient to consider simple organisms with obvious biological needs-some thing or condition without which they could not survive. I say this is convenient because this approach to the problem of misrepresentation has its most compelling application to cognitive mechanisms subserving some basic biological need. And the consideration of primitive systems gives us the added advantage of avoiding that kind of circularity in the analysis that will be incurred by appealing to those kinds of "needs" (for example, my need for a word processor) that are derived from desires (for example, my desire to produce faster, cleaner copy). We cannot bring desires in at this stage of the analysis since they already possess the kind of representational content that we are trying to understand" (p. 26).

Dretske then proceeds to consider a marine bacterium called a magnetosome that contains an internal magnet which functions like a compass needle and allows the organism to align itself with the Earth's magnetic field. As the magnetic lines incline downwards towards geomagnetic North in the Northern hemisphere and upwards in the Southern hemisphere, bacteria in the Northern hemisphere can swim towards geomagnetic North. This will enable the bacteria to avoid surface water which has a high oxygen content and instead to swim towards oxygen free sediments at the bottom of the marine environment. This in turn enables the organism to find food. It thus fulfils a necessary biological function. In the Southern hemisphere the same species of organism will swim downwards towards magnetic South and again will avoid oxygen rich surface waters and reach deeper levels of water and so find the sediment where it can feed. Experiments have been carried out where a Southern hemisphere magnetosome is transplanted into Northern water. It will as a result of its response to the alignment with the magnetic field swim in the wrong direction in the Northern hemisphere and so will destroy itself.

The reason why Dretske uses bacteria is that bacteria have no complex system of neurons and therefore have nothing that might amount to a belief. The magnetosome therefore acts merely in terms of its genetic programming. Those magnetosomes that perform their function appropriately will survive in the environment in which they are found whereas those that do not will die. Those that have appropriate genetic programming will therefore survive over those that do not. In this way in a very rudimentary sense the magnetosome survives by reason of the Conditions of Satisfaction of its genetic programming. All the more reason why creatures which have more advanced sensory systems should be able to replicate behaviour programmed to enable them to survive and flourish in their environmental niches. In the case of mammals including human beings there is in addition to the sensory apparatus the existence of brains of greater and lesser complexity which will allow for the existence of rudimentary or more complex representational beliefs containing content derived from sense perception. The mammals will, if the beliefs satisfy the Conditions of Satisfaction, provide for the needs of the mammal and will therefore allow that creature to survive while those where the Conditions of Satisfaction are not met will become extinct. In the case of humans our brains allow us to represent the world in our ideas and we can therefore have true or false beliefs depending upon the accuracy of the representations. This is a functional meaning and the Conditions of Satisfaction of the belief will distinguish between fulfilment of the function or not. Just as with the magnetosome, the Conditions of Satisfaction will determine whether those beliefs are true or false, and if they are true they will satisfy our needs and enable us best to survive and exploit our niche in the environment.

In this way Dretske suggests that human beliefs require Conditions of Satisfaction functionally related to our needs to ensure that we are best able to survive and exploit our environments. Our representations of the world, provided that we utilise Conditions of Satisfaction to determine whether they are true or false, are an advanced form of natural functional meaning related to our need to survive as a species. Dretske expresses the beliefs and behaviour of higher creatures as follows:

> "For it seems clear that a cognitive system might develop so as to service, and hence have the natural function of servicing, some biological need without representational (and misrepresentational) efforts being confined to these needs. In order to identify the natural predator, an organism might develop detectors of colour, shape, and movement of considerable discriminative power. Equipped, then, with this capacity for differentiating various colours, shapes, and movements, the organism acquires, as a fringe benefit so to speak, the ability to identify (and, hence, misidentify) things for which it has no biological need. The creature may have no need for green leaves, but its need for pink blossoms has led to the development of a cognitive system whose various states are capable, because of their need-related meeting, Meaningf, to mean that there are green leaves present. Perhaps, though having no need for such things, it has developed a taste for them and hence a way of representing them with elements that already have a Meaningf." (p. 29).

In this way, we can see that it is not enough for us as a species that we can derive information about our environments causally and act upon them. For us the complex representational systems which we develop, involving as they do, beliefs and other content, including emotional responses and desires, only become factive where there are sufficient Conditions of Satisfaction of the sort appropriate to the type of representation concerned. Just as our underlying pre-linguistic perceptions and cognitive functions must involve Conditions of Satisfaction in order truly or falsely to represent objects and other conditions in the natural environment, so our language, being a symbolic representation of our perceptions, must involve sufficient Conditions of Satisfaction in order that

we can form beliefs and think about the objects and conditions of our environment. Our appropriate responses and reactions to the objects in the environment, which may be dangers or benefits, depend ultimately functionally upon the assessment of those beliefs with appropriate Conditions of Satisfaction. In the case of simple descriptions of the External world this will involve truth and falsehood. In the case of general statements and hypotheses this will involve questions of appropriateness or otherwise, explanatory value or otherwise of our general statements and hypotheses. Such Conditions of Satisfaction show us that we must use appropriate methods to assess the type of symbolic representation (whether logical, mathematical or linguistic) in order to respond appropriately to the information contained in those representations.

5.5 Pribram – the Reptile Brain and the Four Fs

We have seen from the work of Putnam, from his Externalist causal theory of meaning, that things, objects and perceptual characteristics in the external world causally produce effects in our minds so that we become aware of these things, objects and perceptual characteristics. We also saw from the work of Pylyshyn and J. J. Campbell that by using colour, shape and motion we give selective attention to objects in our perceptual environment, lifting them out of the background information, in such a way that we become consciously aware of them as objects in our external environment. Together these mechanisms produce ideational representations in our minds, to which we can apply symbols thus producing a linguistic model of the object in the external world

which we can reflect upon in our thinking. Thus these mechanisms, based upon underlying cognitive processes which are pre-linguistic, are reflected in the referential structures of our language. That is to say the object that is seen is expressed as a referent in the noun phrase of the descriptive sentence and the object is described in the predicate.

It is reasonable to assume that the mechanisms that give an organism an awareness of objects in its environment and to sense and respond to sources of food, nutrient and threats in the environment should have developed fairly early in the evolution of animals. It is now generally thought that this system was well developed in the brain by the time that animals evolved into reptiles. The primitive parts of the brain (the oldest and smallest parts of the brain) correspond to those parts most closely packed around the brain stem (these co-ordinate heart rate, breathing, body temperature and balance). The animal brain has not been redesigned when higher cognitive functions have evolved but rather new developments in brain tissue have been added to what was already there and functioning in the lesser evolved original. As a result additional developments to the brain, such as the limbic system and frontal cortex have been successively added during the processes of evolution. The limbic system (comprising amygdala, hippocampus, thalamus, hypothalamus, basal ganglia, and cingulate gyrus) developed in early mammals and are the centres of our emotions and also are strongly associated with laying down memories. The higher brain (comprising frontal lobe, parietal lobe, occipital lobe and cerebellum) gives rise to our higher rational faculties, including our ability to generate conceptual and linguistic representations. This threefold understanding of the brain is well summarised by Carl Sagan (Sagan 1995, p.

303). Cognitive scientists have identified the functions of the limbic system and higher brain as a result of looking at brain lesions and their effects (a loss of some specific cognitive faculty). Early work on the limbic system and feedback systems between it and the other parts of the brain was carried out by Karl Pribram and others. Pribram's work is an important landmark in this area as it identifies the limbic system as a place where objects are identified by the animal in the environment and where initial and fast behavioural responses are initiated.

In his paper "A Review of Theory in Physiological Psychology" (1960) Karl Pribram discusses the basic functions of the central nervous system upon the behaviour of reptiles and certain other animals which had evolved central neuronal aggregate bodies in the brain. He is particularly concerned with feedback units and identifies the effects of the limbic system. He notes that the limbic system is responsible for basic motivational and emotive behaviour conceived of as primitive, instinctual and visceral reactions. He associates these responses with memory and perception and he identifies the different types of responses into four categories which are colloquially referred to as the four F's. These responses are pre-rational and instinctive and therefore are capable of providing a response almost instantaneously. The Four Fs are feeding, fleeing, fighting, and sex. In these the input data deriving from perception and memory, the latter involving ingrained and basic information retrieval which is available to execute the limbic responses quickly. Pribram states:

> "Neurobehavioural studies performed on animals have provided a major source of data. Ablation and stimulation of any of the various structures that make up the limbic systems interfere with a variety of behaviours.

These data have been detailed in several recent publications. In order to remain uncommitted with respect to one or another theoretical position and yet have a pedagogically useful categorisation, some neutral label that describes this behavioural complex of feeding, fleeing, fighting, and sex, might well be invented. Feeding includes such aspects as awarding; sex includes mating and maternal manifestations. These data have been used to support the notion that the limbic systems serve motivation and emotion" (p. 11).

Pribram then proceeds to discuss the operation of the limbic system in human subjects, and in particular the unusual behavioural patterns which occur with patients who have had limbic system re-sections, and the comparative behaviour with animals which show disturbances in their limbic activities. Pribram concludes that as a result of his studies the limbic system can be seen to regulate the dispositions of organisms including humans. And these help the organisms to organise at an instinctual level their immediate responses to confrontation with other animals in the environment. Pribram discusses animals with neuronal lesions:

"Support for this view of the functions of the amygdaloid regions comes from careful study of the effects of amygdalectomy on sexual behaviour. Hypersexuality was the immediate obvious effect. Hormone studies, etc., were undertaken, only to give equivocal results. But control of the situation in which the hypersexuality was seen to occur, and comparison with the range of normal animals' sexual behaviour, made it clear that cats, at least, behave sexually in much the same way whether they possess their amygdaloid complex or not. However, the occasions on which, and the territory in which, they display sexual behaviour are markedly affected by amygdalectomy. Normal cats restrict their sexual activities to their own territory, and to their own species, types of mates and situations thoroughly explored and delimited through prior experience. Cats devoid of their amygdaloid region, on the other hand, suffer no such restrictions; they behave according to their momentary dispositions without regard to other factors. But, even in this context, the effects of lesions are not always totally disruptive. Certainly, then, the amygdala cannot be conceived as some simple "sex centre." The more appropriate view is attained only after careful exploration of the situational determinants of the behaviour that is studied: in these situations, as in those in which dominance was studied, the amygdaloid

mechanism can be tentatively thought to govern generalization based on experience." (pp. 23-24).

By means of these studies Pribram asserts that the pre-linguistic functions of the limbic system taken as a whole continue to provide the basis for human instinctual cognition based upon organised representations within memory, dispositions and drives. Limbic responses are, however, much faster and more immediate than their rational counterparts.

It is important to note the close connection between the limbic system and memory. Von Scheve states:

> "There are (at least) two distinct memory systems that differ in view of their contents and the time spans they cover (short-term vs. long-term memory): a declarative, explicit memory system and an implicit, non-declarative system. Both are linked to various levels of consciousness involved in processing information and representations (Squire 2004). Only the contents of the explicit, declarative system can be "consciously retrieved, flexibly deployed, and combined with new information" (Welzer & Markowitsch, 2001, p. 207). … Declarative memory is made up of a system for facts (semantic memory) and for events (episodic memory). … The implicit systems can be further divided into procedural and priming memory and systems for conditioning and non-associative learning (Squire, 2004, p. 173). … Much of the sociology of knowledge deals with "stocks of knowledge" that are primarily components of declarative memory. The contents of this system (semantic and episodic memory) are represented predominantly in extensive ramified cortical networks (Squire, 2004, p. 173; Welzer & Markowitsch, 2001, p. 207), in which the hippocampus and amygdala, as subcortical structures, play a central role in the initial storage and consolidation of memory (McGaugh, 2003; Phelps, 2004). Besides autobiographical memories, which are stored in the episodic system, knowledge representation in these networks also encompasses conceptual representations in the form of propositional semantic networks and schemas." (von Scheve, 2013, p.57).

Given this close connection, it seems reasonable that emotions and desires should, where possible, be constructively harnessed in order to maximise efficiency in learning. It is difficult to say how this harnessing should be carried

out as neurobiological papers are remarkably silent on this area. However, it is now thought that the hippocampus can be stimulated by chemical and environmental means. Chemical methods include initial exposure to stimulants such as cocaine, nicotine, amphetamine and alcohol and certain "smart drugs" may stimulate hippocampal functions so as to enhance learning (Kutlu & Gould, 2016). Environmental approaches involve positive emotions (such as enhancing status, achievement and other rewarding outcomes) and episodic factors relating to environment such as "chunking" information and associating it with changes in environment such as intermittent exercise and change of scene, breathing exercises and meditation. These areas both invite further investigation.

5.6 Motives and Emotions: Current Theories

That emotions are involved in instigating actions, including learning, was discussed, as was mentioned in the introduction to this chapter, by Hume (Hume, 1972). But it has also been noted by a large number of other writers of whom Freud, Minsky and Peterson are of note. There are also some philosophical accounts of emotions which are of interest to us.

5.6.1 Freud

Freud developed two rather different analyses of the mind into three constituent structures.

In the 'Interpretation of dreams' (1976), Freud develops a threefold structural model of the mind which he describes as being analogous to an iceberg. Above the water is consciousness, the rational and highly complex thought structures which function within our conscious awareness and in which we make all our conscious decisions about our beliefs and behaviour. This structure of the mind being ever present in our consciousness is well known to us and we are fully conscious of its processes. However, there is as second structural level of pre-conscious ideas which contains episodes and facts contained in our memory which we can, with some effort, bring to bear on our conscious mind in order to facilitate some conscious rational purpose but which until called upon are not immediately present to the conscious mind. They are temporarily out of mind, so to speak, but are dispositions of mind. Freud describes this second structure as:

> "the excitatory processes occurring in it [in the mind] which can enter consciousness without further impediment providing that certain other conditions are fulfilled: for instance, that they reach a certain degree of intensity, that the function which can only be described as 'attention' is distributed in a particular way, and so on" (p.690).

Freud posits a third structure of the mind which he describes as the unconscious. This structure is called the unconscious because we are not consciously aware of its contents. Furthermore Freud posits that the unconscious mind has no access to the conscious mind except via the preconscious. He posits that in passing through the preconscious, the unconscious mind will involve: "an excitatory process which [in passing through the preconscious] is obliged to submit to modifications" (p. 691). He develops this concept of the unconscious by reference to its function in influencing dreams. The unconscious mind is the region of the mind which contains

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primitive wishes, impulses and repressed traumatic memories which are required to be controlled and mediated to the consciousness by the preconscious area. Very often events and desires in the unconscious mind, the results of trauma, are too frightening or painful for individuals to recognise consciously. They therefore repress memories of such traumas. The Freudian method of psychoanalysis is used to make the unconscious mind manifested in a controlled way to the conscious mind and thereby the hope is that the patient can come to acknowledge the trauma and modify his or her deviant behaviour accordingly.

In 1923 Freud developed a more dynamic structural model of the mind (1923) in which he renamed the three regions as Id (formerly the unconscious), Ego (the conscious and rational mind) and the Superego (which serves to impose an inculcated morality developed during early childhood probably as a result of parental correction, and which serves as a method of control over the other two areas). This model is a dynamic model which involves the opposing powers of the three regions of the mind.

The Id (most closely associated with the unconscious mind in Freud's previous thinking) is now seen to house the basic instincts and desires which are drives of very considerable power. Freud divided the drives of the Id into two parts: The first part is the "Eros" or the life instinct which is aimed at the survival of the patient and instigates life-sustaining activities such as breathing, eating and sex. Freud named the creative dynamic power of the Eros as the "Libido" which is a generally positive force which brings the patient and other people together. The second part of the Id is termed the "Thanatos" which is the Greek word for death. This is viewed as a set of destructive forces and includes

such negative emotions as aggression and violence which serve to push the patient away from other people.

The Superego is a culturally dependent moral resource which is always opposed to the forces of the Id and which strives to modify the patient's behaviour so that it coincides with what is culturally acceptable.

The function of the Ego, which remains the seat of conscious rational thought and decision making, has in addition to strike a balance between the unconscious Id and the preconscious Superego. The function of the Ego has been viewed by some as the reflection in our thinking of the age-old battle between our lower bodily desires and our spiritual conscience.

In 'The neuro-psychoses of defence' (1894) and in 'Further remarks on the neuro-psychoses of defence' (1896), Freud developed six defence mechanisms which are repression, denial, projection, displacement, regression, and sublimation. These terms are now common place in our language. Repression is the mechanism used by the ego to keep frightening and painful thoughts from coming into the conscious Ego. Freud uses the metaphor of the Oedipus complex is an example of this. Denial is similar to repression and involves the Ego preventing unacceptable events and motives from being admitted as elements of conscious awareness. Projection is a process whereby an individual will falsely attribute to others his or her own unacceptable thoughts, feelings and motives. In this way the mind is able to validate the unacceptability of the thoughts, feelings and motives which are judged as unacceptable by the Superego. The conscious mind validates the moral judgement of the Superego but falsely attributes another individual with

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responsibility for the object of condemnation. Displacement activities are carried out when the patient is unable to satisfy a powerful impulse and will use another activity as a substitute in which to expend the impulse's energy. Regression involves a behavioural strategy whereby the patient's behaviour regresses to juvenile or infantile behaviours which are less rational and are adopted in order that the patient who is suffering situational stress can cope with the stress that is faced. Sublimation is similar to displacement as it involves satisfying an impulse using a substitute target for that impulse. For example the impulse of aggression may be expended in a more socially acceptable way by applying the energy to an alternative activity.

Freud's psychoanalytic approach is very rich in ideas and has remained a most powerful intellectual interpretation of human motivation, behaviour and deviancy. It was not the only attempt at the time to express the subjective experience of humans in terms of a war. Nietzsche in 'The Birth of Tragedy' (Nietzsche, 1995) likens the aesthetic sense to a fusion between the warring Apollonian rational and life affirming force and the powerful basic desires and emotions of the Dionysian force. Einstein in 'Out of my later years' (1950) wrote:

> "We are all ruled in what we do by impulses; and these impulses are so organized that our actions in general serve for our self preservation and that of the race. Hunger, love, pain, fear are some of those inner forces which rule the individual's instinct for self preservation. At the same time, as social beings, we are moved in the relations with our fellow beings by such feelings as sympathy, pride, hate, need for power, pity, and so on."

In the political sphere, Marx's ideology of dialectical materialism has proved the most powerful narrative interpretation of history as a war between opposing

classes, tacitly where one, the proletariat, is the good and the other, the bourgeoisie, is the evil.

5.6.2 Minsky

In the 'Emotion Machine' (2006) Minsky, a computer scientist with a long history of research in Artificial Intelligence, gives his analysis of human mind and common sense thinking and how these can be mapped and replicated onto Artificial Intelligence systems. His view of the human mind is one of a "cloud of resources" some of which are instinctual and others of which are learned or produced by intuition or practical common sense in order to deal with the situations and problems that living in a society present us with. Many of these are motivated by fundamental human needs such as reproduction, child rearing, finding food, relating to others but he also includes in his list the avoidance of pain and suffering. After a lengthy discussion of human mental capabilities demonstrated in various situations of varying complexity and using various mental structures and processes, he produces a model of the human mind comprising six levels of thought. These are shown diagrammatically as follows (p. 160):

Values, Censors, Ideals and Taboos
↓   ↓   ↓   ↓
Self-conscious reflection
Self-reflective thinking
Reflective thinking
Deliberative thinking
Learned reactions
Inborn, instinctive reactions
↑   ↑   ↑   ↑
Innate, Instinctive Urges and Drives
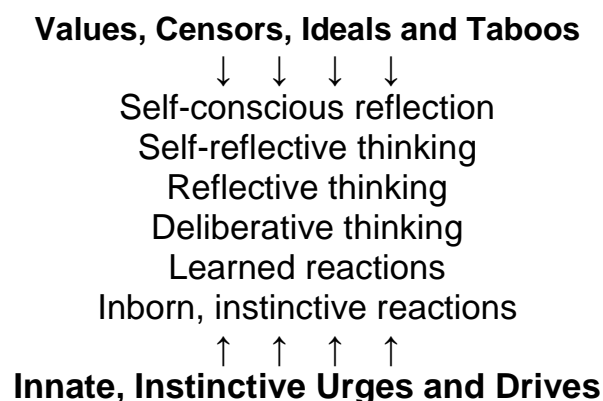
The six levels are not hierarchical but simply levels lying at varying distances

from, one the one hand, the influence of innate and instinctive urges and drives

(which influence the fastest neural modules and so produce the most speedy

and least reflective levels of thought, and at the other extreme and on the other

hand, a system of controls comprising values, censors, ideals and taboos

(which are culturally conditioned controls on behaviour). Minsky explains the

six levels of thought as follows:

> "**Inborn, Instinctive Reactions**: *Joan hears a sound and turns her head.* We are born with instincts that help us to survive.
>
> **Learned Reactions**: *She sees a quickly oncoming car.* Joan had to learn that certain conditions demand specific ways to act.
>
> **Deliberative Thinking**: *What to say at the meeting.* Joan considers several alternatives and tries to decide which would be best.
>
> **Reflective Thinking**: *Joan reflects on her decision.* Here she reacts not to external events but happenings inside her brain.
>
> **Self-Reflective Thinking**: *Uneasy about arriving late.* Here we find her thinking about plans that she has made for herself.
>
> **Self-Conscious Emotions**: *What would my friends have thought of me?* Here Joan asks how well her actions agreed with her ideals." (p. 130-131).

What is immediately apparent here is that emotions are more evenly distributed

in Minsky's model. The layers of social thinking, the bottom three in the above

list, all are informed by emotional inputs, particularly at the Self-Conscious

level. It is still possible to impose a threefold order over this model. For example

the top layer could still relate to brain stem behaviour (the lizard brain), while

layers two to four counting from the top might be regarded as developing in the

highest levels of the brain. The bottom two layers appear to be informed by

limbic emotions but clearly are also very much reflection in the highest layers.

The bottom layer does appear to be the most limbic in character. However,

Minsky would not approve of such a threefold analysis. His view is that these

are six distinct types of thinking and thinking as a whole involves utilising a

range of resources as conditions demand. It is interesting how a computer

scientist working in Artificial Intelligence should be so interested in developing

models for human cognition. This is presumably because computer enabled

Artificial Intelligence still regards human thought processes as paradigmatic and

necessary to simulate despite the obvious fact that current computer

technology is very much serial in character rather than distributed in a parallel

system. Parallel systems are being developed but as yet they are few and far

between and notoriously difficult to programme.

5.6.3 Peterson

In 'Maps of Meaning' (1999) Peterson describes the way he came to develop

his own theory of mind. After having decided in his youth that he had no

commitment to the religion he had been brought up within, he abandoned

religion but began to realise that there was a "voice" inside his head

commenting on his opinions when he was in conversation with other people.

Most of the comments were critical and the "voice" would say things like: "You

don't believe that. That isn't true." (p. xvii). He asked himself where this "voice"

came from and whether it was his own "voice". He formed the view that the

"voice" was part of his mind but was a criticising part expressing moral and

other value judgements that he had that he recognised he had encountered in

books and generally reflected the values of the society in which he grew up. So

although the "voice" was part of him, the thoughts were not his own but were a

stock of social values and judgements. He discovered that if he only said and acted in a way with which the "voice" would approve, the "voice" did not appear. The "voice" contained all the things that he "believed" and which sounded "good, admirable, respectable, courageous." When he read Jung he noted that Jung formulated the concept of a persona or mask, much like a Greek theatre mask, which was used by the individual to project their character when they interrelated with others. This led Peterson to formulate his own theory of mind partly as a result of his experiencing a series of apocalyptic dreams when he realised that there were two influences to his dreams, the first being derived from everyday occurrences of the sort that would be encountered daily, and the second being dreadful images and intense emotional states which were some mythical production of his unconscious mind. Ultimately he developed a theory of mind containing three elements to the mind. The first element is a creative source, but which can also be destructive, which Peterson terms "the Great Mother". The second element Peterson terms "the Great Father" which involves cultural, protective, tyrannical, and ancestral wisdom and myths. The third element is a process that Peterson states mediates between the first and the second elements. He terms this third element "the Divine Son." He gives an example of this operating where a person is placed in a new and unexplored situation producing the emotion of fear of the unknown. The individual is capable of protecting himself by adopting a mask or group identity deriving from the Great Father which restricts the meanings of interaction down to predictable and safe known or posited social interactions. What is of particular interest in Peterson for our study is that he, like Jung, regards myths and ideologies as being of particularly great importance in enabling us to develop and project our

identities. The source of these myths to a great extent is the culture and traditions of our societies though they may be ancient religious and mythical elements retained by our societies only for mythical value. Thus, although his analysis is rather obscure at times, Peterson regards the creation of myths and ideologies as a vitally important part of the way we learn in a culture to relate to other people. His particular taxonomy of the mind appears to be somewhat obscure.

5.6.4 Barrett – 'How Emotions are made'

Lisa Barrett (2017), like Minsky, takes issue with the idea that emotions stem from a particular part of the brain. She believes that emotions are made, that they are the creation of our culture and so express culturally worthwhile reactions to situations. This means that rather than our having innate emotional resources, our emotions are themselves culturally invented masks which we learn or construct so as to express reactions appropriate to our cultural heritage. She disagrees that the emotions often run contrary to our rational ways of modelling the world and ourselves. Rather, the appearances of conflict are simply situations where old models of emotion are giving way to more modern ones. This is particularly felt in the area of the law where old models, conservatively held, continue to operate despite opposing modern views. Legal systems have an essentialized view of the mind and brain which mixes up volition with awareness of volition – whether your brain's role in determining your actions gives you the impression of having a choice. That is not to say that our behaviour is impulsive and uncontrolled, but only that the processes of

control and decision are to a great extent hidden from our conscious minds. Barrett's view is that our actions are determined and that freedom of the will is not real but simply an impression that we have. In the law this impression is expressed by the ideas of volition, intention and the standard of behaviour of the reasonable man. The defence of provocation, for example, requires the court to consider whether the reasonable man in the circumstances in which the accused found himself would have acted the same way given the circumstances of provocation: "Might a typical person of the same age and sex have committed this killing?" (p. 226). A proper understanding of the law is that it is a rule ordered system which creates a standard against which an accused person is measured. "It's a social contract, which acts as a guide to behaviour for the average person in a population of diverse individuals." (Ibid.). As an average it does not represent any individual but rather is a stereotype which is built using stereotypical expressions which are now outdated but which are used to express emotion, feeling, perception and an outmoded view of human nature. Barrett describes the stereotypical emotional expressions as "affective realism" and means that the language and feelings are used to influence the jury and others into a particular judgemental revulsion of the accused's behaviour. Emotions in this sense are constructed tools which have a cultural use in normalising our behaviours so that they conform to accepted standards. Nor do emotions arise from any particular part of the brain, rather the production of them is distributed across the brain rather than localised.

5.6.5 Current Philosophical understandings of Emotions

Robert C. Solomon analysed emotions in an article "Emotions and Choice" which, is published in 'Not Passion's Slave'. (2003). This is an important analysis in which Solomon asserts, that emotions are not mere feelings but are intentional, purposeful and rational judgements about the world. Emotions being intentional have objects to which they are related. Considering the emotion of anger, Solomon gives the example: "I am angry at John for stealing my car." Immediately it is obvious that anger is unlike other moods. Moods may be general in nature and so not have an object, however the emotions are different. In this case there is an object of the emotion of anger: that the speaker believes that John has stolen his car. In doing this the speaker feels slighted by John's action. The anger is the expression of this judgement that the speaker has been slighted. It is therefore not true to say that that the anger has a cause. Anger, unlike sensations, is not an effect that merely occurs when a person in placed in a certain set of circumstances. The speaker has this emotion as a reaction not merely to the fact that John has stolen his car, but to the judgement that John has stolen his car. Feelings are mere effects that do not have this intentional aspect. Emotions do. They are essentially intentional being about the object of thought. And if the speaker were to find out that John had not stolen his car then his anger would dissipate. Solomon writes:

> "If the connection between my being angry and what I am angry 'about' is a conceptual and not causal connection, then it is easy to explain a feature about emotion which has been pointed out by analysts. A change in what I am angry 'about' demands a change in my anger; if I no longer feel wronged by John, who only bought a car that looks like mine, I cannot be angry at John (for stealing my car) any longer. One cannot be angry, if one is not angry 'about' having been wronged. Similarly, one cannot be ashamed, if he does not accept responsibility for an awkward

situation, nor can he be embarrassed if he does not find the situation awkward" (p. 5).

Nevertheless, emotions are judgements which may essentially involve feelings, but the feelings on their own are never sufficient for the emotion which is based upon them. Emotions are judgements. In this way they are similar to beliefs. It is quite possible to be mistaken about the underlying beliefs upon which the emotional judgements are based:

> "I may identify the object of my anger as John's having stolen my car, but I am really angry at John for having written a harsh review of my book" (p. 7).

Nevertheless, it is not possible to be wrong about the object of the emotion – which is still John in the example given. It is also possible for there to be distinctions between first- and other-person ascriptions of emotions:

> "If I am angry about John's stealing my car (the object of my anger), then I cannot believe that the sufficient cause of my anger is anything other than John's stealing my car. *You* can attribute my unjust anger to my lack of sleep. I cannot be angry at all" (p. 9).

It is often said that emotions are irrational, however, Solomon asserts that on the contrary they are rational and purposive. The situation in which emotions occur may be disruptive, but the emotion itself is not. They may be immediate responses to urgent situations in which the intention contained within the action is not possible to bring about. The situations may lead to unfortunate forms of behaviour but this is not to ascribe these forms of behaviour to the emotional judgement. They are simply contingently concurrent:

> "It is the situation and not the emotion which is disruptive and 'irrational'." (p. 13).

It is sometimes said that emotions are not rational because emotions are

directed to short term decisions of a form not approved of in society. Solomon

writes:

> "In a society that places taboos on emotional behavior – condemns it in
> men and belittles it in women – it is only to be expected that emotions
> will be counter to ambitions. A society that applauds 'cool' behavior will
> naturally require strategies that are similarly 'cool'. In such a society
> emotional behavior appears irrational because it is a bad strategy not
> because it is not purposive" (p. 14).

Anger behaviour is recognisable by others because of public behavioural

criteria, and so it is possible to feign anger when in fact one does not have the

underlying emotion. This is similar to what we shall see with Performatives in

the following chapter. It is quite possible to pretend to be angry and so to

deceive observers. But in general the emotions we chose are culturally

conditioned to the extent that they are parts of sets of judgements that may be

expressed in particular social situations, encouraged, suppressed or shared

within the society concerned. Frequently they are associated with images and

self-images within society, are often associated with the maximisation of self-

esteem, and as a result moral indignation is likely to be a material ingredient.

Roberts (2003, p. 346-348) notes that emotions have an important part to play

in our culture. We daily encounter narratives which explain happenings and

events in which emotions play an important part in giving the correct

interpretation. We consider people's motives in the same way and so use

emotions as part of our interpretation of the actions of persons among whom

we must live. Narrative is perhaps the most important way of not merely

learning about our culture and our place in it (including the range of strategies

open to us in various hypothetical situations) but also developing our cultural

understandings of ourselves. This is partly what novels are about. Emotions are

about how we perceive ourselves. They give us powers we can use for

awareness, self-expression, self-management, responsibility and awareness of

potential for change. For this reason, Roberts considers that a child, in learning,

experiments with emotions and so discovers the attitudes and emotional

responses of others. Imitation of these attitudes enables the child to learn moral

discriminations and to learn the values of society and predict the behaviour of

other individuals in society all of which are vital parts of social and moral

development. Emotions therefore remain a vital part of how we make moral

judgements and meaningful actions, develop personal relationships and learn

to maximise human wellbeing.

Antonio Damasio is a neuroscientist versed in philosophy. As a result he is able

to provide explanations for the rise and effect of emotions on us in material as

well as mental descriptions. As to the rise of emotions he writes (2012):

> "Within a few hundred milliseconds, the emotional cascade manages to
> transform the state of several viscera, the internal milieu, the striated
> musculature of face and posture, the very pace of our mind, and themes
> of our thoughts. A disturbance indeed, as I am certain everyone will
> agree. When the emotion is strong enough, upheaval … is an even
> better word. All this effort, complicated in its orchestration and costly in
> the amount of energy it consumes – that is why being emotional is so
> bloody tiring – tends to have a useful purpose and it often does. But it
> may not. Fear may be nothing but a false alarm induced by a culture
> gone awry. In these circumstances, rather than saving your life, fear is
> an agent of stress, and stress over time destroys life, mentally and
> physically. The upheaval has negative consequences" (p. 114).

Damasio's ideas about emotion are however, wider than the analyses of belief,

judgement and object that we have seen with Solomon and Roberts. Damasio

is open to pre-linguistic aspects of emotion, to feelings as well as to intentional

emotions. He writes:

> "Many species, primates and the great apes in particular, exhibit
> forerunners of some social emotions. Compassion for physical
> predicaments, embarrassment, envy and pride are good examples.
> Capuchin monkeys certainly appear to react to perceived injustices.
> Social emotions incorporate a number of moral principles and form a
> natural grounding for ethical systems" (p. 126).

But he is in agreement with Solomon and Roberts that self-image is involved:

> "it is important to examine how processing such emotions and feelings,
> which clearly involves the self of the beholder, engages, or does not, the
> brain structures that we have begun to associate with self states" (p.
> 126).

Though emotions are an area which require much further analysis, it is clear at

this stage in our understanding that they are integrally involved in our

understanding of ourselves as social beings living and acting in relation to other

social beings. They enable us to learn the moral and ethical values of our

societies, how we should behave socially, how to interpret the intentional

actions of others, how to develop strategies for our purposeful actions, how to

develop our potentialities and roles within society, how to live morally and

ethically, and how we should understand our and other's self-images. As such

they inform the educative processes that enable us to become fully rounded

members of a society and culture.

This last sentence is highly reminiscent of the work of Barrett, Minsky and

others who hold the "tool" view of emotions in creating masks whereby we

project our self-identities and organise our behaviour to fit with social and

cultural expectations.

5.7 Goffman - the Presentation of Self in Everyday Life

The discussion of masks as means of self-projection by an individual so as to enable that individual to engage in social interaction has made several appearances in the previous section. There are two sides to this: One, that the individual who adopts the mask uses it to avoid the emotions of fear that would otherwise come about, and Two, that the mask also enables those with whom the individual interacts to have predictable and non-threatening expectations about the user.

Goffman (1971) provides a very comprehensive view of how individuals, either by themselves or as members of a team, will play a roles in daily life whenever they enter into the presence of others in just the same way as an actor will play a performance in front of an audience. He likens the role which the individuals and members of a team will play to a "mask" in the sense of a Greek theatrical mask representing a persona. "Masks" and "roles" are therefore metaphors for how we behave in the presence of others. Performers by adopting a "mask" will provide information to the audience in order to let the audience know how the situation is being defined by the performer. The performance will thereby define in advance how the interaction between the performer and the audience is expected to be conducted. This will raise audience expectations about the role and allow them to understand what role is being performed. This is essential if social interactions are to proceed. After the performer and audience have entered into the social setting where the role is to be performed the audience and performer will have clear expectations about both parties' present and future behaviour. They may also have a clear idea about the purposes which the performance is intended to achieve. The

performer may play the role in such a way that he encourages the audience to think highly of him or her or may play the role in order to ensure a sufficient harmony of interaction between performer and audience. Often a performance will be sincere, and a performer will try to ensure that an audience believes that he or she is sincere, but the performer may have an ulterior motive and so may set out to confuse, mislead, defraud or even insult the audience. Goffman says that the performer tends to conceal activities facts and motives if incompatible with the idealised version of himself. Nevertheless his or her actual intentions may be different from those which he or she portrays. He or she may therefore deliberately misrepresent the role in order to deceive the audience.

A question which arises is why a person would use "masks" and play roles rather than just be themselves? The answer is that social situations are unpredictable and therefore stressful and frightening to engage in and so an individual uses a "mask" in order to remove these stresses and to avoid embarrassment.

The "mask" that is portrayed will be of a standardised or generalised form, usually one in common use. This is done in order to control the way in which an audience will perceive the performance. The performance has to be readily believable. Any performance which goes against the standard form is likely to risk loss of belief by the audience. The performer's own belief is an important part of role-playing. Failure to believe in the role makes the execution of a performance much harder and causes loss of confidence. Frequently the performer must adjust the role strategically during performance in order to maintain believability. Preparation is important and in addition during the performance the correct signals need to be conveyed. So the actor must try to

avoid unusual or impulsive actions. This means that the performer has to be disciplined. If the actor and the audience should fail to believe in the role then the actor's role playing will no longer be accepted as true or sincere.

The actor must maintain the mask for as long as he or she is in the "front stage". This expression is not intended to indicate any particular geographical locus. It simply means staged in the presence of the audience. Where the actor is out with the presence of the audience this is referred to by Goffman as "back stage". In the back stage the actor can drop the role and relax. Sometimes through error, weakness or intervening circumstance the actor may "break character" and so cause an interruption which risks believability. Role-playing is not infallible and errors and mistakes may occur, though usually the audience will ignore these tactfully. On occasion the actor may conceal information from the audience. Goffman refers to this as "mystification". This may be done deliberately in order to stimulate interest or to avoid revealing information which might damage the performance. Performers may also use "mystique" (withholding information) in order to enhance their own status so that the audience believes that there is something special or unique about them. Or they may also use mystique in order to suggest to the audience that there is something special or unique about the audience. Both are intended to improve the closeness of performer and audience. A routine performance can stress spontaneous aspects of the situation. This is called "expressive control" or "impression management".

Goffman considers performances not merely by individuals but also by teams of actors and so he turns to the dynamics of team membership. A performing team has to work together and to be effective this involves loyalty,

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cohesion, and discipline by team members. Members of the team must toe the

"party line". Team members must also have a good knowledge of the roles that

they are individually and collectively portraying. This will avoid making mistakes

which will reflect badly upon the whole team. It is in the sphere of team

performances that the roles of front stage and backstage are particularly

important. A team member may retreat to the backstage to regain composure.

There may well be regions or borders. A region is a performance space which

has a defined boundary to perception. Such things as glass panels in

broadcasting control rooms will isolate a region aurally but not visually. An

office may be bounded by partitions to close off specific areas for performance.

That is to say a region is a place or setting for performance with clear

boundaries. An actor may drop the role-play outside the formal boundaries of

the region of performance. Here the performer is likely to relax and can drop the

front, forego speaking his or her lines, and step out of character.

In his chapter entitled "Discrepant Roles" Goffman introduces the idea of

the performer withholding information from the audience. Goffman describes

five types of secrets (pp. 141-143): "Dark secrets" are facts incompatible with

the image of self which team is performing before the audience. Such secrets

could disrupt the performance and so these require to be withheld. "Strategic

secrets" are the purposes, intentions and capacities which team members have

which allow them to control the audience and also to achieve the purposes of

the performance. "Inside secrets" are secrets known by and shared only by

team members. The sharing of such inside secrets increases team bonding.

"Entrusted secrets" are secrets which are known by members of the team which

are involved in the maintenance of team membership and so keeping entrusted

secrets demonstrates the trustworthiness of team members. Goffman gives the example of a lawyer who, if he discloses the improprieties of his clients, an entrusted secret, both threatens to damage his clients business but also shows a lack of trustworthiness (p.143). A final form of secrets are "free secrets" which are information (which the audience does not yet know) about someone else (not a team member) which can be disclosed whilst performing the role. It is important for members of the team to know which are the free and which are the entrusted secrets.

Goffman then passes on to an analysis of roles (pp. 144-165). Here he makes a distinction between three categories of roles: 1. those which are played within the team borders, 2. those which facilitate interactions with other teams, and 3. those that mix front and back regions.

The first category of roles include the "informer" who pretends to the performers to be a member of the team, and is therefore let into their secrets, but who then divulges these secrets to the audience. An example is the spy. A "shell" pretends to be an ordinary member of the audience but is in fact a member of the performing team. A shell may be used to enhance the bond between the team players and the audience or the shell may encourage the audience to engage with the performance. A "spotter" is an audience member with special knowledge who scrutinises the performance and then reveals the information to the audience.

Moving on to the second category of roles (which facilitate interactions between teams), Goffman refers to "go-betweens" or "mediators" who act with

the authority of both teams and with the interests of both in mind. A "messenger" simply communicates information between teams.

Finally moving to the third category of roles (that mix front and back regions), "non-persons" are individuals who are present in the performance but who do not take an active part of the performance itself. "Service specialists" are individuals who provide specialist services to the team. "Confidants" are non-performers who receive confidential secrets from team members (for example confession of their sins). "Colleagues" provide some information to team members but are not present at the performance.

The next chapter in the book deals with communications some of which may be "communications out of character". If this is done on purpose it may serve the purpose of giving a signal to other performers in a team. This may be to support team morale or perhaps to express dissent with team behaviour. But a communication out of character may also occur by accident.

Goffman provides a highly analysed view of social interaction using the methodology of dramatology. This has proved to be a useful technique in examining how people behave and present themselves in everyday or business roles. It provides a good method for discovering the intentions, information and actions being carried out by in various forms of social interaction. Analysis of roles also provides parties with the information necessary to perform social tasks and to relate with others effectively. The idea of "masks" has been taken up by psychologists as a form of therapy used to assist persons with confidence issues and personality disorders (See Young & Klosko, 1994 and also Young, Klosko, & Weishaar, 2006).

5.8 Köhler, Gestalt and Pattern Recognition

Wolfgang Köhler and Max Wurtheimer were the creators of Gestalt psychology. The word "Gestalt" is the German word for shape and in essence the idea is that we have cognitive processes which combine various aspects of our visual perception into a shape or form. In other words we have an innate cognitive faculty to seek patterns in our visual field and to impose patterns in order to make sense of disparate elements within that field. Köhler (1970) was critical of the method of introspection used in German psychology in the late 19th century particularly by the Freudians. He was equally critical of Behaviourism which was concerned only with externally observable and measurable facts and rejected inner thoughts and feelings.

Köhler thought that the truth was to be found by combining observation and introspection. He studied the experience of visual observation which is processed in our minds utilising habits of interpretation and also pattern recognition. This approach of combining both experimental observation and introspection would resolve a number of problems which were not comprehensible if direct observation alone or introspection alone were to be used. The correct approach was to combine both observation and introspection. One problem example occurs where we see a person approaching us. Although as the person approaches us they fill a larger and larger portion of the visual field, and in fact in accordance with the inverse square law when they become half as near to us the area in the visual field covered by their image is four times the size than when they were twice as far away. We do not form the judgement that they have become larger, but rather we perceive them as being merely closer, and form the judgement that they have not changed their actual

size. Another example he gives is where we sit at the dinner table and we see plates from an angle. The image in the visual field will be elliptical but we still judge that the plates to be circular. In these and in a number of other paradoxical visual experiences, originally discussed by Helmholtz in his Physiologische Optik (1867), Köhler points out how the appearance of the visual field forms a kind of illusion which we process in order to resolve the distorting influences in accordance with our history of pattern formation. Helmholtz had discussed these matters at length using an ingenious method of enquiry asking the subjects of his experiments to look at various objects in the world at increasing distances and by use of a sheet of paper of contrasting colour when the subject shifted their eyes onto the sheet of paper they were given a temporary after-image which they could then use to give the dimensions on the paper. In this way the size of the image in the visual field could be measured.

Our ability to learn from experience causes us to impose patterns of judgement upon the data of our senses and to interpret them. Köhler thought that what Helmholz called the "machine theory" of the nervous system (which summarised Helmholtz's physiological observations) was "quite unable to do justice to the nature of our sensory experience" (p. 122). The machine theory is regarded by him as being wholly functional in operation. But what actually happens is that the sensory experience is organised and judged upon by the mind by means of uniting different experiences which we have had in the past and bringing together the disparate elements of our past experience in order to interpret the present experience. Kohler says:

"The visual field exhibits two kinds of order. One is the order with which the machine theory is occupied when it tries to explain how a given process keeps its right place between its neighbours, and does not go astray. There is, however, another order in the field which tends to escape our attention, although it is no less important than the first. In most visual fields the contents of particular areas "belong together" as circumscribed units from which their surroundings are excluded. ... On the desk before me I find quite a number of circumscribed units or things: a piece of paper, a pencil, an eraser, a cigarette, and so forth. The existence of these visual things involves two factors. What is included in a thing becomes a unit, and this unit is segregated from its surroundings. In order to satisfy myself that this is more than a verbal affair, I may try to form other units in which parts of a visual thing and parts of its environment are put together. In some cases such an attempt will end in complete failure. In others, in which I am more successful, the result is so strange, that, as a result, the original organisation appears only the more convincing as a visual fact" (p. 137-138).

The point that Köhler is making is that we have known and have many

memories of seeing, using and handling these everyday objects. We therefore

recognise them in the visual field as discrete objects. What we do not do, but

Helmholz thinks we do, is simply see a shape in the visual field and then try to

work out what it is. What we **do** see is see an object which is already known to

us and so the visual information arrives to our consciousness already grouped

together into the object and judged to be the kind of object with which we are

already familiar. Köhler continues:

"Wertheimer was the first to recognise the fundamental importance of spontaneous grouping in sensory fields. He also showed by many examples what principles the grouping follows. Most of his illustrations refer to the grouping of separate dots and lines, because when such patterns rather than continuous objects are used demonstrations are less open to objections in terms of previous knowledge. But he also emphasised that the same principles hold for the formation of other sensory wholes" (p. 144).

Köhler then considers the patterns of stimulation on the retina noting that

geometrical relations of the object are likely to be repeated in similar patterns

on the retina. But that in itself is insufficient to distinguish objects. There is

never a time when we simply see a visual shape and wonder what it is. Memory

performs an active role in interpreting and grouping the visual data together. It does not and cannot arrive in our consciousness without having already been processed, and recognised. This grouping and judging faculty of perception is extraordinary and has enormous biological value for it enables the organism to see and attend instantly to features of the visual field that pose threat or promise opportunity. This opposes any empiricist view of the visual sense where the visual information received by the eye and transmitted to the brain is simply a colour shape in the visual field devoid of any meaning or interpretation.

Köhler is also interested in the way that organised sensory experience impinges upon active behaviour and he is also interested in insight.

Our behaviour composes a complex of various brain processes which together constitute a functional unit. Köhler's example is of a pianist in playing various parts of a piece of music sometimes softly, sometimes loudly but always with feeling and innovation. In doing so he will combine various physical processes and mental processes together in an organised whole. Köhler describes these as follows:

> "Innervation projects upon the pianist's muscles an organisation which his mental processes and their brain correlates have in common. In this fashion the formal relations among the resulting soundwaves are determined. But auditory organisation in the people who listen depends upon such relations. Consequently, their experiences tend to be organised in a way which agrees with the organisation of mental processes in the pianist" (p 238).

In this way Köhler puts forward the idea that it is not merely the actor whose physical and mental processes are organised coextensively, but that we, in observing or hearing another person will assume and thus interpret their actions in the same kind of way, as being identical with the inner experiences of those

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persons. From these perceptual facts we will form a judgement about their inner

mental processes which would otherwise remain mysterious.

This faculty for organisation of experience by means of pattern

identification is also the basis for insight. Köhler introduces the subject in

Chapter ten (p. 320). Köhler says:

> "Some weeks ago I saw my little child smiling for the first time, and I was
> charmed. How did I know that my feeling was concerned with the smile?
> If my experiences represented an aggregate of feelings, events and
> things, some of them, directed and some not, but all distributed in a
> certain way, merely as a consequence of historical circumstances, then I
> could only make guesses about possible functional relations among the
> various components of the aggregate.… In the present case, for
> instance, only frequent concomitance of a smile on a child's face with the
> experience of being charmed would allow me to assume that there
> probably is some connection between the two.… In my particular
> experience, one side of the child's face happens to look a little darker
> because of the shadow. According to the strange view which we are now
> considering, I might have referred my feeling to this shadow rather than
> to the child's smile. Such a wrong hypothesis could have been prevented
> only by a sufficient number of opposed instances" (p. 324-125).

In other words, what we observe are the outward appearances, one might say

criteria, of inward experiences, experiences of which we have familiarity, and by

the process of functional organisation, we come to form beliefs about the nature

of the internal experiences and intentions, purposes and behaviour of others.

This is an important finding for the empiricist would have to admit that they have

no basis for knowing what thoughts are going on in another person's head.

Indeed they might deny the existence of such thoughts. Köhler, however,

accepts that we can infer the existence of the thoughts of others as there are

external criteria (in this case a smile, in other cases a grimace, or some other

form of expression or behaviour) which we naturally and immediately judge as

outward signs of inner thoughts on the basis of our long association between

our producing those signs and such inner thoughts in ourselves. It is an

astonishing achievement that this "mind reading" capacity is, like other forms of Gestalt pattern recognition, so fast and reliable. At this stage in the development of his thought Köhler referred to this faculty as insight, presumably meaning inner sight, but his major work in this area was carried out later with his experiments with and observation of chimpanzees.

5.9 Insight and Creativity

Insight is the phenomenon of the sudden and intelligent resolution of a problem which seems to come from nowhere. It is as if the problem solver has suddenly received a completed view into both the nature of the problem and into its solution.

In "the mentality of apes" (1925a) Köhler conducted a series of chimpanzee studies to discover whether Gestalt psychology could be used to make discoveries about primate mentality. His method was to devise various sorts of intellectual problems for the chimpanzees to solve and he would then observe the chimpanzees to see how they solved the problems, how long they took and what sorts of behaviour they exhibited while solving the problems. There were two main types of problem. Initial problems involved detour problems, in which in which chimpanzees had to find a way around certain obstacles, often by a roundabout route, to get to bananas which were in their field of sight. Later experiments involved "tool" problems in which chimpanzees had to use objects in their immediate environment such as sticks, boxes and so on to reach

bananas which were suspended out of immediate reach some distance above them. By conducting these experiments Köhler hoped to discover how chimpanzees thought about and solved the problems. His view was that since Gestalt psychology relied upon pattern recognition and imposition which was so important for human problem solving, that primates, which are equipped with similar cognitive apparatus, would similarly find solutions to the problems by developing appropriate patterns of thinking about the problem and the potentials of the surrounding items. Detour problems were simple for chimpanzees to solve, but the tool problems were conceptually more complicated and seem to cause greater difficulties for the apes. Köhler realised that in solving these problems chimpanzees would typically spend some considerable time assessing the situation, often showing signs of frustration, before finally coming to a solution which seemed to occur to them very quickly. He termed this quick appearance of a solution "insight" which he defined as "the appearance of a complete solution with reference to the whole layout of the problem" (1925b, p. 1190).

Köhler was particularly interested in the moments of insight which tended to happen after long periods of assessing the situation. Sometimes the motivation was the desire for the food itself and sometimes it was the desire to compete against other chimpanzees. Köhler also noticed that chimpanzees which had solved a number of problems previously were more readily able to find solutions to future problems. It appeared that insight was a learnt capacity. Other experiments involved comparing and contrasting the insightful abilities of chimpanzees with those of other animals such as dogs and children. The discovery of insight was important since it showed that problem-solving in

human beings and primates occurs by a creative process rather than either simply being limited to a process of trial and error, or to conditioned responses (in the manner of Pavlov's conditioning of the salivation of dogs). Creativity appears to be an extremely important part of the learning process which in some ways confirms the findings of Wundt who was one of the early experimental psychologists and who asserted a number of psychological laws to show how the mind develops not merely through the experience of causality but also by means of the processes of "association, judgement, creativity, and memory" (Köhler, 1950, pp. 335-337).

Subsequent to Köhler's experimentations primates have continued to be examined for their ability to solve problems and for their creative and insightful thinking. More recently experiments have indicated that chimpanzees can have insight even into the way their own minds work and so are able to "mind read", in the sense of imagine from the inside what another individual is thinking. Humphrey in "The Inner Eye" (Humphrey, 1987) relates an example of this as follows:

> "Do chimpanzees speculate about the minds of other animals? I have said that there are no ideal experimental studies of insight in non-human species, but there is one study of one chimpanzee that bears directly on this question. David Premack did a clever experiment with a chimpanzee called Sarah to see whether she had, as he put it, a theory of mind. Premack showed Sarah videotapes of a human being in some sort of psychological trouble: feeling cold; frustrated by not being able to escape from a locked cage; trying to get music from a gramophone which did not work. They were all situations which the chimpanzee – who had lived for a long time in a human environment - had experienced for herself. The question was, would Sarah realise, on the basis of own reading of the situation, her own inner analysis of what was happening, how the human felt - and so know what to do? Premack gave Sarah a set of photographs showing possible solutions to the human being's dilemma: A key to the cage, a connecting lead for the gramophone, etc., and he gave her the opportunity to match the photographs to each of the videotaped problems (a procedure with which, in a different context, she was already

quite familiar). He reports that Sarah did indeed choose the right solution-but only if the individual and trouble was someone Sarah liked!" (p. 80f).

That insight or creativity is involved in primate problem-solving has a consequence that problem-solving does not consist solely in the following of a set of rules, which might be learnt, perhaps in the form of generalities or regularities from experiences retained in memory. A rule-ordered system may be a springboard for the application of insight and creativity but in itself a system of rules is too rigid and open textured a system to be able to lead to insight or creativity. It would seem from this that it would never be possible for artificial machine intelligence, being based on a list of instructions, to produce anything like insight or creativity in problem-solving. It has been said that "thinking does not proceed serially" (Rumelhart, McClelland, & the PDP Research Group, 1986, p. 42). Furthermore it should be noted that in the human brain, if reason proceeded serially, then human processes of rationality would be too slow. Computers operate in milliseconds whereas human cognitive processes, even though distributed, would take a second or so to achieve the same complexity of calculation. If machine intelligence were to simulate human cognitive processes then it will necessarily involve a parallel-processing system. In addition even if parallel processing were possible, it remains difficult to see how the simulation in a computer of human insight and creativity problem-solving abilities could be reduced to a program built out of list of rules.

Creativity and insight are vitally important in social relations. Seana Moran (2010, pp. 74ff) has written a paper on "The Roles of Creativity in

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Society" in which she gives a list of everyday occurrences of creativity which are involved in:

- "Everyday cleverness especially among children;
- the arts and sciences, with an abundant stream of paintings, dramas, theories, and concepts;
- business, with innovative products such as Federal Express's overnight delivery, 3M's Post-It Note, and Google;
- social interaction, most recently with Web sites like MySpace and Twitter;
- education as charter schools and non-school venues, such as children's museums, arise around the world and
- public policy as countries try to govern and promote the cultural assets and intellectual capital in more systematic ways, such as England's cultural industries initiatives" (p. 74).

Moran considers the functional and purposeful dimensions of creativity. She considers that creativity's principal role is in improving society by setting out to solve collective and individual needs and pressing problems. Thus creativity has considerable positive value as an improver of society's culture. Nevertheless a particular new innovation does not itself carry a moral value and may have both positive and possibly negative unforeseen effects. Individual creativity may be motivated by example since the experience of a society's culture will include the encounters with cultural artefacts which are symbols of collective meanings. Moran's conclusion is that we can understand creativity as an expression of society in that it appears that society is "marching towards greatness" (p. 83). It is also an expression at the individual level as creativity is an act of self expression, enhances an individual's self image and status within society, and enables them to overcome life challenges. That individuals develop creatively is a matter which (as we shall see in the Chapter Seven of this thesis) was the concern of Vygotsky and also Piaget. Vygotsky identified a Zone of

Proximal Development by which a child could overcome an immediate problem

pitched at or slightly beyond his or her current intellectual level by an act of

insight, and Piaget believed that social interactions with peers enabled

development of problem-solving through play. Vygotsky and Piaget both

considered that emotional processes and expression were important in a social

context to encourage the development of creative progression.

Defining insight is difficult. Generally speaking insight is that sudden

moment in which a new pattern is recognised in information. Bühler described

this as the "Aha Moment" (2011, p.10). This makes it different from intuition

which is when we apply an existing model to new information. There are some

modern studies of insight and intuition (for example, respectively, Klein, 2014

and Klein, 2013). Klein (2014) notes that insight generally involves moving

through four stages: preparation (in which we investigate the problem),

incubation (in which the unconscious mind takes over), illumination (in which we

suddenly make the connections) and verification (in which we apply the

connections) (pp. 18-20). He also notes the importance of narrative in this:

> "Stories are a way we frame and organise the details of the situation.
> There are other types of frames besides stories, such as maps and even
> organizational writing diagrams that show where people stand in
> hierarchy. My work centres on stories because they are common ways
> we frame the events in the situations we encounter. These kinds of
> stories organize all kinds of details about a situation and depend on a
> few core beliefs we call 'anchors' because they are fairly stable and
> anchor the way we interpret the other details." (p. 27).

Immordino-Yang & Faeth (2010) also note the importance of insight and its

necessary emotional connections as important in learning (pp.69-83).

5.10 Generalisation and Hypothesis – the DN model

Although there is strictly no single method for science, the Deductive
Nomological method, first propounded in its modern form by Hempel (Hempel &
Oppenheim 1953), states that prediction proceeds upon the basis that a future
event can be deduced from a general law – hence the use of the expression
"deductive". A scientific law expresses a regularity of behaviour of a
phenomenon derived from direct or indirect experience of a very large number
of observations, usually in experimental conditions. The use of the term
"nomological" expresses the reliance of the prediction of the future event upon
the scientific law. In Hempel's view, if we know that phenomena behave in a
law like manner, and that there are no known or at least no unexplained
variations, then, all other things being equal, the future event should present the
same behaviour as the previous ones. This proved a very fruitful method.

Originally it was thought that every regularity confirmed or verified the
law, however, in many cases this was not possible to demonstrate. For
example in many cases a law is simply impossible to verify (for example "all
swans are white" or better "no swan is non-white" proved a satisfactory
generality until it was discovered that there were black swans in Australia).
Logical positivists took the view that meaning and verification were interrelated
(where the meaning of a sentence was equivalent to stating the conditions of its
verification). More recently falsification was considered a better test of a
hypothesis. A scientific hypothesis should stand pragmatically until it is falsified.

But what should happen if a law becomes falsified? There are two
strategies. In the one, it is necessary to state a refinement or explained

exception to the law, thus keeping the law in effect intact subject only to the refinement. The other strategy as exemplified by Kuhn (1962) took the view that science changes by means of "paradigm shifts" whereby an old law, or group of laws, is or are rejected and an entirely new way of looking at solving the problem is developed. An example of this was Kepler who insisted that the planets orbited the sun and not the earth. He was able to show that this made the orbits of the planets elliptical, whereas previously the orbits of the planets had periods of recession when they reversed their apparent motion as seen from the earth. This phenomenon was due to the fact that the earth itself was orbiting the sun. As a result Kepler's revision enabled a much simpler and neater mathematics to be used to explain planetary motion. Whilst both these strategies are possible, the former, which relies upon the regularities of causation and induction is most likely to be adopted and some causal explanation for the exception investigated. Scientific paradigm shifts, though they do occur, are rare.

Another problem for the DN model in recent times has been the question of whether observation involves some necessary element of interference with the experimental demonstration. This was demonstrated in the wave-particle duality paradox in quantum physics. Photons of light (and other atomic and subatomic particles) passing through a diffraction grating (a device which is intended to detect waves by their distinctive diffraction behaviour) show a distribution of interference patterns. This confirms that they are waves. This makes sense for the passage of a continuous stream of light which acts like a wave. However, if individual photons of light are passed through the grating, where they cannot and are not being interfered with by other particles, each

separate particle should pass through without interference and end up on precisely the same target spot on a light sensitive screen. An individual bundle of light should act like a particle and not show any interference. But this is not what happens. There is deflection from the target spot. In fact if the points of deflected impact of a large enough sample of photons are recorded, the points of deflected impact make up an interference pattern. This suggests that individual photons, though particles, still behave like instances of a notional wave of which they form part. Quantum physicists have posited the name "wavicle" to make sense of this finding. It is now believed that at quantum level the laws of physics as we know them from macro level physics do not apply. Instead the quantum particle "knows" that it is part of a notional wave and is deflected by the other notional particles. Thus if we look for a wave using a diffraction grating then we find a wave. Whereas if we look for a particle we find a particle unless we look for it with a wave detecting mechanism like a diffraction grating. Our manner of measuring the phenomena affect the way those phenomena are detected.

For the purposes of this thesis, it is assumed that for all practical purposes in learning and teaching, the DN model is the most appropriate method for assessing hypotheses.

5.11 Conclusions – a Causal Theory of Reference and Meaning (a Causal Theory of Education)

Let us first review the Initial Questions which we posed in the Introduction.

<u>1. How far can an understanding of pre-linguistic cognitive functions and linguistic functions be related to knowledge?</u>

Our pre-linguistic and cognitive functions together are responsible for all of our knowledge. We saw that in Chapter Two our knowledge starts with object recognition. Once we can recognise an object and, through memory, re-recognise an object then we have the foundations of all our knowledge. This allows us to recognise that p and $\sim p$ which is the basis of all logical implication. Our knowledge of logic is built upon this. In addition by grouping objects with similar characteristics together, we are able to compare and contrast them and count them. Counting is the basis for arithmetic and provides the foundation for mathematical knowledge. Grouping similar objects together also allows us to generalise characteristics and behaviour of objects. This is the basis for abstract knowledge and provides the foundations for science. In Chapter Three we saw that we needed to have a connection between the world and our knowledge of it. The world should be casually related to our knowledge via our faculties of perception. The direction of influence must be from world to knowledge. We also have cognitive and linguistic functions which lead us into social engagement which we shall examine in the next chapter. Some of these functions as we have seen are affective. Wittgenstein has shown us that language is necessarily social,

and is based upon social conventions and is rule ordered. Wittgenstein tells us that thought is expressed in language. Thoughts are conventional and rule ordered.

2. Do pre-linguistic cognitive and linguistic functions structure our knowledge?

Our pre-linguistic cognitive and our linguistic functions do structure our knowledge. We cannot think in non-linguistic ways (except perhaps for very simple reactions and responses to immediate environmental conditions). Language is conventional, rule ordered and organised. Our knowledge portrays these attributes.

3. How can a knowledge of pre-linguistic cognitive functions and linguistic functions enhance our understanding of education, learning and teaching?

Chapters Two to Five have shown that knowledge is hierarchical. Our learning must therefore be hierarchical. Learning involves steps from simple forms of knowledge to more complex ones. As stated above, we start with object recognition and move by steps to logic, arithmetic and mathematics, generalisation, hypothesis all of which are causally mediated to us. Our linguistic structures mirror this hierarchical procession. We start with simple descriptive sentences and then proceed to develop more and more complex conceptual sentences. Grouping objects together involves the use of pattern recognition and so of insight. Language and thought are necessarily related. Our thought also proceeds from simples to levels of ever greater complexity. Our educational processes are a connection between learning and teaching. Teaching is a natural function for human beings who are programmed to

foster and bring up their children and pass on to them knowledge, skills and values. Teaching as a professional discipline develops from parental roles. To be effective teachers must understand the hierarchical nature of knowledge, conditions of satisfaction for knowledge, and the appropriate methods for acquiring knowledge. They must introduce subjects at an appropriate level of simplicity in both the causal factual and social fields. Teachers must understand the cognitive and linguistic functions in humans and must relate these to the levels of complexity of the materials being delivered to learners. Teachers must assess and record the cognitive development of learners in order to deliver materials to learners at the correct level. The correct level is that which is just beyond the current cognitive, linguistic or social level. This will encourage the learner to use insight and creativity in finding answers to problems and in understanding new concepts and information. In this teachers will be guides and facilitators. Teachers must also provide a stimulating environment for learners. Teachers must understand the reasons for and methods available to enhance learners and so will organise learning tasks accordingly. Teachers should be aware of the need to enhance learning with episodic tasks and should reward learners for achievement. This is because the positive limbic affective emotions and desires such as curiosity are associated with laying down memory. Teachers should encourage learners and attend to their physical and affective needs. Teachers should stimulate curiosity, insight and creativity. Teachers should encourage role playing and recreational play. In early years teachers should direct learners' attentions to relevant

objects and aspects of the learning tasks and problems. The use of shape, colour and movement should be considered as these assist attention. Insight, creativity and curiosity should be encouraged. The learner needs to address learning and have learning organised in episodes and in environments and activities which foster positive emotions as emotions are involved in the laying down of memories. Assessment of a learner's cognitive and linguistic understanding levels, and the delivering of new materials at a level just a little more advanced than the learner's level will encourage the use of insight and creative understanding. In early years shape, colour and movement can be used to stimulate attention. Teachers should encourage disciplined learning skills and encourage individuals to take responsibility for their learning. Self-motivation and private study should be encouraged.

4. How are language and thought related?

Wittgenstein tells us that language is the symbolic expression of thought. Chapters Two to Five have shown that language enables us to build a model of the natural world, and is necessary for any thought other than the most rudimentary. The complexities of language and the complexities of thought are one and the same.

5. What are curiosity, insight and creativity so far as relevant to education? How are they or should they be involved in the educational process?

These are the pre-linguistic cognitive functions which enable us to make sense of the world. Intuition is recognising known patterns in information. Insight is the ability to recognise new patterns and new connections in

the information before us. In this the unconscious mind is at work. Training in insight makes future problem solving easier. As mentioned above, new materials should be delivered to learners at slightly beyond their current cognitive, linguistic and social levels of knowledge in order that insight and creativity may be used to solve and understand new problems and materials. Curiosity should be encouraged. Insight and creativity are essential at all levels of complexity of knowledge and learning.

6. Must we understand explanations of society and culture in terms of narrative?

Society and culture will be discussed in Chapter Six. For the moment we note that assertions of fact and description, generalities of description and behaviour, and so scientific laws of generality are expressed in language. A simple descriptive assertion can be seen as a very short story. Even mathematical theories and scientific laws are stories of a sort. Narrative can therefore be said to be essential for all forms of explanation. In particular, Klein considers that stories often are useful in framing problems and so in encouraging insight.

7. How does narrative illuminate the educational process?

Learning can be seen as analogous to understanding narratives at ever greater levels of complexity. The educational process involves starting with simples and proceeding by degrees to levels of greater complexity. This is true of all of knowledge we have dealt with so far. The same applies to methods, and conditions of satisfaction of knowledge.

Linguistic narratives are capable of expressing this ever increasing complexity. Narrative is also important for framing problems and so encouraging insight.

8. How are power relations related to the educational process?

We have little information about this at this stage.

9. How can we enhance Motivation in education?

Reference should be made to the previous questions for an answer to this question. This question has already been answered.

10. What are the conditions of satisfaction (truth/falsehood of linguistic and mathematical assertions, appropriateness or otherwise of generalities and scientific laws and interpretative narratives) for our knowledge? How are these conditions of satisfaction related to the acquisition of knowledge?

Reference should be made to the previous questions for an answer to this question. This question has already been answered.

11. Can we state a Theory of Education which summarises our findings concerning the above?

Part of the Theory of Education, the Causal Theory of Reference and Meaning will be addressed now:

A Causal Theory of Reference and Meaning

(Part of the Causal-Cultural Theory of Reference and Meaning (Causal-Cultural Theory of Education))

<u>Our knowledge of the natural world comes from perception which is a causal process</u>

All our knowledge about the natural world derives from our faculties of perception and judgement. The most powerful of the senses is sight. We use sight as an illustration of how our knowledge comes to us causally. When we open our eyes, light reflected from things around us hit our retinas and is sensed by the rods and cones and transmitted by nerve impulses to our brains. This is a causal process. The light from the world makes causal changes in our brain. The light entering our eyes is the start of the causal process. The perception of this in the relative parts of the brain, being brain state changes, are the causal effects of the processes of sight. Putnam's causal theory of knowledge asserts this. We see the tree because the knowledge of the tree that we see is caused by the light which comes from the tree. The tree is a necessary factor and the dominant source of our perception.

<u>The sense data which comes to us is processed and made understandable by means of our cognitive functions which impose patterns upon the data.</u>

Before we consciously perceive a thing in the world, it is processed in our brains using pre-linguistic cognitive functions which have been evolutionarily developed in order to allow us to perceive and make sense of our environment. Of particular importance in this is our pattern recognition ability. We recognise things because of the pattern of light that we see. Our cognitive faculties access

our faculty of memory for similar patterns. In our consciousness we never "see" the raw data, the shapes of coloured patches. We always see things as the familiar objects that they are. Köhler shows that this is the case. All our knowledge of the world around us is mediated to our consciousness in a similar causal way. Our pre-linguistic and cognitive functions are therefore conditions for the existence of any knowledge of the world around us.

Object recognition

Knowledge starts with Object Recognition. Russell considered that our knowledge of the world had to be mediated in such a way. He called this acquaintance. This knowledge is initially non-descriptive. Once we can recognise an object and, through memory, re-recognise an object (because it has the same characteristics) then we have the foundations of all our knowledge. This allows us to recognise that p and $\sim p$ which is the basis of all logical implication. Whether we have an object before us or not, is a matter of truth or falsity. This gives rise to conditions of satisfaction (by which we mean a mechanism for saying whether something is the case or not, whether our assertion or description or what have you is appropriate or inappropriate, felicitous or infelicitous, explanatory or fails to explain). In the case of object recognition the conditions for satisfaction are the logical ones of truth or falsehood.

Logic

Russell shows how all our knowledge of logic is founded upon this. Wittgenstein shows how the axioms of logic are contained in our language, in descriptive propositions. He is able to build up truth tables in this way. Prior shows that the

number of logical axioms are fixed. Any fewer would prevent us from making any inferences and any more would allow us to infer both a proposition and its contradictory. The conditions of satisfaction are still truth and falsehood.

Arithmetic and Mathematics

In addition, by grouping objects with similar characteristics together, we are able to compare and contrast them and also to count them. Counting is the basis for arithmetic and provides the foundation for mathematical knowledge as Russell has shown. The conditions of satisfaction for mathematical truth are still truth and falsehood (though issues of probability are likely to arise in complex mathematics).

Generality and hypothesis

Grouping similar objects together also allows us to generalise characteristics and behaviour of objects and to state the generality of experience in a general assertion about their characteristics and behaviour. A general assertion of this sort can be described as a rule. In science this rule may be described as a law. Thus grouping objects into sets is the basis for abstract conceptual knowledge and provides the foundations for science. The conditions of satisfaction of a general statement may be probability, but in the case of a predictive general statement (scientific law) these will be questions of verification or more likely falsification of the general hypothesis. The method that correlates with this is the Deductive Nomological method.

The hierarchical nature of knowledge, language and method

Our knowledge of the world starts with simple descriptive sentences where we mention a referent and then say something about it. As our knowledge increases it becomes more complex. Similarly, our descriptions of the world become more complex. We learn to give names to general statements or ideas. We can talk about ideas. This is a form of metalanguage. As our knowledge gets more complex, so does our language. At the same time our methods and conditions of satisfaction become more complex. This is what we mean by saying that knowledge is hierarchical.

Thought and language

Wittgenstein has shown in the *Tractatus* that propositional knowledge is linguistic. He developed this in the *Philosophical Investigations.* An assertion in language is the expression of a thought. We cannot think at any level of complexity unless we use language (without language our thinking could be nothing other than rudimentary). Language allows us to model the world symbolically. Language is a tool for understanding and thinking. One of the functions of language is to share knowledge. This can only be achieved where the speaker and hearer use language in the same way. Wittgenstein tells us that language is a public phenomenon. There is no such thing as a private language. Language involves shared conventions of meaning and structure. Chomsky tells us that language functions in general, though not any particular language, is likely to be an innate cognitive function. Like other cognitive functions, it is a product of evolution. Animals other than humans do not possess language, however, they may have to a greater or lesser extent similar cognitive functions to our own. Vervet monkeys demonstrate a high level of object recognition as well as the abilities of generalisation and the association

of a symbol (a danger call) with a particular type of stimulus. Vervet monkeys can also lie. This demonstrates a rudimentary ability to communicate but not yet at a level which we would call language.

Affect and emotion

Our cognitive functions include the limbic system which is the seat of many emotions and drives (some drives are controlled by the brain stem). This has the importance of being the motivation for most of our actions. Our reflective thought is controlled in the higher brain. This distribution of functions means that our thinking sometimes appears to us as a battle between lower drives and emotions as opposed to reason. The key to motivation is to harness the emotions. Memory is also related to the limbic system. Learning can be enhanced by associating the materials being learnt with episodes in our lives or good emotions.

Learning – the hierarchical nature of learning - moving from simple to more complex forms

To learn effectively, we need to start with simples and build up to complexity. It is reasonable then to start early learning with object recognition. This can be enhanced (as Pylyshyn, Campbell and others have shown) by the use of colour, movement and shape which capture and retain our attention.

As we learn starting from simples and building up to complexity, it follows that in the learning process, we should first learn object recognition and naming, and then proceed to make basic descriptions using the characteristics of objects. We should thereby learn about truth and falsehood which are the

foundations of logic. We should then proceed to learn about sorting objects and grouping similar objects together. From this we need to learn how to count and carry out basic arithmetic. Thereafter we can start to learn more complicated mathematics. Similarly our language, which we will need to perform the above tasks will need to proceed from simple descriptive sentences to more complicated forms as are necessary to allow for arithmetic operations to be carried out. Grouping objects allows us to learn about making general statements and predictive statements. This means that we should learn about generality and hypothesis. Our language will become more conceptual as a result. In short knowledge and opportunities for learning need to be delivered in the same way from simple to complex. This applies to logical, arithmetic and linguistic knowledge. Scientific knowledge is the highest form of knowledge of the natural world. Science therefore needs to be delivered at an advanced stage so that we have developed through learning the more basic skills. Learning therefore needs to reflect this increasing level of complexity.

Insight and creativity

It appears from the work of Köhler and others that to a great extent we solve new types of problems using a faculty of insight. Insight is a form of creativity. What we need is to examine the materials that we have available, grasp the problem intellectually and by means of creative insight make the connections necessary to find the solution to the problem. Wittgenstein in the *Blue Book* shows us how we individually learn and refine the meaning of a word by means of a process of insight. Insight is at the heart of learning. It is an intellectual grasping of the answer to a problem. It has close connections to generalising. Moreover, insight can be trained. Köhler showed that apes who had succeeded

in various detour and tool tests improved their performance in more recent tests.

<u>Teaching</u>

Teaching is a natural function for human beings who are programmed to foster and bring up their children and pass on to them knowledge, skills and values. Teaching as a professional discipline develops from parental roles. Teachers need to tell, show and do. This enhances knowledge acquisition as it involves repetition and role play.

To be effective teachers must understand the hierarchical nature of knowledge, conditions of satisfaction for knowledge, and the appropriate methods for acquiring knowledge. They must introduce subjects at an appropriate level of simplicity. Teachers must understand the cognitive and linguistic functions in humans and must relate these to the levels of complexity of the materials being delivered to learners. Teachers must therefore assess and record the cognitive development of learners in order to deliver materials to learners at the correct level. The correct level is that which is just beyond the current cognitive, linguistic or social level. This will encourage the learner to use insight and creativity in finding answers to problems and in understanding new concepts and information. In this teachers will be guides and facilitators and will control the learning process.

Teachers must also provide a stimulating environment for learners. Teachers must understand the reasons for and methods available to enhance learning and so will organise learning tasks accordingly. Teachers should be aware of the need to enhance learning with episodic tasks and should reward

learners for achievement. Teachers should therefore divide work into episodes. Games and role play may perform a useful part of such episodes as well as providing positive emotions and providing opportunities for active repetition and use of knowledge which has been gained. In this way knowledge may become embedded. The reference to positive emotions is important because the positive limbic affective emotions and desires such as curiosity are associated with laying down memory. Teachers may introduce reward and status in order to facilitate positive emotions. Teachers should encourage learners and attend to their physical and affective needs. Teachers should stimulate curiosity, insight and creativity.

Teachers should encourage disciplined learning skills and encourage individuals to take responsibility for their learning. Self-motivation and private study should be encouraged.

Chapter Six

Towards a Cultural Theory of Meaning

6.1 Introduction

In this Chapter, building on what we have already asserted in relation to the Causal Theory, we examine a number of contributors to a cultural theory. We first discuss the origins of the Ordinary Language philosophy within the Analytical Philosophy tradition. The work of Austin and Searle are particularly important as these show us that there are five forms of speech. Searle's contribution is particularly important as he shows how an entire philosophy of society can be built upon these five forms, and particularly on Declarations. However there are some shortcomings with his analysis, namely that he does not see how far power is engaged by the other forms. This study suggests that tacit power is also engaged in these other forms. Pinker's ideas about Politeness show how power relations are almost always engaged. We then proceed to consider Bakhtin as one of the originators of a theory of discourse and narrative. We then look at the phenomenon of culture as information and briefly consider what Sagan, Humphrey, Lewens and Pinker have to say about the connections between information and evolution in terms of giving evolutionary advantage. Next we attempt to define culture and we look at some examples of how the structures of society have been understood. We look at Tylor, Boas, Marx, Foucault, Weber, Hart and Anderson as representative of different approaches. We then turn to methodology and conditions of satisfaction in relation to sociological and cultural theories. Finally we put forward a Cultural Theory of Education.

6.2 Grice

Grice published the paper 'Meaning' in 1957 (1957), and analysed the meaning

of a sentence in terms of the psychological state of a speaker, more specifically

in terms of the speaker's intentions. This is achieved in two steps: the first being

the reduction of the sentence uttered to speaker's meaning, and the second

being to reduce speaker meaning to the speaker's intentions. His argument

uses terminology which is quite clumsy and obscure in places rendering the

paper difficult to read. However the paper was recognised as being of

considerable importance and has spawned a considerable number objections

and discussions.

Taking the reduction of a sentence to speaker meaning, Grice starts by

putting forward examples of different senses of the word 'mean.' His interest in

the meaning of 'meaning' as applied to the meaning of a sentence uttered by a

speaker, is to ask "what did the utterer 'mean' by uttering the sentence?" Grice

is anxious to avoid the kind of 'casual' answer whereby a sentence in a

language is some neutral or objective statement in language which has (1991):

> "(roughly) a tendency to produce in an audience some attitude (cognitive
> or otherwise) and a tendency, in the case of a speaker, to be produced
> by that attitude, these tendencies being dependent on "an elaborate
> process of conditioning attending the use of the sign in communication."
> This clearly will not do" (p. 215).

Instead of being concerned with what a sentence in language means in the

abstract, Grice is concerned with the **use** of the sentence by the speaker. He

reaches this by means of the two steps mentioned above. Whilst it could be

said that at its most basic a sentence conveys information from the speaker to

the hearer, Grice is not satisfied with the idea that a sentence is no more than

an utterance by which the speaker has a belief and the uttering conveys this

belief to the hearer. Something else must be being conveyed. He states his dissatisfaction thus:

> "A first shot would be to suggest that "x [meant] something" would be true if x was intended by its utterer to induce a belief in "some audience" and that to say what the belief was would be to say what x [meant]. This will not do. I might leave *B's* handkerchief near the scene of a murder in order to induce the detective to believe that *B* was the murderer; but we should not want to say that the handkerchief (or my leaving it there) [meant] anything, or that I had [meant] by leaving it that *B* was the murderer" (p. 217).

Grice suggests that in uttering the sentence, a speaker must have uttered it with the intention of inducing a certain belief and that the speaker must also utter it with the intention that the audience should recognise the intention behind the utterance. He gives various examples one being that of Herod presenting Salome with the head of John the Baptist on a charger. Herod intended to make Salome believe that John the Baptist was dead and also intended that Salome should recognise that Herod by this act of communication intended her to know that John the Baptist was dead.

Even this analysis is not enough. It is not enough that the audience should come to know the fact asserted and that the speaker intended the audience by the speech act to recognise the intention of the speaker. For the speaker further intends that this recognition by the hearer should have certain effects in the hearer. It is this interplay of beliefs of the speaker, intentions of the speaker, recognition of the intentions of the speaker by the audience, and speaker's beliefs and intentions as to the effect that he or she is intending to induce in the hearers, that gives the utterance of a sentence its distinctive **use** in language. This is for Grice the generally operative view of meaning. He

recognises that there are likely to be exceptional situations where this view does not work, but he considers that it is a good place to start.

This view of utterances makes it clear that language is being used in a context, its meaning is dependent on the states of knowledge of both speaker and hearer, and it is understandable in its context only by both speaker and hearer being aware of how people in general, in this case people other than just the speaker and hearer, would generally behave in the context when hearing such an utterance. Grice's view of meaning is one where language is alive and active, not dead and passive. It would seem then that when a sentence occurs in writing or otherwise in a contextless situation such as in a book, it can only be understood by giving, or at least imagining a context before such understanding can take place. Grice does not ignore the possibility of apparently contextless uses. He refers to them as "timeless" uses.

> ""x [means] (timeless) that so-and-so" might as a first shot be equated with some statement or disjunction of statements about what "people" (vague) intend (with qualifications about "recognition") to effect by x" (p. 220).

Grice's formulation gave rise to a considerable number of objections which for reason of space we cannot go into in this study. Many of these objections can be dealt with by suitable amendments to Grice's formulation. One objection however is worth mentioning at this stage. That is the objection by Searle. Searle thinks that Grice has not given enough consideration to conventional or contextless uses of language. There are rules governing the use of language and the meanings of words. There must surely be a role for them in a speech act uttered in a context. Both speaker and audience as language users will have a clear idea about what the contextless meaning of a sentence is and this

will have a role in enabling them to manage and control the expectations of the other. And so it is necessary for speaker and hearer both to understand the state of knowledge and intentions of the speaker and the state of knowledge and expectations of hearers, and hence we, even in an apparently contextless situation must still form our view in regard to all of these elements. Searle's example concerns a scenario where an American officer in the Second World War is captured by Italian soldiers. The American wants the Italians to believe that he is a German and so to gain his release. So he utters the only German he can remember: "Kenst du das Land wo die Zitronen blühen?" Searle (1969) invites his readers to consider this situation:

> "Now let us describe the situation in Gricean terms. I intend to produce a certain effect in them [the Italians], namely, the effect of believing that I am a German soldier, and I intend to produce this effect by means of their recognition of my intention. I intend that they should think that what I am trying to tell them is that I am a German soldier. But does it follow from this account that when I say, *Kenst du das Land …etc.*, what I mean is "I am a German soldier"? Not only does it not follow, but in this case I find myself disinclined to say that when I utter the German sentence what I mean is "I am a German soldier", or even "Ich bin ein deutscher Soldat", because what the words mean and what I remember that they mean is "Knowest thou the land where the lemon trees bloom?" Of course I want my captors to be deceived into thinking that what I mean is: "I am a German soldier", but part of what is involved in that is what the words I utter mean in German. … The reason we are unable to do this without further stage setting is that what we can mean is at least sometimes a function of what we are saying. Meaning is more than a matter of intention, it is also at least sometimes a matter of convention. One might say that on Grice's account it would seem that any sentence can be uttered with any meaning whatever, given that the circumstances make possible the appropriate intentions. But that has the consequence that the meaning of a sentence then becomes just another circumstance" (p. 45).

Clearly some elaboration of Grice's theory of utterances requires to be made.

6.3 Austin and Performatives

J. L. Austin was perhaps the most careful and rigorous of the philosophers of Ordinary Language. He believed that before launching into the use of technical terms it was necessary to examine the ordinary language resources that were immediately available. He considered that many important distinctions about the world and our social relations could be clarified by a careful analysis of the way we use our everyday language. In this he echoes the later Wittgenstein, but, though he was familiar with many of Wittgenstein's ideas, he considered that Wittgenstein was not precise enough in his analysis of language. Many of Austin's ideas are laid out in his book "How to do things with words" (1962). Of particular note are the idea of Performatives and Austin's analysis of speech acts.

Austin notes that there are certain types of statements which are not descriptive (not "constative") and yet are very much used in everyday speech as they indicate certain intentional actions. He says:

> "A. they do not 'describe' or 'report' or constate anything at all, are not 'true or false'; and B. the uttering of the sentence is, or is part of, the doing of an action, which again would not *normally* be described as saying something" (p. 5).

These utterances are "Performatives", utterances which not only state something but in addition perform certain social actions. Austin gives various examples including the saying of "I do" in the context of a wedding ceremony, "I name this ship *The Queen Elizabeth"* uttered during a ship naming ceremony when smashing a bottle against the stern of the ship. In both these cases, the words have a special role within the context in which they are uttered. Such statements are not true or false, but they may be effective or ineffective (Austin says they may be "felicitous" or infelicitous") depending upon whether they are

uttered in the appropriate context and by the appropriate person or not. If they

are infelicitous then the utterances are flawed and simply do not achieve the

intended effect. The example of the naming of a ship and of infelicity in this

context is given as follows:

> "Suppose, for example, I see a vessel on the stocks, walk up and smash the bottle hung at the stem, proclaim 'I name this ship the *Mr. Stalin*' and for good measure kick away the chocks: but the trouble is, I was not the person chosen to name it (whether or not – an additional complication – *Mr. Stalin* was the destined name; perhaps in a way it is even more of a shame if it was). We can all agree: (1) the ship was not thereby named; (2) that it is an infernal shame. One could say that 'I went through a form of' naming the vessel but that my 'action' was 'void' or 'without effect', because I was not the proper person, had not the 'capacity', to perform it: but one might also and alternatively say that, where there is not even a pretence at capacity or a colourable claim to it, then there is no accepted conventional procedure; it is a mockery, like a marriage with a monkey. Or again one could say that part of the procedure is getting oneself appointed. When the saint baptized the penguins, this was void because the procedure of baptizing is inappropriate to be applied to penguins, or because there is no accepted procedure of baptizing anything except humans?" (pp. 23-24).

Austin noted that many performatives are contractual (like 'I bet') or declaratory

(like 'I declare war'). If felicitous then making the utterance makes the action so,

the utterance performs the action concerned. In further analysing performatives,

Austin notes that there are some features which must be present to make the

performative felicitous. These are: A. There must exist a conventional

procedure in terms of context ("the uttering of certain words by certain persons

in certain circumstances" (p. 14)), B. The persons and circumstances must be

appropriate for the utterance to be invoked, C. The procedure must be

executed by all the participants, appropriately and D. completely, E. the

participants must *intend* to conduct themselves as they should in order to fulfil

the procedure, and F. the participants must *actually* conduct themselves as

they should in order to fulfil the procedure. A failure could occur in any of these

six requirements. In this way Austin accepts that it is perfectly possible that a person, who is a participant in such a procedure, can make the utterance without meaning them in the sense that I can say "I promise I will do such and such" without intending to hold to my promise. This could be done in order to deceive those present for example. Austin gives a list of verbs he has identified as being those most commonly used in performatives (p. 79).

Austin, building upon Grice, also makes a distinction amongst locutionary, illocutionary and perlocutionary aspects of utterances. The locutionary aspect is the uttering of the sentence concerned. The illocutionary aspect is the making of the utterance with the intention of its having the effect on the hearer(s). The perlocutionary effect is the effect upon the hearer(s) which the utterer intends to make. Austin gives the following example:

> "Locution - He said to me 'Shoot her!' meaning by 'shoot' shoot and referring by 'her' to *her* … Illocution – He urged (or advised, ordered, &c.) me to shoot her. … Perlocution – He persuaded me to shoot her" (p. 101)

This analysis is important since it builds upon the important distinction that exists between saying something intentionally (with meaning) and merely saying something. In the case of many utterances, the making of the utterance includes both an illocutionary force and has in mind a specific perlocutionary effect in the hearer. In all of these cases an utterance is being used to effect changes in the external social environment. Illocutionary utterances are tools which can be used to make changes in the social world. But what sort of changes can be made? Austin answers this question by giving a list of types of illocutionary force: stating, describing, giving a verdict, exercising powers, making promises, expressing an attitude (like thanking someone, or congratulating them), certain other forms used in arguments and conversations

(to express agreement or provide narrative) (pp. 148-150). Austin's list of five general classes of statement (pp. 151-163) is awkward and required further analysis and restatement. This analysis was to be provided by Searle to whom we now turn.

6.4 Searle and 'Speech Acts'

J. R. Searle researched in Oxford under the supervision of J. L. Austin, Grice and Strawson. Searle's early work was on Speech Acts where he took up J. L. Austin's ideas and developed them. Over the last fifty years Searle has developed a philosophy which brings together philosophy of language, mind and society. Each of these realms are understandable on the basis of intentionality[14], individual or collective. Speech acts are the public expression of the intentionality of a speaker.

Searle considers that a speech act is an act which has illocutionary effects and may also have perlocutionary effects (1969). An illocutionary effect is one where I intend the hearer to understand my act because of the conventions and rules of language. Typical examples will be promises and orders where the act is achieved by the making of the speech act and the intention of the act being understood by the hearer. An act may have a perlocutionary effect also where the utterer intends the hearer to act upon the speech act. In this way the intention of the perlocutionary act is not fulfilled simply by the hearer understanding the utterance but by the utterance having a

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[14] "Intentionality" is the 'aboutness' of an utterance. So that in the assertion: "The sun is hot today" the word "sun" has the actual sun as its reference. The word "sun" refers to the sun, is about the sun, is aimed at the sun. Therefore the whole sentence is in some way aimed at, targeted at, and is about the sun. The intentionality of the sentence is that it is about the sun. Thoughts also have intentionality. This is not surprising as language is simply a symbolic expression of a thought.

particular effect upon the hearer. Such acts include utterances intended to cause the hearer to have certain beliefs, or act in a particular way. The locutionary origins are also not forgotten in Searle's scheme. Searle talks of speech acts having "conditions of satisfaction" which can be explained as follows: When I make a verbal utterance in someone's presence, say that I utter "Watch out!", I have the locutionary intention of verbalising the words "Watch out!". The fact that these words are said by me is the condition of satisfaction of the locutionary intention. In addition, there is the illocutionary effect which is that the phrase "Watch out!" is capable, in virtue of the constitutive rules of the English language of being understood as a meaningful sentence of language rather than being a meaningless noise. The hearer, if they happen to be a speaker of English, knowing the constitutive rules of the English language, can recognise the utterance as a sentence being said to him or her and it is my illocutionary intention that they should so do. Consequently if the hearer recognises the utterance as a meaningful phrase then the illocutionary conditions of satisfaction of the utterance are fulfilled. In addition the utterance can have a perlocutionary intention (in this example it is a warning) so that my perlocutionary intention is that the hearer should come to recognise the utterance as a warning. If the hearer does so then the perlocutionary conditions of satisfaction are fulfilled. The same analysis can apply to non-verbal speech acts: When I wave at someone, I have the intention (locutionary) of raising my hand. The fact that the hand goes up is the condition of satisfaction of this original act. In addition, there is the illocutionary effect which is that the raising of the hand is a wave rather than a meaningless movement. The person at whom I am waving recognises the act as a wave. If the viewer recognises the

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hand raising as a wave then the illocutionary conditions of satisfaction of the act are fulfilled. But in addition the wave can have a perlocutionary effect (for example in a warning) and in that circumstance the viewer may come to recognise the wave as a warning. If the viewer does so recognise the wave then the perlocutionary conditions of satisfaction are fulfilled.

It can be seen that it is perfectly possible by means of this analysis to add conditions of satisfaction to conditions of satisfaction and thus to produce utterances and actions which have complex sets of meanings in complex sets of circumstances. That is to say, layer upon layer of meaning can be added using the constitutive rules of language and of social behaviour to the effect that when an utterance or action is made, with always the proviso that these should be understood by the hearer or viewer as a meaningful utterance or act, the hearer should still come to respond to the utterance or act concerned. This is simply an aspect of the generative rules of language. Searle makes the observation that the general formula for any constitutive rule is that X (the act or utterance) should count as Y (have a meaning shown by the conditions of satisfaction of the act or utterance) in circumstances C. For a proper analysis of any speech act it is necessary to interpret each layer of meaning in terms of the formula "X counts as Y in context C" (p. 35). This formula has the important consequence, to which we shall return, of being able to distinguish between "brute facts" and "institutional facts."[15] The former are facts which do not depend upon any constitutive rule such as that the sun is 93 million miles away from the Earth. The latter are facts which have a meaning given to them by the

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[15] Searle defines a "institutional fact" as "They are indeed facts; but their existence, unlike the existence of brute facts, presupposes the existence of certain human institutions. It is only given the institution of marriage that certain forms of behaviour constitute Mr. Smith marrying Miss Jones" (Searle, op.cit., p. 51).

operation of a constitutive rule so that they form part of a set of human institutions. Examples are facts such as a movement being the scoring of a goal in a game of football. Brute facts tend to make up physical facts such as the empirical foundations of the natural sciences. Institutional facts have conventional meanings. It may be argued that the brute fact "the Sun is 93 million miles away from the Earth" appears to be an institutional fact on this analysis as the distance is measured in miles (which are a system of measurement conventionally recognised by the use of constitutive rules) but this is a mistake. The distance, however measured, does not depend upon any human institution at all. The distance is utterly independent of any human institution. It is only the units of measurement that import the institutional practice of measuring by the human convention of miles.

Language, being made possible by a system of constitutive rules, is of course made up of institutional facts, but they have a special and privileged role. No human institutions would be possible at all were we not to possess language. All forms of institutional fact ultimately devolve upon our linguistic ability. To put this another way, the reason why dogs, cats and even monkeys do not have institutions is because they do not have language. A dog, cat or monkey is, like us, a sentient, conscious being, capable of various pre-linguistic reactions, but none of them is able to create institutions or give intentional meanings to their behaviour at any level of complexity. Searle describes this particular line of thinking as the "top down" enquiry where you go from language to its origins in the mind. This is when you ask the question "if we took away our language, what would we have left?" He concludes that language is a development of pre-linguistic biologically more basic forms of intentionality. He

contrasts this with the "bottom up" approach where you start with language and investigate the institutions and institutional facts which create our civilisation. He concludes that what is distinctive about civilisation is that all institutions and institutional facts like money, universities, governments, cocktail parties, and so on, can all be seen as explained by repeated iterations of conditions of satisfaction upon conditions of satisfaction.

At the heart of Searle's social thinking is the claim that we are biological systems which have brains which are conscious and capable of having intentional thought. For example, my thought about the sun, which we know to be a ball of incandescent gas 93 million miles away from us and around which we and our planet orbits, has no qualities in common with the sun, indeed we may not even know those facts about the sun, but nevertheless my thought about the sun has intentionality, the quality of being "about" the sun, in some way the thought is "aimed" at the sun. And just as I as an individual may have intentional thoughts (which may include meanings and values), so a group of people may agree (or at least go along with) the ascription of certain meanings to certain things or persons. Thus it is possible to have "collective intentionality" and it is this phenomenon which makes sense of the idea of constitutive rules and their conditions of satisfaction in connection with institutional facts. Ultimately it is a matter of our biology and our consciousness. This means that had we started our discussion of Searle with the analytical philosophy of mind rather than that of language, we would, according to Searle, have to arrive to similar conclusions because of the phenomenon of Intentionality of our conscious thought which we would come either way to recognise. "Collective

intentionality" is therefore a very important concept for Searle. It is closely related to the conventions of language.

In "Expression and Meaning", Searle (1979, p. 8) takes issue with J. L. Austin's taxonomy of Speech Acts to which we alluded above. Searle proposes an alternative taxonomy (pp.12-13). He distinguishes five types of speech act: <u>Assertives</u> which commit the speaker to the existence of facts asserted (for example descriptions like "This book is red"); <u>Directives</u> which are attempts by the speaker to get the hearer to do something (for example, orders, requests, &c.); <u>Commissives</u> whereby the speaker commits him or herself to doing something in the future (and thus includes promises and predictions using words like "shall" or "intend" or "promise"); <u>Expressives</u> which indicate the speaker's psychological state concerning how they feel about a state of affairs (using words like "thank", "apologise", "congratulate", &c.); and <u>Declarations</u> in which the speaker (presumably duly authorised) declares that a particular state of affairs in the world has a particular institutional meaning and so (if duly authorised and the correct procedures are carried out – c.f. Austin's performatives) brings about a change in the status of a nominated object or person (for example getting married, declaring war, &c.). It should be noted that many of these have a direction of fit connecting the words with the world. Assertives have a word to world direction of fit ($\downarrow$) which means that the speaker intends to conform the words they speak to the way the world is (the downward direction of the arrow is to be understood as moving from mouth to ground (world)). Directives have a world to word direction of fit ($\uparrow$) because the speaker expresses in the words how he or she wishes the world to be (the upward direction of the arrow indicates that the addressee will change the world

(ground) so that it should rise to match the statement made by the mouth). Commissives also have a world to word direction of fit (↑) as the speaker commits him or herself to bringing about a state of affairs in the world at a future time. Expressives which have no direction of fit (Ø) since the words simply ascribe some property to the speaker's own psychological states and do not refer to the world directly. Declarations fit the world and word together by expressing how a state of affairs in the world is to be given a particular meaning (↕).

This analysis involves powers to create changes in the world. Directives exercise power by the ordering speaker over the hearer who is thereby obliged to make the changes (assuming that the order is felicitous and so the orderer has the necessary recognised authority). Commissives bind the speaker to do something in the future and thus creates an obligation (which is most likely owed to the hearer – although it could be understood as acknowledgement of an obligation to someone other than the hearer, or indeed to no-one at all in the sense of committing oneself to ethical action). Declarations only have the powers they have if it is assumed that the speaker has the requisite authority to make the declaration. Neither Assertives nor Expressives directly give rise to power relations. Searle as we shall see regards Declarations as the basis of all social action and institutions.

So, in Searle's taxonomy, the most important of these speech acts are the Declarations. These have a particular social function, namely that of creating institutional facts. Searle gives the example of money. Paper money is, from the point of view of a scientist, nothing but pieces of paper or plastic with characteristic ink stains on them. But they are treated as money, treated as

units of economic power, accepted as money. Those that have money have economic power over those that do not. It is an institutional fact that paper money is so treated in the legal jurisdictions where paper money is legal tender. It is governments, originally banks, that issue paper or plastic money and thus create by declarations the now well established practice of using paper or plastic money. (Technically, very little of the money that exists, exists in the form of paper or plastic money. There is no drawer in the bank that contains the investor's money. Today, in the digital age, most money exists in the form of electronic traces on magnetic storage media. There is therefore no object which is the bearer of the declared status. The status is, as it were, flying free of its original source. But this should not worry us unduly. The point for this exercise is that money is created by declarations by duly authorised persons and retains its powers because members of society acknowledge its existence and the existence of the powers that it gives rise to.) In the same way as for money, objects and persons can be declared as having an institutional status which, from a purely scientific viewpoint it does not otherwise qualify for. Searle calls the effect of such declarations "status functions" for after the declaration the object or person is, through general acceptance, endowed with the status. Status functions give rise to what Searle calls deontic powers. A piece of paper or plastic money has economic power. Possession of the money gives the possessor economic rights. Other status functions may give a person powers, such as a university making a person a professor to the effect that they are employed to teach, or a president being created by being voted into office. Other status functions may create liabilities or duties. Being a citizen makes

one liable to pay taxes on one's income. Parking a car in a particular space may make one liable to a parking fine.

Declarations, directives and commissives are also important in the realm of practical reasoning, while Hume thought that we were motivated to act upon our passions, emotions and drives rather than our reasoned judgements, (that is that we act upon our strongest desires rather than reason captured in the phrase "Reason is and ought only to be the slave of the passions" (Hume 1972: Book II, Section III 'Of the influencing motives of the will')), Searle rejects this idea. We are not always motivated by our desires alone. Instead the deontic powers created by status functions provide us with "desire independent reasons for action" (Searle, 2001, pp. 29 and 176-179) and indeed these can provide a basis for all our thinking about social and moral obligations. Searle (2010a) says:

> "the best way to see how one can be motivated to act on something one does not otherwise desire is to see how one can be motivated to accept the truth of a proposition that one does not otherwise want to believe. If I have a medical test that delivers very unpleasant results – let us suppose I am told I have a terminal ailment and less than two months to live – I do not wish to believe that. All the same rationality requires me to accept it. In this case I have a desire independent reason for accepting it. … If I recognise that I have made a promise, then I have a desire independent reason for keeping the promise; and it is no good to say to that, "Yes, but is only because you want to keep your promises." I do indeed want to keep my promises, but the desire to keep my promises comes from the nature of promising rather than the nature of promising coming from my desire to keep them." (pp. 130-131).

As far as a theory of meaning is concerned, Searle accepts the intentional theory of meaning he has taken over from Austin, Grice and Strawson. He emphasises that a word may contribute to the meaning of a sentence through the formal powers of syntax. But a sentence, as a basic unit of meaning, is not sufficient on its own. This is because to understand any sentence requires that

we have knowledge not only about the usual conventional meanings of words

(the practice of using words in this way), but also about two further concepts

which arise out of the nature of intentionality. These concepts are the network

and the background. The network is the set of other beliefs and commitments

which make the intentionality of a sentence meaningful. The background is that

set of abilities that human actions can have. Searle says:

> "Say for example, I now intend to drive to my office on the university
> campus. What must I believe, desire, and so on in order to have the
> intention to drive to the office? It turns out that it is a rather long list, and I
> will not even attempt to state all or most of it. I have to believe that I have
> a car and that I am able to drive a car. I have to believe that such and
> such is the route to the campus, and I have to believe that cars are a
> means of transportation and that they operate on streets and are driven
> by drivers of which I am one. … I take it for granted that I will be
> travelling on the surface of the earth …" (p. 31).

What view of human nature does Searle hold? In a lecture series in the

University of California, Berkeley, Searle gave the following summary:

> "We have a certain self-conception of ourselves as being conscious,
> mindful, rational, intentionalistic, ethical, moral. We think we have
> freewill. We're certain that we're capable of using language. We organise
> ourselves into societies. Now how do we reconcile that picture of
> ourselves as free conscious, rational agents into a universe consisting
> entirely of mindless, meaningless particles? In a way that's been the
> dominant question for some centuries but it has emerged I think in a
> particularly stark form in the past few decades" (Searle, 2010b).

Whilst we have said above that Searle asserts that Declarations are able

to give deontic powers, it does not follow, though Searle makes little or nothing

of it, that the other forms of speech act do not have deontic powers and do not

contribute to the creation of social interactions and to society. In fact with the

exception of Assertives which are used to make descriptive assertions about

the world (though even these may be used to express or assert that a power

exists), all of the other three forms of speech act can give deontic powers. A

Directive clearly asserts that the speaker has a power over the hearer. A Commissive clearly asserts that the hearer has a power over the speaker. Both Directives and Commissives form a very important part of our experience of the social world, particularly in law. What is a Criminal law if it is not a statement, extended though it may be, which is a Directive addressed by the State powers to citizens to oblige them to do or forebear to do some particular specified act? What is a contract or business agreement if it is not a written or verbal agreement containing a set of Directives and Commissives whereby the parties to the agreement create respectively rights by one exercisable over the other or obligations by the other undertaken to the one? And Expressives can also assert power and status as where a form of speech is used that is derogative or dismissive. This being the case, it seems that there is a whole realm of tacit power assertions being used in everyday and formal speech, of which Searle makes nothing. This is a notable omission from Searle's theory of Speech Acts and it also weakens his Theory of Society to which we shall return.

6.5 Pinker on Politeness

Pinker (2007) discusses the touchy subject of politeness. His starting point is Goffman's observation that when people interact they are very concerned to project an acceptable image of themselves ("front" or "face") and so they will act in their speech to try and reduce the possibility of losing credibility, and will try to save their face from embarrassment. Pinker is of the view that politeness is a form of empathy generated between the speaker and hearer that creates a sense of closeness and solidarity which is often fostered by informal or

inclusionary speech. The extent of politeness which is used will be related to the level of the threat in the discourse. It is intended to allow any necessary face saving. Pinker states:

> "Politeness is calibrated to the level of threat to the hearer's face. The threat level in turn depends on the size of the imposition, the social distance from the hearer (the lack of intimacy or solidarity), and the power gap between them. People kiss up more obsequiously when they're asking for a bigger favour, when the hearer is a stranger, and when the hearer has more status or power" (p. 383).

In this way Pinker acknowledges that power relations are a major part of the reason for politeness. When a speaker asserts a power which is not recognised by the hearer, the hearer may use speech to express surprise, and is likely to use informal or inclusionary language to redress the balance. Levels of expected threat vary from linguistic community to linguistic community. Languages which have a formal as opposed to informal pronouns are more likely to exhibit standard rude or polite behavioural responses when a speaker gets the appellation wrong. Even in English when a respectful address is expected, exception may be taken to the use of first names. This is too informal for the dialogue. The use of first names suggests an intimacy which may be inappropriate in a more formal context. Pinker is of the view that, although politeness is a human universal, different cultures may routinely have different expectations regarding the use of politeness. This effects not only the different words used but also the sensibilities of people within the cultures. For example Japanese culture is very respectful as is shown by behaviour and expressed in language. Usages may also vary within a single language community. For example in the USA New Yorkers are famously rude by the standards of other Americans. Pinker asks why different cultures have different degrees and kinds of politeness? His view is that some societies are more hierarchically structured

than others. In such societies there will be a greater expectation of politeness, and members of that society will expect a greater social distance around them to be respected.

Indirect speech is of particular note. Indirect speech occurs when a person does not make a request or demand directly, but, as a result of the requirement to be respectful, will use an indirect expression. One example is the request to pass the salt. The direct request is an order: "Pass the salt." This asserts a power relation of the speaker over the hearer. This is unlikely to be regarded as sufficiently respectful in most circumstances. In order to be respectful, a speaker is likely to ask indirectly using an indirect speech act like: "Could you please pass the salt?", "Can you pass the salt?", "Is there any salt over there?", or even "I wonder if you might pass the salt." The rationale is that the direct request has the form of an order and so expresses a power relation over the hearer which is not normally warranted by the context. It is better to express the desire ambiguously so far as power is concerned so that it comes out as an assertive of a situation ("I wonder if there is any salt at your end?") or a request for advise ("Is there any salt there?") which is interpreted as a request for the help of hearer to grant a favour to the speaker. Politeness allows the hearer implicitly to ignore or refuse the request rather than acknowledge that they are being given an order to pass the salt. This is face-saving for both speaker and hearer and defuses any supposed power structures that might otherwise expressly or implicitly be thought to exist.

Situations where such defusing is required are likely to occur quite frequently as the forms of speech of directives and commissives, and sometimes expressives, are likely by their nature to assert power by one party

over the other. In this way indirect speech acts can rapidly defuse an unintended power assertion.

6.6 Searle on Society

Searle (2010a) continues and develops his Speech Act theory making it more general in operation. In his view the move that "X counts as Y in context C" allows for the creation of any number of desire-independent reasons for action. Language is itself a matter of public conventions as there is no such thing as a private language. And so it gives speakers the opportunity for any individual or group of individuals to assert that they have rights over others. It is therefore possible for those who authoritatively hold powers within a society to declare the existence of a whole range of institutional facts. Searle gives an example of some typical social institutions created in this way:

> • "Government institutions: legislature, executive, judiciary, military, police.
> • Sports institutions: the National Football League, amateur baseball teams, local sporting clubs.
> • Special-purpose institutions: hospitals, schools, universities, trade unions, restaurants, theatres, churches.
> • Economic institutions: industrial corporations, brokerage houses, real estate agencies, businesses, partnerships.
> • General-purpose structural institutions: money, private property, marriage, government.
> • Unstructured informal (mostly) unqualified institutions: friendship, family, love affairs, parties.
> • General forms of human activity that are not themselves institutions but which contain certain institutions: science, religion, recreation, literature, sex, eating.
> • Professional activities that are not institutions but contain institutions: law, medicine, academia, theatre, carpentry, retail trade" (pp. 92-93).

There are an infinite number of ways that any particular society can be structured.

Searle says that all institutions are ultimately created by a declaration which confers a status function to the institution. This can be implemented in a society in an infinite number of different ways. But every society is likely to have institutions of these sorts.

Once a declaration has been made, the question must be asked why the status should continue in existence? And one has to ask who, in a given society, has the right to make a declaration that creates an institutional fact. It is likely that at the time of creation, conditions for the continuing operation of that institutional fact, a time limit for its existence, and indeed many other conditions on the exercise of its powers are likely to be expressed in the originating declaration. As far as who it is who can make a declaration is concerned, generally the reason why an institutional fact will be declared is because there are persons who already stand in positions of power who, in terms of the institutional powers given to them, or to persons holding their office, they have the power to make declarations of the sort concerned. In other words, in order for a declaration to be valid, and so in order for an institutional fact to be created, the creator must already possess by means of another declaration the power to carry out the act concerned and on the conditions concerned. Some institutions hold the highest level of power and authority. Only a government can create a criminal law. This is because it is part of the accepted function of governments and only governments to do so. Membership of the government itself depends on other institutional facts. The existence of the institution of government depends on institutional facts. In any society there will be a whole range of institutional facts, each created by a declaration, which together, like a network, support the existence of the other institutional facts.

Governments can get away with creating criminal laws because the members of the government are, in general, democratically elected by the adult members of the society over which they rule. The voters all therefore have a stake in who the government is. But this need not necessarily be the case. Any person who holds power, whether they have grabbed power and can defend their power, or for any other reason, is de facto able to impose their will on those less powerful by them using declarations in order to create institutional facts over those others. It is only because democracies are stable holders and utilisers of power, that their acts are unlikely to be questioned.

So far as the conditions on the exercise of institutional powers is concerned, an individual who has a status function which allows them to create rules or regulations, will usually only hold their powers for as long as they hold the office. Governments, however, by means of a fiction, can continue to hold power tacitly even after the Parliamentary session concerned has ceased. So laws issued by one government administration do not cease to exist when that government ceases to hold office. Rather such powers are deemed to continue in existence tacitly into the following session of the government and beyond unless and until repealed.

Searle (p. 121) asks "What is the role of imagination in creating institutional reality?" He knows that a status function doesn't really exist except insofar as it is represented as existing. And he acknowledges that this involves an act of imagination in which the creator of the institutional fact and those over whom the power is exercised all participate in. This can occur at all levels in society where declarations are used to create status functions. Searle states:

> "As far as the ontogenic development of this human capacity is
> concerned, it is worth pointing out that human children very early on

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acquire a capacity to do this double level of thinking that is characteristic of the creation and maintenance of institutional reality. Small children can say to each other, "Okay, I'll be Adam, you be Eve, and we'll let this block be the Apple." This, if one allows oneself to think about it, is a stunning intellectual feat.… If in fantasy we can count an X as a Y that it is not really, then with maturity it is not at all hard to see how we can count an X as a Y where the Y has a kind of existence, because it regulates and empowers our social life, even though the Y feature is not an intrinsic feature of nature. Notice that you can't do any of this without language. The children cannot think "I'll be Adam, you be Eve, and we'll let this be the Apple" unless they have some linguistic vehicle to form the thought and express it. Notice, furthermore, a deeper point: that children typically don't think this about the words themselves. In general they don't say, "let this block be a word, and we'll pretend that it means such and such." At an early age a child can think, in fantasy, a double level corresponding to brute facts and institutional facts. But it is hard to make the same move for language. Adults have a similar blind spot where language is concerned. It is not at all difficult for adults to see the distinction between words and their meanings. But it is very hard for adults to think away language altogether, to imagine what it is like without language at all" (pp. 121-122).

Searle stresses that, because declarations are so important in creating social relations, all societies will have a network of interrelated declarations giving status powers. The precise content of those powers and the number of them may differ, but there is a need in every society to have an organised system that holds, controls and uses the powers which are inherent in any form of speech act, and therefore the construction of society can be viewed, in Searle's way of thinking, as an "engineering problem". It is also important to note the kinds of things that the declarations are, speech acts of a declarative sort, it is inevitable that the powers which are asserted will at some stage be expressed in terms of general rules or more formally as laws. All societies therefore will have a system or systems of laws and authoritative rules. Again there is an infinite number of ways in which this may be expressed, but there will always likely be a set of core laws or rules from which other rules and powers are derived. In many societies this may be identified with the Constitution.

Searle asserts that there will always be an assumed set of widely held knowledge and abilities which are a necessary set of assumptions for the existence of any system of speech acts. He describes these as the Background and Network assumptions (these are referred to above). He states that amongst others norms of behaviour will form part of the background and network. These will comprise express legal rules and regulations but will also include the moral norms of the community. Searle observes that if someone violates the moral norms of the community then it is likely that sanctions of some form or another will be imposed. He accepts that these may vary in expression. They may for example be forms of "ostracism, contempt, hatred, derogation, and even violence" (p. 157). Where a moral norm has been violated, and there is no formal sanction system in force, then it follows that anybody can exercise power over anybody else, except in so far as further rules of behaviour will constrain them. Searle states:

> "The basic concept of background power is, that there is a set of background presuppositions, attitudes, dispositions, capacities, and practices of any community that set normative constraints on the members of their community in such a way that violations of those constraints are subject to the negative imposition of sanctions by any member of the community.… Who exercises power over whom? The answer is anybody who accepts the background presuppositions and knows that these presuppositions are widely shared in the community can exercise power over anybody who violates those presuppositions. The form in which those powers are exercised, or attempted to be exercised, ranges all the way from expressions of disapproval, contempt, ridicule, shock, and horror to physical violence and even murder" (p. 160).

Searle knows that, even less formally, some background capacities do not involve matters of power at all. He gives the example of people who are disposed to stand away from each other in elevators, so as to preserve individual private space, or when they are carrying on a conversation. He

regards this as a background disposition, but not one that involves a power relationship.

Searle notes that it is the government of a country which has the most powerful system of status functions. This is generally referred to as "sovereignty". This term usually implies transitivity so that the government has power over everybody, even though it may exercise its power through nominated officials. Nonetheless it is equally possible to create other systems with a different means of distribution of power whereby A has power over B and B has power over C, and so on. It follows that A has power over C and all those further down the line, but this manner of distribution, though it may be a form of power expressed in martial rule or in a dictatorship, is not typically true of a democracy. There are a large number of ways in which a society can be organised. For, of course, a disorganised group of people, is not a society at all.

On a final note, Searle addresses the question of human rights. He regards these as a possible form of status function. It is perfectly possible that a person in a society may be deemed to have rights simply because they are an individual member of the human race. But such rights would require to be acknowledged and enforced by other institutional rules of the society concerned. In other words human rights will normally be recognised and enforced only where there is a system of law which acknowledges the existence and sets out to enforce the rights concerned.

6.7 Bakhtin, Discourse and Narrative

Bakhtin was a literary critic and theorist whose main concern was the critique of novels and other literary texts. However he also applied his mind to the philosophy of language of his time and in doing so he developed, entirely independently a theory of dialogue which is strongly reminiscent of Austin's and Searle's except that in some respects he goes further than them by suggesting that a dialogue, being a succession of speech acts, later ones being a response to the earlier, involve a negotiation of meaning (an "agreement") or purpose. Bakhtin's theory of discourse (or "dialogue") was developed, not by observing everyday discourse, but rather by examining a range of literary texts of various genres. This perhaps made his task more difficult (it is certainly more difficult for the reader) and his most advanced thinking can be found in the paper "The Problem of the Text in Linguistics, Philology and the Human Sciences: An Experiment in Philosophical Analysis" (which is reproduced in the book 'Speech Genres and Other Late Essays' (Bakhtin, 2010).

Bakhtin first discusses the different genres of text in which dialogues are contained. Each text has an author who places dialogues into the text in order to fulfil some conceived plan. Generally the plan is manifested fully, but there are occasional slips of the tongue (Bakhtin refers here to Freudian slips) or slips of the pen. Bakhtin notes that a dialogue involves both the language in which it is written which contains structures of words in the form of utterances which may be used many times in many places by different people. They therefore have a linguistic generality. However, in the text the utterances fulfil the particular plan of the author and they have a context. So in the text the

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utterances become "individual, unique and unrepeatable" (p. 105). Bakhtin says:

> "Language and speech can be identical, since in speech the dialogic boundaries of the utterances are erased. But language and speech communication (as a dialogic exchange of utterances) can never be identical. Two or more sentences can be absolutely identical (when they are superimposed on one another, like two geometrical figures, they coincide); moreover, we must allow that any sentence, even a complex one, in the unlimited speech flow can be repeated an unlimited number of times in completely identical form. But as an utterance (or part of an utterance) no one sentence, even if it has only one word, can ever be repeated: it is always a new utterance (even if it is a quotation). (p. 108)

The manner in which the author presents the utterances reflects a context made manifest by means of the tone of voice of the supposed speaker(s).

There are technically at least four persons involved in a written dialogue. There is the author who has executed the plan in the text, the speakers and hearers who carry out the dialogue, and the listener or reader who watches on. Texts influence people (this is true both of the parties who are directly involved in the dialogue, but also of the listener or reader. Bakhtin notes that the influence does not come about through any causal verbal reaction (as Behaviourists might suppose – Bakhtin is critical of any causal interpretation of texts) but rather comes about through a process of active understanding and engaging with the text. The author to some extent always reveals him or herself and their personality because "Any truly creative text is always to some extent a free revelation of the personality" (p. 107). But in most cases, the author, as it were, drops out of consideration leaving the purposes of the text to be fulfilled by the parties engaged in the reported dialogue. Bakhtin suggests that the author may leave traces in the text like a painter whose manner of painting a picture leaves traces. He says: "For example in a painting we always feel its author (artist), but we never *see* him in the way that we see the images he has

depicted" (p. 109). However there is also a fourth person to be considered and that is the listener or reader. In a sense the text is really addressed to the listener or reader. At one stage Bakhtin uses the term "addressee" for this person.

Returning to the speakers and hearers in the dialogue, sometimes one of these may be "objectified and paradigmatic" with no truly dialogic relations, but this does not mean that his silence or gestures mean nothing.

The dialogue involves the depiction of people and here emotions enter in for they "can be loved, pitied and so forth" (presumably by the listener or reader)? And we may feel "love, hatred, pity, tenderness and emotions in general" (p. 113) for a party who is engaged in the dialogue.

The dialogue presents utterances. But they do not occur randomly. Every utterance has a context and is provoked by what has preceded it. Equally an utterance will be followed by another or by an action. At any particular point in time we do not know how the response will be made. Language contains infinite potential. But as the dialogue proceeds it creates the "world view" or "view point" of the individual speaker and thus character is built up (much as the paint on a canvas builds up the people portrayed (p. 119). The flow of utterances fulfils the author's plan but also the dialogue is seen to be a place of the meeting of voices in dialogue which perform and create meanings. In a crude form a dialogue can be unidirectional as in "an argument, polemics or parody". But in its fuller form a dialogue is an agreement where a meaning is negotiated between the parties to the dialogue. Bakhtin writes:

> "Confidence in another's word, reverential reception (the authoritative word), apprenticeship, the search for and mandatory nature of deep meaning, *agreement*, its infinite gradations and shadings (but not its logical limitations and not purely referential reservations), the layering of

meaning upon meaning, voice upon voice, strengthening through merging (but not identification), the combination of many voices (a corridor of voices), that augments understanding, departure beyond the limits of the understood, and so forth. These special relations can be reduced neither to the purely logical nor to the purely thematic. Here one encounters *integral* positions, integral personalities (the personality does not require extensive disclosure – it can be articulated in a single sound, revealed in a single word), precisely *voices*." (p.121)

And again:

"One cannot … understand dialogic relations simplistically and unilaterally, reducing them to contradiction, conflict, polemics, or disagreement. *Agreement* is very rich in varieties and shadings. Two utterances that are identical in all respects ("Beautiful weather!" - "Beautiful weather!"), if they are really *two* utterances belonging to *different* voices and not one, are linked by dialogic *relations of agreement*. This is a definite dialogic event in the interrelations of the two, and not an echo. For after all, agreement could be lacking ("No, not very nice weather," and so forth." (p. 125).

Finally Bakhtin considers the listener or reader. He says that there is always an "addressee" to whom the dialogue as a whole is addressed. But he points out that there is also a super-addressee who is an ideal holding truly responsive ideologically timeless values. He describes this aspect as "God, absolute truth, the court of dispassionate human conscience, the people, the court of history, science, and so forth" (p. 126). This is perhaps an appeal to the realm of culturally valued moral and other values and the other Background (to coin Searle's term) presuppositions.

As can be seen, there is a large amount of overlap with Austin's and Searle's views of Speech Acts. But with Bakhtin there are other aspects. He considers more carefully the overall purpose of a discourse which is to be found in the meanings which are negotiated between the participants. He also gives consideration to the purposes of the discourse and to the emotional dynamics and values which are expressed. In his way Bakhtin's account of discourse is

much richer and more realistic than the accounts of Austin and Searle. We can also see that Goffman's account of self presentation by means of masks, fronts, and role play sits much more neatly into Bakhtin's account. But one thing that all of Wittgenstein, Austin, Searle and Bakhtin would agree in is, that behind all speech, there is a stock of cultural knowledge, dispositions and attitudes which are necessary if we are to gain a full understanding of any Speech Act or Discourse. It is not within the scope of this thesis to say what this stock comprises. It would be impossible to do so. It is therefore not possible to talk about any particular culture or its cultural artefacts and products. That would be impracticable. However, the above accounts taken together lay out a logical structure in the form of rules, laws, conventions, knowledge, values, powers and emotions which the account of any specific culture must address if it is to be sufficiently comprehensive. Unfortunately, as we shall see, few accounts have had this level of comprehensiveness. We shall therefore proceed to consider some evolutionary strictures and thereafter look briefly at eight accounts before finalising this chapter with a brief discussion of methods and conditions of satisfaction. Finally we shall give a Cultural Theory of Meaning which is relevant to the social aspects of human culture and interrelations.

6.8 Culture and Evolution

In recent years, under the influence of sociobiology, culture has been understood as a social tool which allows human beings to live in an organised way within their natural or home environments safe from external (environmental) threats and internal (social threats such as violence and crime).

The cultural tool also enables humans to exploit the natural resources and to co-operate to achieve social purposes efficiently. In view of this rising view we, now turn to consider the views of a number of writers in this field: Sagan, Humphrey, Lewens and Pinker.

6.8.1 Sagan

Sagan interprets living things in the natural world as involving collections of organised bits of information. Information is stored in all living creatures in the form of DNA. Human DNA contains something like 5 billion bits. However the demands of surviving in the natural environment has required human beings and animals to process information much faster than the simple uncontrolled reactions of unconscious life. That is the reason why brains have evolved. During evolution the brain has become increasingly complex both in terms of its morphology and also in terms of its information content. The language of the brain is not DNA but is rather neurons which are "microscopic electrochemical switching elements, typically a few hundredths of a millimetre across" (Sagan, p. 304). There are approximately 100 trillion connections in the human cerebral cortex. We require our brains in order to survive. Nevertheless our brains are not sufficiently complex to be able to contain all the information which we need to live in contemporary societies. As a result over the last 10,000 years, it has been necessary for humans to keep a store of information outside of our own bodies. This, according to Sagan, is the origin of writing, and thereafter of libraries of information. Sagan is writing too early to appreciate the extent to which human data storage and retrieval would become computerised in a way accessible to the public. But of course he would have extended his analysis to

include such storage and retrieval systems. The point that he is making is that having this ability to store and retrieve information, externally to the human body, and therefore not merely dependent upon our own experiences and memory, gives us both our intelligence and also a great ability to survive against the odds. Human beings are the first animals able to change the environment in which we live and further we can adapt to survive in new and previously (for us) lethal environments. The ability to store and retrieve information outside of our bodies means that we have to have a system to communicate this and this is language. Thus language and in particular writing has, according to Saga, given us our intelligence and also a huge evolutionary advantage over other species.

6.8.2 Humphrey

Humphrey ascribes the development of brains and social intelligence to evolution. He makes the link between the size of human brains and our need to compete. Darwin's theory of evolution suggests that "little if anything exists in nature without a reason" (Humphrey, 1987, p. 36). His book "The Inner Eye" is in many ways a search for the reason why brains have evolved to be so intelligent.

> Humphrey says, in regard to apes, of which human beings are one, that:

> "social intelligence is clearly the key to the great apes' biological success. It is in dealing with each other that these animals have to think, remember, calculate, and weigh things up inside their heads. And social intelligence requires every ounce of brainpower they have got." (p. 39).

He observes that the need for such computing power that the brain offers is related to the creation and maintenance of stable social groups. We also required to be able to "mind read". Creating social organisation demands the ability to create delicate networks of power and of connection. In any confrontation between two animals, they must know each other intimately and know their and the other's places within the social order. Social societies are organised on the basis of minute gradations of social dominance and submission, but there will also be triangular relationships, where the status of one member is enhanced by the higher status of near relatives. In social relations there still remain a continual number of confrontations and disputes about social dominance. Humphrey says:

> "The problems of creating and maintaining such a stable social group are quite another matter the social life of a gorilla may not, to an outside observer, look at all that problematical, but that is only because the animals themselves are so accomplished at it. They know each other intimately, they know their place. Nonetheless there *are* endless small disputes about social dominance, about who grooms who, about who should have first access to a favourite food, or sleep in the best site. Sometimes it is more serious: major disagreements about who should mate with who, about when a young male should be turned out of the family, or when and whether a strange female should be allowed to join them." (p. 39).

So it appears, if we take the analogy with great ape societies, that human societies are, in like fashion, organisations in which members will have continual tussles over their precise social position. Social organisation performs an important evolutionary role. Humphrey also makes the interesting observation that insight is the means whereby "mind reading" can be carried out. He says:

> "Insight is nonetheless our birthright and our greatest gift. Each of us begins life prepared by nature to create the world of other people in his own image. For a child there is no other choice. He sees in other people no more nor less than the feelings that he himself has known, and as he grows richer in himself the world around grows richer with him. The key to his future and to ours must lie in letting this childlike sense of *self-*importance live on into maturity, in the recognition that we can in the end give out only what we ourselves contain." (p. 176).

So it appears that all our understanding, modelling of the world and of each other, devolves upon our faculty of creative insight.

6.8.3 Lewens

Lewens (2015) thinks that it is not merely human beings that evolve, but our culture evolves as well. He takes the authority for this statement from Darwin's book "The Descent of Man and Selection in relation to Sex" (Darwin, 1871, p. 60). Darwin states that:

> "the survival or preservation of certain favoured words in the struggle for existence is natural selection" (p.60).

In other words, as we ourselves evolve so do our cultures in parallel. It is notable that Lewens identifies texts as being the main source of the external information which forms our culture. Lewens suggests that there are three alternative ways in which cultural evolution can take place. The first form is the historical approach in which cultures change as a result of differing external forces manifested in history. Cultures therefore reflect major historical changes in society. The second approach is the cultural selection theory which refines the historical approach by saying that the forces which make changes to culture are those that come from within the society which has the culture concerned. The change is a natural progression of ideas for there are small changes as one generation passes skills, values, folk knowledge, technical scientific

knowledge, linguistic expressions, and so forth to the next. The culture is "handed on from parents to offspring by formal teaching, by imitation and by other forms of learning." (Lewens, 2015, p. 10). The third form is kinetic theory in which our culture responds to the sudden advent of new ideas, skills, and technology as a product of these new skills arriving from other cultures when members of one culture meet members of others. This is likened to "cultural drift" by a number of writers. Lewens himself prefers the kinetic theory as he thinks it is required to explain the sudden appearance and adoption of new forms of knowledge and skills and so on. Another interesting feature of his theory is that the forms in which culture must always take, those elements which may be common amongst different cultures, derive from our human nature. It follows that a study of our human nature should be undertaken in order to reveal those features in our nature and those features in our culture which progress in parallel. Lewens does not undertake this work himself but lays out the difficulties in theory and in practice in doing this task. He thinks it may be difficult to identify any general features of human nature shared by all since we may be dealing more with questions of family resemblances. It would seem, however, that a study of human nature, and its relation to cultural artefacts and texts, may well be beneficial and timeous.

6.8.4 Pinker

Pinker in "Language, Cognition, and Human Nature" (2013), asserts that the human mind, like other complex organs, owes its origin and design to natural selection" (p. 362). He asserts that we occupy a "cognitive niche" and explains this idea as being that: "in any ecosystem, the possibility exists for an organism

to overtake other organisms' fixed defences by cause and effect reasoning and cooperative action" (p. 351). He describes our culture as being "hyper-developed" with respect to the rest of the animal kingdom and makes three important observations. The first is that human culture stands out because of the extent of the complexity of our technical know-how. Whilst tools are used by other species, the complexity of human tools, coupled with the knowledge that goes along with their existence and use, is unique to human beings. The second feature is that human beings cooperate with other members of the human race even though they are not related to them in any way. In monkey and ape societies, apart from the human, societies consist of social groups made up of related individuals – an extended family. This is not so with human beings. Furthermore human societies are organised by reason of rules for distribution of resources, reciprocal altruism, mutualistic sharing, and deference to dominant individuals. These kinds of organisation are unique to human beings because they require the faculty of language to achieve. And only humans have language. He asserts that because of this complexity, it was necessary for humans to develop in attributes of "politeness, hypocrisy, ritual, and taboo" (Ibid., p. 352). The third observation Pinker makes is that human beings have grammatical language. Other animals communicate but not within a grammatical language. Grammatical language is required as a prerequisite of complex social organisation. A final observation is that, and is perhaps for our purposes the most important, "cognition, language, and sociability" develop in parallel. (p. 355).

6.9 A Definition of Culture

Defining "culture" proves a difficult task because there are so many different ways of doing so. Some thinkers define "culture" to mean some division of human creative activity identified as expressing a particular civilised level of achievement. This might be seen as "high culture" and would include literature, music, art, drama and similar. Other thinkers, whilst eschewing high culture still use culture to refer to high quality (for example a "cultured man"). Other still use "culture" to refer to moral and spiritual values. The Cambridge Dictionary gives the following definition: "the way of life, especially the general customs and beliefs, of a particular group of people at a particular time." This study would adopt this definition but would add that it should also include knowledge, skills, know-how, practices, values and the products of culture. Very little turns on the issue of precise definition, but in this thesis our target is how and why people live together in a society and so it would seem realistic to adopt a broad definition of the type indicated. We shall now examine some ways in which of the culture of Western society has been understood by a number of scholars. This is not intended to be exhaustive but illustrative. We are concerned to show what sorts of minimal requirements a "culture" should generally include.

6.10 Tylor

In 'Primitive Culture,' Sir Edward Tylor (1871) defined culture as follows:

> "Culture or civilisation, taken in its wide ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society" (p. 1).

Tylor states that cultures have evolved over many hundreds of years from humans in their primitive state down to the present day. Primitive human beings had the same inherited cognitive capabilities so far as abilities of thought and action are concerned as modern mankind but their cultures have transitioned from a savage state, through a barbaric state to the civilised life of the present day (or in Tylor's case the privileged life of High Victorian society – which is the ethnocentric viewpoint from which Tylor contrasts and judges the primitive societies). Tylor was influenced by Darwin's 'The Evolution of Species' (Darwin, 1861) and saw progress in culture as a form of evolution as it applies to human beings. The aim of a culture is to understand the forces in the world of experience (both natural and social), to gain some power over them, and to make life more tolerable. In this way survival is attained. Tylor's view is that civilisations achieve a general improvement in the standard of life by means of greater and greater levels of organisation, both of the individual and of the society in which the individual lives. This is sometimes referred to as the 'Progression theory.' The development of culture leads towards a Utopian future in which goodness, power and happiness are all maximised. The end product is termed civilisation and was already reached by the societies of High Victorian Britain and the United States.

As we can see from the definition given above, Tylor equated civilisation and culture together. He considered (1871) that the means for assessing the extent of cultural development could be measured by means of:

> "the principal criteria of classification are the absence or presence, high or low development, of the industrial arts, especially metalworking, manufacture of implements and vessels, agriculture, architecture, et cetera, the extent of scientific knowledge, the definiteness of moral

principles, the condition of religious belief and ceremony, the degree of social and political organisation, and so forth." (Vol.1, pp. 26-27).

It can be seen from this that Tylor considered that contemporary societies in Britain and the United States had reached the most advanced forms of culture and civilisation of his day – maybe even an end product in the progression, or a high point in civilisation and culture. He considered that, in the progression from states of savagery to a state of civilisation, those aspects of culture which promoted the development of culture come about by means of either the permanence of successful strategies, the modification of workable but non-optimised strategies in order to improve them, and the survival of successful strategies into subsequent generations. Civilisation and culture are therefore matters which are passed on from one generation to the next by means of a sort of inheritance. In addition there is "diffusion" whereby successful forms of culture are distributed outwards from regions of innovation towards those parts of society which lack the innovated cultural development.

Tylor says that there is a permanence of cultural forms when successful strategies are innovated. The form of cultural strategies involves varying cultural forms such as customs, arts or opinions which are passed down from generation to generation by means in particular of the forms of children's games, nursery rhymes, folklore, proverbs, riddles, myths and other expressions of superstition from which developed forms of religion may ultimately arise. It is perhaps curious that Tylor considers myths and superstitions as the primitive progenitors of organised religion since organised Christian religion is manifested in High Victorian civilisation. One of the roles of myth and religion is to produce moral concepts like sin, judgement, retribution

and good order in society. It would seem that magic, myth, religion, law, and morality are all essentially areas where there are judgements of right and wrong and where there are real or imagined powers within society to coerce the conformity with accepted standards of belief and behaviour. These later become abstract notions of morality, but a morality subjugated in its early formations to religious belief. Of morality he says:

> "Prayer, 'the soul's sincere desire uttered or unexpressed,' is the address of personal spirit to personal spirit. So far as it is actually addressed to disembodied or deified human souls, it is simply an extension of the daily intercourse between man and man; while the worshipper who looks up to other divine beings, spiritual after the nature of his own spirit, though of place and power in the universe far beyond his own, still has his mind in a state where prayer is a reasonable and practical act. … It is at later and higher moral levels that the worshipper begins to add to his entreaty for prosperity the claim for help towards virtue and against vice, and prayer becomes an instrument of morality." (Vol.2, p. 364).

Language is a key element in the development of civilisation as well as an indicator of the stage of development that a society has reached. The state of development can be to some extent assessed by means of looking at the grammars and words used by races at various stages in development. Tylor observes that educated and civilised people have developed the ability to conduct intellectual life through the means of complex linguistic forms such as speeches. His standpoint is ethnocentric in that he sees his own culture of High Victorian society as advanced and civilised while others are accordingly less developed. Similar ethnocentric judgements occur concerning the forms of cultural production. Tylor describes how language arises in the association of emotion and bodily expression (being displays of the state of a speaker's mind) with verbalisations of feelings "of pleasure or disgust, of pride or humility, of faith or doubt, and so forth" (Vol1, p. 165) and from these interjectional

utterances civilised language has developed. He spends a considerable amount of time considering the development of words from original settings closely associated with the relationships and forms of life of primitive societies and becoming increasing abstract. An important step in the development of civilisation is the art of counting and the development of numerical symbols, firstly by means of gestures and finger counting practices and secondly by means of symbolic expression.

As humanity develops, mythologies are developed to explain powers in the world in which primitive mankind lives. This leads to Tylor's theory of Animism whereby elements of the world of experience are given personalities and powers which explain their form, purposes and powers. He states:

> "So it is with the stars. Savage mythology contains many a story of them, agreeing through all other difference in attributing to them animate life. They are not merely talked of in fancied personality, but personal action is attributed to them, or they are even declared once to have lived on earth. The natives of Australia not only say the stars in Orion's belt and scabbard are young men dancing a corroboree; they declare that Jupiter whom they call "Foot of Day" (Ginabong-Bearp), was a chief among the Old Spirits, that ancient race who were translated to heaven before man came on earth" (Vol.1, p.290).

In his conclusion Tylor takes the view that organised religion, morality and law are key forces in the development of civilisation. Modern culture, though it has acquired advanced values and beliefs and has developed scientific ways of looking at the world, nevertheless contains many remnants of primitive culture which, by means of degeneration, have passed into superstitions and are likely finally to be destroyed and discarded. Presumably organised Victorian religion was exempt from this fate? Throughout the work Tylor refers to interesting examples and opinions derived from anthropological study by himself and others.

So far as our study of culture is concerned, although Tylor's view is taken from the vantage of high Victorian Britain, and his view is ethnocentric, he asserts the importance of beliefs, particularly mythological and religious beliefs, and the powers of morality and the law, as forces which are centrally involved in the development of culture. He shows that cultural innovations diffuse out into larger society, asserts that interrelated cultural forms and practices are "inherited" from generation to generation, and he generally asserts that culture is a property of a society in which the individual person lives and acts. A difficulty for Tylor, apart from the fact of his ethnocentricity, that he does not stress political and legal power enough as essential elements in the organisation of a society. Later scholars perceived this as a particular weakness.

6.11 Boas

Boas's view of culture can be seen as a corrective to much of Tylor's thinking. Boas dislikes ethnocentrism and also criticised the approach taken by Tylor in suggesting that cultures progress in a unilinear fashion from primitive to civilised. Boas considers that folk traditions and myth are the central means of expression of a particular peoples' ideas. He also thinks that a study of a society should include a study of its language and the suppositions that a language contains. He develops methods for analysis of cultures by insisting that it is necessary to take into account all of: environmental conditions, historical conditions, and psychological factors. His approach to studying a culture was to examine its entire ways of life. This meant that he considered its

language, social organisation, economic life, folklore, mythology and customs.

He considered also the customs and practices of the members of the society

and in particular the way that birth, marriage and death are manifested. He

noted, in the case of all the societies he studies, that during the raising of

children, parents hand on a body of knowledge and behavioural patterns

through a process of enculturation. He regarded this as a universal of all

societies. Also all societies involved in one way or another a distribution of

power structures. He writes (1940) concerning this phenomenon, and referring

to the legends of the Kwakiutl people:

> "The social customs of the tribe are based entirely upon the divisions of the tribe, and the ranking of each individual is the higher – at least to a certain extent – the more important the crest legend" (p. 432).

And again:

> "the dynamics of exiting societies are one of the most hotly contested fields of anthropological theory. They may be looked at from two points of view, the one, the interrelations between various aspects of cultural form and between culture and natural environment; the other the interrelations between individual and society." (p. 255)

Boas also noted that within a society there were likely to be elite subgroups

who had great influence on the thinking of the people. He often identified this

group as religious leaders but it could just as easily be some other sort of

professional or political group.

The importance for us of Boas's thinking is that he recognised that in

order to make sense of any particular culture it is necessary to look at the whole

structure of the society and its institutions and observe how individual members

of the society behave, particular in dealing with core aspects of human life (like

birth, marriage and death) and how these and other essential forms of human

behaviour are linked to explanatory myths and legends – the narrative texts of that culture – which they hand on to subsequent generations.

6.12 Marx

Karl Marx developed his worldview based on a political and economic interpretation of history. History is the record of class warfare and, at every significant stage in history, tensions between the two warring classes will have been resolved before new tensions arise. His position is regarded as "dialectical materialism". The term "materialism" indicating that the warfare takes place in the material, physical world, and the term "dialectical" derives from Hegel's idealist 'Philosophy of Right' (Hegel 1896) and means that the truth is to be found in a debate or dialogue between two opposing propositions. In Marx's materialist case the two opposite propositions are opposing classes. In his own times Marx considered that history was being shaped by a class warfare between the bourgeoisie, the upper-class, who owned the means of production (capital) on the one hand and the proletariat, the working class, who had nothing to offer except their labour on the other. Marx defines the bourgeoisie as being those who own the means of production and he defines the proletariat as those who must work in order to survive. Such a clear division between capital owning and work dependent people no longer pertains in our contemporary society where the majority of people in employment have a stake in pension trusts which hold very large portfolios of investments. In our society therefore one person can be both bourgeoisie and proletariat at one and the same time.

Once the structure of society is seen as the theatre for class warfare, it becomes clear that the bourgeoisie will use every power at their disposal to subjugate the proletariat, for example, state laws are the principal and normal means of distribution of political power. In a bourgeois society, laws are a tool used by the bourgeoisie to subjugate the proletariat. In the 'Communist Manifesto' (Marx & Engels, 1908) Marx writes:

> "Your jurisprudence is but the will of your class made into a law for all, a will whose essential character and direction are determined by the economic conditions of existence of your class… Behind your jurisprudence is your concern for the maintenance of your economic superiority. Your law is a mere expression, rationalisation, of that concept." (p. 28).

Law and state are effectively the same thing. Both are expressions by the bourgeoisie of class dominance over the proletariat. The institution of property too, seen in these terms, is a fiction invented to justify the possession and control of economic resources by the bourgeoisie. For as long as the bourgeoisie own these, they can prevent the proletariat from acquiring them. This is rigorously enforced by legal coercion. This maintains the status quo where the bourgeoisie is in control. In 'Human Requirements and the Division of Labour' Marx writes:

> "Under private property… Every person speculates on creating a new need in another, so as to drive him to fresh sacrifice, to place him in a new dependence and to seduce him into a new mood of enjoyment and therefore economic ruin…. Man becomes ever poorer as man, his need for money becomes ever greater if he wants to master the hostile power. The power of his money declines in inverse proportion to the increase in the volume of production: that is, his neediness grows as the power of money increases" (referred to in (Spiers, 2011, p. 94).

Ultimately the plight of the proletariat will get so bad, that they will rise up against the bourgeoisie and overthrow them in a bloody revolution.

Marx's theory introduces a new aspect to the analysis of a society in that he characterises it ideologically. An ideology is a system of belief or a creed usually of an economic or political sort which becomes a worldview through which phenomena are interpreted. Whilst Marx is realistic about the existence of power structures within a society (comprising state and law, and possibly also property) nevertheless Marx has placed a particular political slant upon them.

After the collapse of Soviet Marxism in in 1989, Marxism took a retreat as a major political ideology. However, a form of neo-Marxism, exists where any occurrence of power differentials is necessarily seen as a place of abuse and exploitation. Separately this power=abuse stance also makes its appearance in post-modern thinking.

6.13 Foucault

Foucault was a post-modern writer and philosopher who developed the ideas of "archaeology" and "genealogy" as a historical method. He described his narrative analytical approach in his early work as "archaeological" meaning that he deconstructs the text to see how it sits with other materials, he later came to refer to his technique as "genealogy" in order to describe the ways in which the text demonstrates changes in thought when compared and contrasted with earlier and later texts. His book "Discipline and Punish" (1977) is a good example of his later genealogical technique. In this book he studies the development of modern ways of punishing criminals and explains how these have developed away from earlier and more brutal forms. Prior to the 18th-

century punishment of criminals took place in public and involved torture or execution. In the 18th century there was a transition of thought and for the first time penal reformers wished to raise the welfare of prisoners. As a result new more liberal, less brutal forms of punishment were devised. One of these, devised by Bentham, involved the idea of a Panopticon, in which a prison building was designed such that, from a central hub all prisoners in their cells could be kept under surveillance unceasingly. The punishment regime included hard labour which was frequently non-productive (for example, the use of the treadmill). In recent times punishment regimes have become less onerous but at the same time more generally felt within society. Modern imprisonment and fines have become the normal mode of punishment but there are also a host of quasi criminal penalties which are used for less formal acts of discipline. The most major transitions of thought then are to move from brutality to less brutal forms of punishment, and the expansion of those punished or disciplined from a narrow class of criminals outwards to include normal members of society. Today punishments are also seen less as retributivist demonstrations but are now viewed more as forms of state controlled discipline. Many new forms of behaviour are discouraged by a wide-ranging system of minor informal penalties and the public is routinely placed under greater and greater surveillance – often of a computerised form. The overarching aim of all forms of discipline and punishment is that the state, throughout the whole history of punishment, is making a demonstration of its power to the public. They must not forget that the state holds the ultimate power in the society. Its only means of communicating this fact, according to Foucault, is by widening the circumstances in which discipline is experienced by the citizen. State power is

distributed from State to citizens by means of a system of laws which directs officials to carry out punishments upon the criminal for any infraction. Foucault asserts that the State ensures that its power over individual citizens is more and more widely experienced. Foucault's technique asserts that this is a narrative of communication of the power of the state. The whole idea of punishment and its imposition is a discourse which the state is engaged in whereby the citizens are the hearers of the state's speech and they are obliged to recognise the power which is being asserted and exercised via this discourse upon them. For Foucault the idea of discourse is extremely important since speech acts in discourse form are the vehicle for the transmission of any form of knowledge. His study of madness, a 'History of Madness' (2006), shows how discourse determines everything that can be asserted. Knowledge is only possible when it is transmitted in a discourse speech act form. Furthermore discourse inevitably involves distinctions of power. In the case of the state, the power of the state and law is obvious, but it may be very subtly communicated. Foucault sets out to demonstrate how this comes about.

For the purposes of this thesis, we take the view that all communication, even communication of basic facts, is a form of narrative, and that, in the realms of social power, narrative (either in text, behaviour or any other form of cultural artefact) is the only means by which knowledge of culture is handed on to new generations. Education therefore, is a process of enculturation in which the learner is introduced to the knowledge, practices, values, and power relations of the society in which the learner is developing. This is inevitably transmitted to the learner by teachers, professional communicators, whose task

it is to stand in <u>loco</u> <u>parentis</u> and to hand on the cultural presuppositions to the next generation.

6.14 Hart

Hart (1961) gives a non-ideological explanation of the structures of a legal system and the distribution of power. His thought has become highly authoritative. Hart was influenced by Wittgenstein (and probably by Weber) and unsurprisingly regards the legal system as being made up of a system of interrelated rules. Legal rules are a variety of social rules. Social rules involve an element of obligatoriness. In a rule-ordered system, obeying a rule is seen as right behaviour whilst disobeying a rule is seen as wrong. Morality is another system of social rules. The difference between morality and law is to be found in the fact that legal rules are enforced by state authorities while moral rules are not. The state is a system of ultimate power distribution and law is used as the vehicle for that distribution. Laws are addressed to all citizens rather than to individuals. In this sense all citizens are equal under the law.

Hart considers that legal rules not only oblige us to do or to forbear from doing certain activities, but they also provide us with opportunities. We can harness the power of the law for ourselves, and create legally enforceable relations with others by means of legal rules. Hart gives the examples of getting married, creating a contract, and making a will. In the case of a contract, this is an agreement between two or more people whereby there is a balance of obligations undertaken and rights of enforcement created. It should be noted

that this involves the use of directives and commissives (to utilise Searle's terminology).

To explain how the system of law is structured Hart considers three situations where a rigid system of law (the sort that might exist in a very small society) would produce a failure. He calls these the three "defects" of laws. The first defect is the "defect of uncertainty". This is where it is not clear that there is a law in existence which regulates the situation, or indeed what the scope of the legal rule is. Hart says that this defect is answered by "rules of recognition" whereby a judge can grant an authoritative statement on whether the law applies to the situation and on what is its scope in the situation. The rules of recognition therefore involve the questions of authority and scope. The second defect is the "defect of static rules". This defect is answered by the "rules of change". The rules of change allow outdated laws to be repealed or amended. The third defect is the "defect of insufficiency of diffuse social pressure". Hart considers that it is social pressure to conform which is the strongest motive for our obeying any law. We feel, in the event that we disobey a law, that the failure is in some sense shameful. It presents a poor image of ourselves. When we fail to obey a law we do not feel that we can face the criticism from others, and we may feel self-criticism too. However it is a well known phenomenon that people do disobey laws and this is what Hart means by this third defect: that for them the pressure to conform was insufficient. The defect is answered by the "rules of adjudication" whereby judges and others officials will enforce the law by coercion if necessary.

In this way Hart divides up laws into two categories. The first category contains the primary rules of obligation which tell us what we should do or

forebear to do. The second category are secondary rules which are rules about the operation of primary rules and which are addressed to officials whose concern is the operation of the primary rules. The answers to the three defects create three forms of secondary rule.

Hart is aware that one characteristic of any system of rules, is, that they form an open texture. Rules are general statements meant to apply to all situations within their scope. However, it is frequently the case that there will be situations where it is not clear whether one law or another law applies. In fact the situation may not be ordered by a law at all. It is in this sense that the system of laws, like a net, will have gaps as laws tend to deal with general cases but there are always situations where a loophole may exist in specific circumstances. To remedy such a situation the law of equity was designed. This insists that it is the spirit of the law rather than the letter of the law that is imposed. Hart's analysis shows us that the same thing applies to any rule ordered system. There will always be an open texture and so there will always exist gaps in the scope of applicability of a network of interrelated rules.

For Hart laws are the principal means of distribution of the power from the state downwards towards the people. The power of the state is termed "sovereignty". Hart asks the question whether the powers of the state cease whenever one government administration ceases to be in session? His view is that a system of laws has its own authority and integrity. The sovereignty of the state can be equated with the system of laws and this will continue to be in force even when Parliament is not in session. The laws will still operate as a system as it is deemed to have its own continuing autonomy.

Although it has not proved possible to find an authority on the issue, this study takes of the view that there is much creativity to be found in the idea of rules.

It notes, though Hart did not, the following:

1. The word "rule" can mean power distribution as in the rule of a King;

2. "Rule" can also mean a general statement of regularity as in "as a rule…";

3. A "rule" is a standing order as in school rules;

4. A "rule" as in a set of related rules aimed to achieve a purpose can also mean a step of procedure to bring about the intended result (as in the steps in a recipe for the baking of a cake);

5. A "rule" can mean a system of discipline for life (as in the Rule of St. Benedict);

6. Rules can be a means of giving meaning (as in a rule-ordered activity or game);

7. A "rule" can provide a standard of measurement (of levels of achievement or otherwise) (as in a "ruler"); and

8. A "rule" as in a set of related rules, can provide a jumping off point, a basis for creative thinking in those areas between the scope of the existing rules in the series. The existence of a set of interrelated rules, having an open texture as above referred to, provides the scope for insightful interpretation and development of new rules within the area bounded by the existing rules. An example of this would be where a judge develops a new set of principles in a

case because the demands of morality or justice so indicate, but where no particular rule is able to provide a clear procedure. It follows that in creating any system of rule ordered activity, there must needs be scope for any number of creative insightful solutions to the gap problem in order to deal adequately with areas outwith the scope of the existing rules. There does not appear to be any readily available discussion on these issues.

6.15 Anderson

There would-be no point in being a member of society if either the member or the state did not recognise this. But what membership of a society amounts to and how it is expressed in the feelings of a member is somewhat obscure. "Imagined Communities" (Anderson, 1991) is a study of national identity ("nationalism") and its relation to language. Anderson starts with a surprising observation. He says that the idea of a nation contradicts Marxist ideology. Marxism is internationalist ideologically but even Marxist states express their own individuality and identity in terms of nationalism. Anderson is concerned to understand the power of nationalism and national identity. He asserts that nationalism is a cultural artefact of a particular kind. It is different from political ideology. It invokes very strong emotional feelings. National feeling is celebrated in the various tombs dedicated to unknown soldiers. But this presents the question of why national feeling is so powerful when ideological feeling seems so impotent? Anderson states:

> "The cultural significance of such monuments [tombs to the unknown soldiers] becomes even clearer if one tries to imagine, say, a tomb of the unknown Marxist or a Cenotaph for fallen liberals. Is a sense of absurdity

avoidable? The reason is that neither Marxism nor liberalism are much concerned with death and immortality. If the nationalist imagining is so concerned, this suggests a strong affinity with religious imaginings. As this affinity is by no means fortuitous, it may be useful to begin a consideration of the cultural roots of nationalism with death, as the last of a whole gamut of fatalities" (p. 10).

It seems that people are not prepared to die for a political ideology when they would be happy to die for their nation. What is the status and power of the nation which can invoke such feelings? Anderson describes a nation as "an imagined political community" which is "imagined because the members of even the smallest nation will never know most of their fellow members, meet them, or even hear of them, yet in the minds of each lives the image of their communion" (p. 6-7).

This answer to this intriguing question is that it is language which creates our sense of identity. Anderson is not necessarily talking about a language such as English, rather he is talking about the language of sub-communities whether they be dialect, slang or patois. Persons who are members of a sub-class and who speak in a way particularly distinctive of their sub-group, may come to think in a particular way also. This is particularly so where the subgroup sees itself as in some way subjugated or discriminated against. The distinctive language uses foster the sense of identity and the identity is strengthened by the feeling of hostility that the speaker holds for others who do not speak in the same way. We can now understand the language as defining the cultural identity of the particular subgroup. Anderson expends a considerable effort looking at the rise of Creole nationalisms as expressed against the larger Francophone culture. Members of a linguistic subculture will frequently regard themselves as fighting together against the larger dominating culture. Their identity requires to be asserted if not fought for. In this process the role of texts is stressed.

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Newspapers and media not only provide factual information about the oppression and victories won against the oppressor but also serve to foster the identity (or culture) of the linguistic subgroup.

While we cannot discuss 'Imagined Communities' at any length in this work, we note two factors which are: first, that having a language and being a member of a linguistic community creates a feeling of identity which can be felt very strongly, and second, the texts of the subgroup form a crucial and central role in the expression of the culture and cultural identity of the subgroup.

6.16 Power relations in the classroom

We have seen that Searle considers that power is involved in speech acts. We have seen how far this extends and posited that the five forms of speech acts all bring power relations into discourse. It follows from this that power differentials will inevitably occur in the classroom. The relationship between teacher and learner is clearly one involving differentials of power. But since discourse also occurs among students, it is also inevitable that power differentials will occur there too. This may cause problems such as bullying or merely creating situations where a student does not feel confident enough to express themselves, make errors, or work in collaboration, all of which are essential in the learning process. Power relations in the classroom were analysed by McCroskey & Richmond (2009), Richmond & McCroskey (2009) and Manke (1997).. Noddings (2005) gives the caveat: "only if education is organised around centers of care are we likely to avoid the domination of groups in power."

6.17 Conditions of satisfaction

There is a difficult in giving conditions of satisfaction for any narrative that sets out to explain human culture in general terms. This is because cultures vary very widely across the globe. Different linguistic communities may have widely differing values and manners as we have seen. Furthermore the search for an essence that is common to all is difficult to justify, for we might find that there are family resemblances between or among different cultures while there are few if any matters common to all. Having said that, there are four factors that will be in common: the shared human nature, the linguistic ability, the concept of power, and the phenomenon of organisation. The first of these has not featured strongly in this thesis though this study has referred to attributes and faculties of human beings on a number of occasions – Lewens and others have noted the importance of understanding human nature. The second of these is a sine qua non for all human societies and organisations – a study of the language will involve discovery of values and assumptions held by the language. The third of these is implied by the nature of human speech acts as we saw with Searle. The last of these is also implied by the very nature of society but while all societies are organised the very fact of organisation does not of itself say what the purposes are which the organisation sets out to achieve.

Another difficulty is one of perspective. Are we looking at a macro level at how governments and state institutions see and perform their roles? In which case what institutions exist and what are their roles? Searle gives an answer to the question of what institutions exist, but the identification of the purposes that are fulfilled by a society's institutions is less clear. Or are we concerned with the

micro level in which individual wishes, desires, purposes, goals, acts, values and ways of life become important? There are also the individual's personhood that needs to be respected, so that we must also consider identity, personal integrity, autonomy, freedom, power, agency, sexuality, health, welfare, need for society, social and moral values, education, freedom of choice and action, recreation, and physical needs for food, water, shelter and fuel.

The cultural evolutionists would be able to give their own reasons for the existence of societies. Broadly, we have learned to live in large societies in order to survive in a struggle against hostile forces and in a way which makes the availability of resources most efficiently achieved. Anthropologists have frequently studied small societies where these forces are most immediately felt by all members. But in larger societies citizens live a long distance conceptually from these forces, which are not considered as immediate sources of danger. Indeed most people in a large society will be unaware of what these threats are.

Yet another way of looking at the purposes of society, is that mentioned by Hart (Hart 1961, Chapter 9) who states that there are five principles that form the "remnant of natural law". He identifies the five principles as involving: 1. Human vulnerability – all people need protection at some point in their lives; 2. Approximate equality under the law - though some people are more powerful than others; 3. Limited altruism – in a society sometimes people need to be forced to consider the needs of others; 4. Limited resources which require to be distributed; and 5. Limited understanding and strength of will.

Finding conditions of satisfaction will therefore not be an easy task. But there are reasons for the existence of social organisation. The way that any society is organised is related to its functions. Understand the functions and the

conditions of satisfaction will become clear. A society will not survive if it cannot

function. Therefore any narrative that sets out to explain a given society will

have to address how the society and its institutions function in the protection of

its members from threats and the gathering of needed resources, whatever they

might be.

The society's social order and culture should make these functions clear.

Social and cultural theories should therefore address them. At present there is

no unanimity about what these functions may be. And so this study would

encourage research to continue in an attempt to identify the core functions and

how they relate or can relate to the attainment of a society, and its members,

desires and needs. However, the research turns out, the functions will likely be

related to the sorts of purposes given above in this section. At this stage

though, it is not possible to state the conditions for satisfaction for a narrative

theory that sets out to explain culture.

However there is one demand that must be made on any such theory,

and that is that, as we have seen, the knowledge that we obtain from our

experience of the natural environment, the causally communicated knowledge,

a lower order of knowledge than the cultural perhaps, is structured in

accordance with the principles of logic and testable hypotheses. It would

therefore seem reasonable that any narrative interpretation of culture should

equally strive to remain logical and that its hypotheses should strive to be

testable. This has not always been the case however. For example Jacques

Derrida in his doctrine of '*Difference*', suggests that the meaning of a concept

can only be understood by grasping its opposite for he writes (1998):

> "An opposition of metaphysical concepts (speech/writing,
> presence/absence, etc.) is never the face-to-face of two terms, but a

hierarchy and an order of subordination. Deconstruction cannot limit itself or proceed immediately to neutralisation: it must, by means of a double gesture, a double science, a double writing, practise an overturning of the classical opposition, and a general displacement of the system. It is on that condition alone that deconstruction will provide the means of intervening in the field of oppositions it criticises" (p. 195).

French Postmodern writing has a tendency to be rather obscure, perhaps this is because it is metaphorical or poetic, however this writing, looks at best paradoxical and at worst contradictory. Our point is that cultural interpretations are difficult enough to express without needing to appear to being close to abandoning logic.

6.18 Methodology of the Social Sciences

The methodologies of the social sciences can be divided into two main types.

Positivist social sciences follow the methods of science as near as is possible standing the nature of the social data that are dealt with. The methods used to gather data are more likely to be quantitative and so involve collections of numerical data obtained from observations or experiment. Comte was a pioneer in this form of scientific approach. He saw sociology as a continuation of the sciences and by means of observation, experiment and measurement he created hypotheses which explained patterns in the data which he had collected. Positivist sociologists still use similar methods today. The aim is that their studies should be as objective as possible, verifiable and reliable. The methodology works best when the data involves the observation of independently existing objects in the real world that can be differentiated and counted. Experiment is an important method and today much of the data is gathered from wide-ranging surveys. The more extensive the surveys, the more

reliable are the conclusions which can be drawn. Positivists try to minimise human bias or observational bias. They work to confirm or disprove a hypothesis which has been settled upon prior to the collection of any data. Survey questions have to be carefully chosen so as to be as objective as possible. The hypotheses should reduce any bias from theory laden data collection procedures. The aim of using the hypothetical deductive method is appropriate for finding structured patterns of data in large data sets.

The second main type of methodology is the Interpretive approach. This method is suitable for qualitative information which requires to be interpreted. There is a strong human involvement in gathering the information and so the methods involved are likely to be ethnographic, interview and similar. Human involvement is accepted as normal and appropriate. Interpretivist social sciences expect participation in the process of information collection. They regard society and culture as a domain of human action. It is the reason and causes for that action that matters. Society and culture themselves are intentional human constructs. The information which is gathered is not so gathered to confirm a pre-existing theory. Rather the information is gathered and only thereafter will a hypothesis, or better still an interpretation, be given to explain the information. Classical interpretivists included Dilthey (see Makkreel & Rodi, 1985 – 2010, Vol. IV) who was concerned with the hermeneutic method and Weber (1978). Weber developed the method of *Verstehen*, or 'understanding'. In which he examined the reasons and motives for action of individual members of society. He considered that since society is a collective of individuals then the reasons and motives of the individual members of society mattered as atoms of the society as a whole. By understanding the

reasons and motives for individual actions, he could build up a by abstraction a typology of reasons and motives of actions of that sort. Ultimately at the collective level he hoped to be able to identify pure types of action. This method proved extremely productive.

6.19 Conclusions: A Cultural Theory of Knowledge

In this chapter we opened with a consideration of the meaning of sentences in contextual situations. Austin's and Searle's analysis of Speech Acts has proved central to an understanding of the Five Forms of Speech Act. This was confirmed by the Dialogism of Bakhtin who insists in the importance of the meanings negotiated in discourse and of the ultimate purpose of discourse. Searle develops a Philosophy of Society which he finds is built using repeated iterations of Declarations. It is important to note that the forms of Speech Act nearly always involve power structures. Speech Act forms other than Declarations also involve tacit power relations. Searle's Philosophy of Society provides a power based structure for constructing a society. It does not dictate the contents and precise form of the society which can be realised in an infinite number of ways. This flexibility as to form and content has given rise to the plethora of competing narrative Interpretations. Early interpretations did not recognise the essential power elements involved. Later forms do but these may be ideological in form. Hart provides a theory that explains the structure of society based upon legal rules. Anderson asserts the importance of membership of a culture and the sense of identity that this involves. Evolutionary thinkers regard society as a form of evolution whereby humans

have an intellectual advantage in co-operating with each other. Societies develop out of need. They are functional. The co-operation is achieved by means of language. Conditions of satisfaction exist for social and cultural narratives but, though functional, they are obscure and difficult to identify in large societies. We now consider the Initial Questions which were first put in the Introduction:

1. How far can an understanding of pre-linguistic cognitive functions and linguistic functions be related to knowledge?

> Pre-linguistic cognitive and linguistic functions are related to knowledge of both the natural world and of the structures of society. The same requirements for logic, mathematics, and conceptual analysis apply to both types of knowledge. Our perceptions of both the natural world and the social world are mediated to our consciousness via pre-linguistic pattern organising faculties. Just as language is a natural and innate function for us, so is understanding language and behaviour. We, and our great ape relatives, "mind read" other members of our societies in order to assess our power status within our societies. The social meanings of our cultures have been constructed and we are adept at interpreting these. As Wittgenstein earlier showed, these meanings are also related to the customs and practices of our societies and in particular to the functions that fulfil our environmental needs. Building societies and cultures is a product of evolution.

2. Do pre-linguistic cognitive and linguistic functions structure our knowledge?

We have already answered this above in the affirmative. We are innate language and society builders using linguistic rules. In the same way we can interpret our societies and their purposes and functions. Work needs to be done to clarify the functional aspects of large societies.

3. How can a knowledge of pre-linguistic cognitive functions and linguistic functions enhance our understanding of education, learning and teaching?

Knowing how our innate speech act forms create societies enables us to understand the ways that cultures come to exist and function. We learnt about how our learning can be enhanced in the previous Chapter. Being a member of a society means that we are constantly relating to other people. This gives rise to episodic memory learning. Learning of this form is more likely to be retained in memory and passes easily from short term to long term memory as a result of stimulation of the limbic system. Social interactions are by their nature episodic and so easily remembered. We can enhance our learning by social engagement and design episodic chunks of interaction to reinforce what has been learned.

4. How are language and thought related?

This was answered at the end of Chapter Four. Wittgenstein equates language and thought. Language is merely the expression of thought. Within this chapter, however, we saw how powerful a tool language is. The whole of society depends upon it.

5. What are curiosity, insight and creativity so far as relevant to education? How are they or should they be involved in the educational process?

Insight is important in social language and thinking. Both Humphrey and Hart believe that Insight is an important part of understanding. We have seen in Chapters Four and Five that this is so.

6. Must we understand explanations of society and culture in terms of narrative?

Explanations of society tend to take a narrative form. Narrative is best placed to provide explanations of cultural and social phenomena. Discourse is a place where narratives occur and meanings are developed. Narrative explanations would seem the natural way to explain social and cultural phenomena.

7. How does narrative illuminate the educational process?

The educational process involves the use of language. Language in some form or another structures the form that our knowledge must take. Learning takes place by means of interaction between learners and teachers and between learners and learners. Teaching materials are delivered in narrative form. There is an essentially close connection between narrative, knowledge and the structures, form and content of cultures.

8. How are power relations related to the educational process?

We have seen that power is necessarily involved in the five forms of speech acts. This means that there is scope for power imbalances and even abuse of power. The learner requires to feel sufficiently at ease in order to learn, to take correction and to relate to peers. The teacher

should intervene in order to create an emotionally satisfactory balance so that learners do not feel exposed and powerless.

9. How can we enhance Motivation in education?

This matter was discussed in Chapter Five. This chapter has added little to that discussion.

10. What are the conditions of satisfaction (truth/falsehood of linguistic and mathematical assertions, appropriateness or otherwise of generalities and scientific laws and interpretative narratives) for our knowledge?

As mentioned in Section 6.17, ascertaining what precisely the conditions of satisfaction are is a difficult task. However we have there expressed a number of categories of functional elements which are involved. Some aspects like power relations, autonomy, self-identity and some others would seem to be essential as part of the functional and purposeful elements which inform conditions of satisfaction. When further research into our humanity, its social nature and the threats and forces acting on large societies is carried out, we believe that it will become clearer what the conditions of satisfaction for social knowledge are. As with all conditions of satisfaction, the ones involved in constructing and expressing social and cultural knowledge will be able to assist in showing us which explanations and interpretations can be taken as true and which not.

11. Can we state a Theory of Education which summarises our findings concerning the above?

We proceed to state this now:

A Cultural Theory of Reference and Meaning

**(Part of the Causal-Cultural Theory of Reference and
Meaning (Causal-Cultural Theory of Education))**

<u>Our knowledge of the social world comes from our engagement in social
interactions with other members of our culture. This is an Intentional process.</u>

All our knowledge about the social world derives from our faculties of language.
This is an innate faculty. We use language as a means of relating with other
human beings. Just as we express descriptions of the natural world in
language, so we express our knowledge of the social and cultural world in
language. We start to learn about our culture as soon as we start to learn how
to speak. Cultural knowledge is passed on from one generation to the next
through speech. Learning is a process of enculturation. Language is infinitely
generative and so is an excellent medium for creativity. Our knowledge of the
social and cultural world is not perceived by us, but is constructed by us in
collaboration with others. In discourse with others we receive and communicate
information. We negotiate meanings in discourse. We "mind read" the
behaviour, purposes, desires and intentions of others using thought. Our social
and cultural knowledge is narrative knowledge. Social discourse is a necessary
factor and the dominant source of our linguistic knowledge.

<u>The speech and behaviour of other humans is communicated to us and made understandable by means of our cognitive linguistic and pre-linguistic functions which impose patterns upon the data and enable us to "mind read."</u>

As we hear language, the expression of the thoughts and behaviour of other humans, through the process of "mind reading", we process others' behaviour and speech in our brains using pre-linguistic cognitive functions which have been evolutionarily developed in order to allow us to survive in intellectual niches. Our ability to understand others' behaviours and speech enables us to make sense of our social and cultural environment. Of particular importance in this are our linguistic functions. We understand behaviour and speech because these are the perceptual criteria of other people's thoughts and actions. Our knowledge of the customs and practices of our culture mediated to us in our background memory enables us to recognise the intentions, emotions, reasons and motives for their behaviour. Speech enables us to understand the purposes of other people's actions. In dialogues we engage in meaning making and collaborate to achieve collective purposes. Collective speech acts are essential for the construction of societies and culture. We can give status functions to events, objects and persons and so invest them with collectively agreed powers and functions. Such status functions are the basis for all organised institutions and cultural artefacts. In the same way we can understand and predict the behaviour, intentions and purposes since we understand the rules by which our society has been constructed and by which organisation is carried out. Rules are special forms of linguistically expressed generality which constrain and also enable our own actions. Laws are a special form of such rules which are recognised and enforced by state authorities acting through appointed officials.

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Speech Acts and Actions

Speech Acts fall into five and only five types. Speech Acts are intentional actions, normally (in perlocution) intended to have an effect upon the hearer of the Acts. They almost always involve power relations and politeness has developed to defuse power imbalances. Actions, not merely Speech Acts, are Intentional forms of behaviour. They give effect to our motives and reasons and fulfil our desires. Desire-independent reasons for action have a special role in societies and in social interaction. They oblige us to consider others when we act. They compel us to be altruistic and to undertake obligations when would not otherwise wish to do so. They are part of the cement which binds members of a society together. A network of rules, due to the open-texture gives a space for equity and creative thought. Discourse enables us to co-operate with others and form and execute collective purposes. Language is a means of sharing knowledge but it also provides the stuff out of which all aspects of our lives are built. Societies are functional organisations. They fulfil the evolutionary demands of keeping us safe from threats and of enabling us to satisfy our other needs. These attributes give rise to conditions of satisfaction (by which we mean a mechanism for saying whether something is the case or not, whether our assertion or description or what have you is appropriate or inappropriate, felicitous or infelicitous, explanatory or fails to explain). In the case of social knowledge the conditions for satisfaction are the functional ones geared towards self- and collective-preservation and fulfilment of self- and collective-need. Further research is required to enable us more clearly to see what needs our human nature produces in us. The conditions of satisfaction also require that our social and cultural actions fulfil the conditions of satisfaction of the

orders of thought of the causal natural world. Hence we must not unjustifiably, in our narratives and actions, contradict the rules of logic, mathematics and the findings of science.

Generality and hypothesis

Generality and hypothesis are important for social knowledge. Our actions are intentional. They are aimed at fulfilling purposes. At an individual level in order to understand the actions of others, their forms of behaviour and their emotions we "mind read". At a collective level in order to understand the structures, institutions and artefacts of our cultures we create explanatory narratives which we use to interpret cultural phenomena. This is advanced conceptual knowledge which can be tested using the Interpretive methodology.

The hierarchical nature of knowledge, language and method

Our knowledge of the world starts with simple descriptive sentences where we mention a referent and then say something about it. As our knowledge increases it becomes more complex. Similarly, our social and linguistic knowledge develops from simple descriptions and becomes more and more complex. Conceptual and hypothetical knowledge are the more advanced forms of thought. Language enables talk about itself. Such talk about talk, or thought about thought is a form of metalanguage. Complex hypotheses and concepts are the most complex forms of language. We start to learn language around birth. We develop linguistic abilities in small increments. At the same time our methods and conditions of satisfaction become more complex. The conditions of satisfaction for a simple linguistic description may be simply a matter of truth or falsehood. Mathematical ideas and concepts are more complex and

conceptual and hypothetical language the most complex. The growing complexity of linguistic knowledge goes in parallel with social knowledge and indeed also with causally based knowledge of the natural world. This is what we mean by saying that knowledge is hierarchical.

Thought and language

Wittgenstein has shown in the *Tractatus* that propositional knowledge is linguistic. He developed this in the *Philosophical Investigations.* An assertion in language is the expression of a thought. We cannot think at any level of complexity unless we use language (without language our thinking could be nothing other than rudimentary). Language allows us to model the world symbolically. Language is a tool for understanding and thinking. One of the functions of language is to share knowledge. This can only be achieved where the speaker and hearer use language in the same way. Wittgenstein tells us that language is a public phenomenon. There is no such thing as a private language. Language involves shared conventions of meaning and structure. Chomsky tells us that language functions in general, though not any particular language, is likely to be an innate cognitive function. Like other cognitive functions, it is a product of evolution. Animals other than humans do not possess language, however, they may have to a greater or lesser extent similar cognitive functions to our own. Vervet monkeys demonstrate a high level of object recognition as well as the abilities of generalisation and the association of a symbol (a danger call) with a particular type of stimulus. Vervet monkeys can also lie. This demonstrates a rudimentary ability to communicate but not yet at a level which we would call language.

<u>Affect and emotion</u>

Our cognitive functions include the limbic system which is the seat of many emotions and drives (some drives are controlled by the brain stem). This has profound effects on the things that we express in behaviour and in language. Similar criteria concerning motivation occur in the social and linguistic realm as with the natural. Reference should be made to the Causal aspect of this study's Theory of Reference and Meaning. Memory is related to the limbic system. Actions and particularly Speech Acts are presented to us in every day forms of life. Our participation in these forms of life is episodic and thus has a strong influence on memory. Learning can be enhanced by associating the materials being learnt with episodes in our lives or good emotions.

<u>Learning – the hierarchical nature of learning - moving from simple to more complex forms</u>

To learn effectively, we need to start with simples and build up to complexity. It is reasonable then to start early learning of language with the applying of names as it were labels to objects which surround us. We should then learn how to use descriptions and concepts building up to advanced concepts and hypotheses. This should be reflected in the learning process and in curricula. We should learn about conditions of satisfaction in order to assess whether what we are saying or asserting is true or false, explanatory or fails to explain. Complex linguistic knowledge is the highest form of knowledge that can be constructed. Learning therefore needs to reflect the learner's increasing abilities to handle complexity.

<u>Insight and creativity</u>

It appears from Hart and from Wittgenstein in the *Blue Book* that we require to use insight in order to learn. Insight is at the heart of learning. It is an intellectual grasping of the answer to a problem. It has close connections to generalising. Moreover, insight can be trained as Köhler showed. The use of insight should be encouraged and trained.

<u>Teaching</u>

The comments regarding teaching which have been expressed in the Causal Theory of Reference and Meaning equally apply to the linguistic.

Chapter Seven

Conclusions: A Casual-Cultural Theory of Reference and Meaning

7.1 Introduction

In this Chapter we draw together the results of this study. We examine our

initial questions and put forward our final responses to these. We present the

final version of the Causal-Cultural Theory of Education and its Implications.

We show how the Causal-Cultural Theory can provide a conceptual, cognitive

and linguistic foundation for a number of empirically derived educational

studies. We state the contribution of this study. Finally we make

recommendations for areas of future research.

7.1.1 What has this Study achieved?

In our introduction we set ourselves the task of trying to produce a Theory of

education based on our current understanding of the philosophy of language

and the underlying pre-linguistic human cognitive apparatus and functions in so

far as we know these. We have worked towards and produced a Causal-

Cultural Theory of Education which will be summarised below. We laid out a

number of Initial Questions which we have looked at at the end of each Chapter

and to which we shall return below.

In Chapter Two we examined the early work in the analytical Philosophy

of Language and particularly the work of Frege and Russell which proved of

seminal importance for our study. We noted the importance of Object

recognition as a fundamental unit of knowledge and the basis of all reference in

language. Recognition of criteria for recognising objects and re-recognising them coupled with the ability to say when a new object is not the same object as one seen previously (formed by the judgements of *p* and ~*p*) allows us to develop the axioms of logical implication which flow from this initial judgement. Classing objects of similar description into sets enabled the origins of arithmetic and hence allows the origins of mathematics. It also allows us to generalise and create rudimentary hypotheses. We stressed the importance of conditions of satisfaction which raise an assertion from being mere opinion to the status of factual assertion. In this regard we looked at truth and falsehood as conditions of satisfaction in logic and mathematics. We noted that we needed conditions of satisfaction for generalisations. We further noted that Russell's theory, and tacitly Frege's theory, depended upon both object recognition and a causal connection between the world of things and language.

In Chapter Three we looked at the early work of Wittgenstein and took account of his Picture Theory of language as presented in the *Tractatus*. Wittgenstein limits his picture theory to the relations between two or more objects in the world. Sentences are logical pictures of such facts in the world. What Wittgenstein does not do, and which Frege and Russell did, is to examine simple descriptive sentences referring to one object and then proceeding in the predicate to say something about that object. In the *Tractatus* Wittgenstein limits his understanding of language to one use: namely to picturing the world. This was a mistake which led Wittgenstein himself to recognise that, if that is the case then metalinguistic uses of language are simply non-sense. His idea of thought (and for him a proposition of language is nothing more than the expression of a thought) is similarly constrained. Actually language performs

many different uses, and the meaning of sentences reflects the wider range of uses to which language can be put. One of those uses is metalinguistic use.

In Chapter Four we looked at the later work of Wittgenstein. We saw that the meaning of a sentence is the use to which it is put. Language depends on social conventions and so there can be no such thing as a Private Language. Hence language is the means whereby human beings can come to have and share knowledge. We looked at the concept of family resemblances which enhances our ideas of set grouping and generalisation which were put forward in relation to Chapter Two. Wittgenstein concludes that all meaningful activity is rule ordered but when following a rule is examined it proves impossible either to state, understand or learn what a rule means. To learn the meaning of a word or rule, some form of insight is required. Rule following depends on social customs and practices. We asked where these are to be found and who declares them? We also examined some pre-linguistic aspects of Wittgenstein's thinking: colour, pain, and aspect seeing.

In Chapter Five we looked at Searle, Kripke and Evans in order to understand the Causal Theory of Proper Names. This was a foundation for Putnam's Causal Theory of Reference. Pylyshyn and Campbell presented a Theory of Selective Attention to Objects which shows us that Object Recognition is a fundamental part of our cognitive functions when perceiving the world visually. This answers the difficulty we faced in the earlier chapters about how we could justify the idea of object recognition for the purposes of reference. We saw that innate linguistic ability, pattern recognition and insight are pre-linguistic cognitive functions which enable us to learn about the world. Turning to the structures of the brain, we saw that these give rise to desires,

emotions and rational thought. There appears to be a battle in our minds among these ways of thinking. Minsky suggested that these are alternative resources. A balance needs to be struck. Emotions are involved in laying down memory. This means that we can enhance learning by learning in chunks (episodes) or by associating with positive emotions which tend to draw us closer to other people. The regional distribution of brain functions also gives rise to ideas of myth and so imagination. Imagination is used to create 'masks' and perform role play in order to allow individuals to present themselves in social interaction, enhancing their self-image, boosting their confidence, and so reducing stress and embarrassment. The importance of insight and creativity were stressed.

In Chapter Six we saw that there are five forms of speech, all of which involve or create power relations. Discourse is the place where roles are played out and meanings can be performed and negotiated. Discourse is necessarily social and draws us together in order to achieve joint purposes. Discourses have evolved to perform a necessary role in human societies, enabling them and their members to survive in hostile environments. Language, particularly through Declarations, creates social structures and institutions. The structures of society are rule ordered but also depend on a Background of social knowledge, skills, attitudes and values. These may be infinitely realised but power and rules are always involved. Culture is the sum of the organisation of society, its rules and institutions, the background knowledge, skills, attitudes and values, and the products of the society. Culture is expressed in a narrative consisting of a text or number of texts. A range of cultural narratives were looked at and criticised. Narratives, if they are to be robust explanations of a

culture must remain true to the factual Causal Knowledge in the sense that they must not contradict logic, mathematical truths, or unjustifiably contradict the factual structures of the world as revealed to perception and science. Narrative explanations should also satisfy some pragmatic criteria and must always address the issue of power. The method used to analyse narrative explanations of culture should involve the hermeneutic or interpretative methods. Finally a Cultural Theory of Education was presented.

We shall now proceed to look at the Initial Questions with which this thesis opened.

7.2 Initial Questions answered

The thirteen Initial Questions with which we opened this thesis will now be finally addressed.

1. How far can an understanding of pre-linguistic cognitive functions and linguistic functions be related to knowledge?

> Our pre-linguistic and cognitive functions together are responsible for all of our knowledge. Our knowledge starts with Object Recognition. Once we can recognise an object and, through memory, re-recognise an object then we have the foundations of all our knowledge. This allows us to recognise that p and $\sim p$ which is the basis of all logical implication. Our knowledge of logic is built upon this. In addition by grouping objects with similar characteristics together, we are able to compare and

contrast them and count them. Counting is the basis for arithmetic and provides the foundation for mathematical knowledge. Grouping similar objects together also allows us to generalise characteristics and behaviour of objects. Grouping involves the use of insight in recognising that there are patterns of characteristics which objects share or which differentiate objects. Grouping objects is the basis for abstract knowledge and provides the foundations for science. We also have cognitive and linguistic functions which lead us into social engagement. Some of these functions are affective. Language is necessarily social, is based upon social conventions and is rule ordered. Thought is expressed in language. Thoughts therefore are conventional and rule ordered. Social knowledge is generated by thought and language and is organisational in character. Our societies show complex levels of organisation. Discourse and narrative essentially involve power relations. Organisations are generally structured with power at some level. Without language none of our social conventions, organisation or institutions would be possible.

2. Do pre-linguistic cognitive and linguistic functions structure our knowledge?

Our pre-linguistic cognitive and our linguistic functions do structure our knowledge. We cannot think in non-linguistic ways (except perhaps for very simple reactions and responses to immediate environmental conditions). Language is conventional, rule ordered and organised. Our knowledge portrays these attributes.

3. How can a knowledge of pre-linguistic cognitive functions and linguistic functions enhance our understanding of education, learning and teaching?

Knowledge learning is hierarchical. Our knowledge is hierarchical. Learning involves steps from simple forms of knowledge to more complex ones. As stated above, we start with object recognition and move by steps to logic, arithmetic and mathematics, generalisation, and hypothesis all of which are causally mediated to us. Our linguistic structures mirror this hierarchical progression. We start with simple descriptive sentences and then proceed to develop more and more complex conceptual sentences. Language and thought are necessarily related. Our thought also proceeds from simples to levels of ever greater complexity. Language is inherently social. We engage socially with other human beings from immediately after birth. Language is an essential for such social engagement. Social knowledge likewise proceeds from simples to levels of greater and greater complexity. Story telling is an important (if not the essential) aspect of language. Even a simple sentence is a story of sorts – though a very brief one. Our narratives develop greater and greater complexity. We use narrative to explain ourselves and our purposes. We use narrative to create and explain our societies and to present ourselves in social situations. This much relates to our learning processes. Our educational processes are a connection between learning and teaching. Teaching is a natural function for human beings who are programmed to foster and bring up their children and pass on to them knowledge, skills and values. Teaching as a professional discipline develops from parental roles. To be effective

teachers must understand the hierarchical nature of knowledge, conditions of satisfaction for knowledge, and the appropriate methods for acquiring knowledge. They must introduce subjects at an appropriate level of simplicity in both the causal factual and social fields. Teachers must understand the cognitive, linguistic and social functions in humans and must relate these to the levels of complexity of the materials being delivered to learners. Teachers must assess and record the cognitive and social development of learners in order to deliver materials to learners at the correct level. The correct level is that which is just beyond the current cognitive, linguistic or social level. This will encourage the learner to use insight and creativity in finding answers to problems and in understanding new concepts and information. In this teachers will be guides and facilitators. Teachers must also provide and maintain a safe and stimulating environment for learners. They must defuse any imbalances of power which might exist or develop among learners. Teachers must understand the reasons for and methods available to enhance learners and so will organise learning tasks accordingly. Teachers should be aware of the need to enhance learning with episodic tasks and should reward learners for achievement. This is because the positive limbic affective emotions and desires such as curiosity are associated with laying down memory. Teachers should encourage learners and attend to their physical and affective needs. Teachers should stimulate curiosity, insight and creativity. Teachers should encourage role playing and recreational play. In early years teachers should direct learners' attentions to relevant objects and

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aspects of the learning tasks and problems. The use of shape, colour and movement should be considered as these assist attention. Insight, creativity and curiosity should be encouraged. The learner needs to address learning and have learning organised in episodes and in environments and activities which foster positive emotions as emotions are involved in the laying down of memories. Assessment of a learner's cognitive, linguistic and social understanding levels, and the delivering of new materials at a level just a little more advanced than the learner's level will encourage the use of insight and creative understanding. In early years shape, colour and movement can be used to stimulate attention. Teachers should encourage disciplined learning skills and encourage individuals to take responsibility for their learning. Self-motivation should be encouraged.

4. How are language and thought related?

Language is the symbolic expression of thought. Language enables us to build a model of the world, in both natural and social fields, and is necessary for any thought other than the most rudimentary. The complexities of language and the complexities of thought are one and the same.

5. What are curiosity, insight and creativity so far as relevant to education?

How are they or should they be involved in the educational process?

These are the pre-linguistic cognitive functions which enable us to make sense of the world. They allow us to perceive patterns in information.

Intuition is the application of already known patterns to new problems. Insight is the application of new patterns to new problems. Training in insight makes future problem solving easier. As mentioned above, new materials should be delivered to learners at slightly beyond their current cognitive, linguistic and social levels of knowledge in order that insight and creativity may be used to solve and understand new problems and materials. Curiosity should be encouraged. Insight and creativity are essential at all levels of complexity of knowledge and learning.

6. Must we understand explanations of society and culture in terms of narrative?

It appears that all explanations, laws, conventions and rules involve narrative. A simple descriptive assertion can be seen as a very short story. Even mathematical theories and scientific laws are stories of a sort. Narrative is therefore essential for all forms of explanation. This is particularly so when explanations of society and culture are concerned.

7. How does narrative illuminate the educational process?

Learning can be seen as analogous to understanding narratives at ever greater levels of complexity. The educational process involves starting with simples and proceeding by degrees to levels of greater complexity. This is true of all of knowledge, methods, and conditions of satisfaction of knowledge. The same applies to narratives which proceed from the simplest descriptive assertions, through generalities and laws, up to the most abstract and complex of theories. Linguistic narratives are capable of expressing this ever increasing complexity.

8. How are power relations related to the educational process?

Power is an essential ingredient in discourse. It follows that it will be found in educational settings. Power differentials are to be expected both between the teacher and students, and between student and student. Students need to feel emotionally calm in order to learn, to take correction and to relate with peers in collaboration. The idea of enculturation, as Bourdieu suggests (see below), may be seen as imposing the class of an elite upon students from all classes. Care must be taken to avoid unproductive power imbalances. A role of the teacher is to balance power relations and provide a safe and stimulating environment for students to learn in.

9. How can we enhance Motivation in education?

Reference should be made to the previous questions for an answer to this question. This question has already been answered.

10. What are the conditions of satisfaction (truth/falsehood of linguistic and mathematical assertions, appropriateness or otherwise of generalities and scientific laws and interpretative narratives) for our knowledge? How are these conditions of satisfaction related to the acquisition of knowledge?

Reference should be made to the previous questions for an answer to this question. This question has already been answered.

11. Can we state a Theory of Education which summarises our findings concerning the above?

The Theory of Education, a Causal-Cultural Theory will be addressed in the next section.

7.3 A Causal-Cultural Theory of Education and its implications

We now draw together the Causal Theory of Reference and Meaning which was stated at the end of Chapter Five with the Cultural Theory of Reference and Meaning which was stated at the end of Chapter Six and present them as a combined Causal-Cultural Theory of Education:

A Causal Theory of Reference and Meaning

(Part One of the Causal-Cultural Theory of Reference and Meaning (Causal-Cultural Theory of Education))

<u>Our knowledge of the natural world comes from perception which is a causal process</u>

All our knowledge about the natural world derives from our faculties of perception and judgement. The most powerful of these is sight. We use sight as an illustration of how our knowledge comes to us causally. When we open our eyes, light reflected from things around us hit our retinas and is sensed by the rods and cones and transmitted by nerve impulses to our brains. This is a causal process. The light from the world makes causal changes in our brain. The light entering our eyes is the start of the causal process. The perception of this in the relative parts of the brain, being brain state changes, are the causal

effects of the processes of sight. Putnam's causal theory of knowledge asserts this. We see the tree because the knowledge of the tree that we see is caused by the light which comes from the tree. The tree is a necessary factor and the dominant source of our perception.

<u>The sense data which comes to us is processed and made understandable by means of our cognitive functions which impose patterns upon the data.</u>

Before we consciously perceive a thing in the world, it is processed in our brains using pre-linguistic cognitive functions which have been evolutionarily developed in order to allow us to perceive and make sense of our environment. Of particular importance in this is our pattern recognition ability. We recognise things because of the pattern of light that we see. Our cognitive faculties access our faculty of memory for similar patterns. In our consciousness we never "see" the raw data, the shapes of coloured patches. We always see things as the familiar objects that they are. Köhler shows that this is the case. All our knowledge of the world around us is mediated to our consciousness in a similar causal way. Our pre-linguistic and cognitive functions are therefore conditions for the existence of any knowledge of the world around us.

<u>Object recognition</u>

Knowledge starts with Object Recognition. Russell considered that our knowledge of the world had to be mediated in such a way. He called this acquaintance. This knowledge is initially non-descriptive. Once we can recognise an object and, through memory, re-recognise an object (because it has the same characteristics) then we have the foundations of all our knowledge. This allows us to recognise that p and $\sim p$ which is the basis of all

logical implication. Whether we have an object before us or not, is a matter of truth or falsity. This gives rise to conditions of satisfaction (by which we mean a mechanism for saying whether something is the case or not, whether our assertion or description or what have you is appropriate or inappropriate, felicitous or infelicitous, explanatory or fails to explain). In the case of object recognition the conditions for satisfaction are the logical ones of truth or falsehood.

Logic

Russell shows how all our knowledge of logic is founded upon this. Wittgenstein shows how the axioms of logic are contained in our language, in descriptive propositions. He is able to build up truth tables in this way. Prior shows that the number of logical axioms are fixed. Any fewer would prevent us from making any inferences and any more would allow us to infer both a proposition and its contradictory. The conditions of satisfaction are still truth and falsehood.

Arithmetic and Mathematics

In addition, by grouping objects with similar characteristics together, we are able to compare and contrast them and also to count them. Counting is the basis for arithmetic and provides the foundation for mathematical knowledge as Russell has shown. The conditions of satisfaction for mathematical truth are still truth and falsehood (though issues of probability are likely to arise in complex mathematics).

Generality and hypothesis

Grouping similar objects together also allows us to generalise characteristics and behaviour of objects and to state the generality of experience in a general assertion about their characteristics and behaviour. A general assertion of this sort can be described as a rule. In science this rule may be described as a law. Thus grouping objects into sets is the basis for abstract conceptual knowledge and provides the foundations for science. The conditions of satisfaction of a general statement may be probability, but in the case of a predictive general statement (scientific law) these will be questions of verification or more likely falsification of the general hypothesis. The method that correlates with this is the Deductive Nomological method.

The hierarchical nature of knowledge, language and method

Our knowledge of the world starts with simple descriptive sentences where we mention a referent and then say something about it. As our knowledge increases it becomes more complex. Similarly, our descriptions of the world become more complex. We learn to give names to general statements or ideas. We can talk about ideas. This is a form of metalanguage. As our knowledge gets more complex, so does our language. At the same time our methods and conditions of satisfaction become more complex. This is what we mean by saying that knowledge is hierarchical.

Thought and language

Wittgenstein has shown in the *Tractatus* that propositional knowledge is linguistic. He developed this in the *Philosophical Investigations.* An assertion in language is the expression of a thought. We cannot think at any level of complexity unless we use language (without language our thinking could be

nothing other than rudimentary). Language allows us to model the world symbolically. Language is a tool for understanding and thinking. One of the functions of language is to share knowledge. This can only be achieved where the speaker and hearer use language in the same way. Wittgenstein tells us that language is a public phenomenon. There is no such thing as a private language. Language involves shared conventions of meaning and structure. Chomsky tells us that language functions in general, though not any particular language, is likely to be an innate cognitive function. Like other cognitive functions, it is a product of evolution. Animals other than humans do not possess language, however, they may have to a greater or lesser extent similar cognitive functions to our own. Vervet monkeys demonstrate a high level of object recognition as well as the abilities of generalisation and the association of a symbol (a danger call) with a particular type of stimulus. Vervet monkeys can also lie. This demonstrates a rudimentary ability to communicate but not yet at a level which we would call language.

Affect and emotion

Our cognitive functions include the limbic system which is the seat of many emotions and drives (some drives are controlled by the brain stem). This has the importance of being the motivation for most of our actions. Our reflective thought is controlled in the higher brain. This distribution of functions means that our thinking sometimes appears to us as a battle between lower drives and emotions as opposed to reason. The key to motivation is to harness the emotions. Memory is also related to the limbic system. Learning can be enhanced by associating the materials being learnt with episodes in our lives or good emotions.

<u>Learning – the hierarchical nature of learning - moving from simple to more complex forms</u>

To learn effectively, we need to start with simples and build up to complexity. It is reasonable then to start early learning with object recognition. This can be enhanced (as Pylyshyn, Campbell and others have shown) by the use of colour, movement and shape which capture and retain our attention.

As we learn starting from simples and building up to complexity, it follows that in the learning process, we should first learn object recognition and naming, and then proceed to make basic descriptions using the characteristics of objects. We should thereby learn about truth and falsehood which are the foundations of logic. We should then proceed to learn about sorting objects and grouping similar objects together. From this we need to learn how to count and carry out basic arithmetic. Thereafter we can start to learn more complicated mathematics. Similarly our language, which we will need to perform the above tasks will need to proceed from simple descriptive sentences to more complicated forms as are necessary to allow for arithmetic operations to be carried out. Grouping objects allows us to learn about making general statements and predictive statements. This means that we should learn about generality and hypothesis. Our language will become more conceptual as a result. In short knowledge and opportunities for learning need to be delivered in the same way from simple to complex. This applies to logical, arithmetic and linguistic knowledge. Scientific knowledge is the highest form of knowledge of the natural world. Science therefore needs to be delivered at an advanced stage so that we have developed through learning the more basic skills. Learning therefore needs to reflect this increasing level of complexity.

<u>Insight and creativity</u>

It appears from the work of Köhler and others that to a great extent we solve new types of problems using a faculty of insight. Insight is a form of creativity. What we need is to examine the materials that we have available, grasp the problem intellectually and by means of creative insight make the connections necessary to find the solution to the problem. Wittgenstein in the *Blue Book* shows us how we individually learn and refine the meaning of a word by means of a process of insight. Insight is at the heart of learning. It is an intellectual grasping of the answer to a problem. It has close connections to generalising. Moreover, insight can be trained. Köhler showed that apes who had succeeded in various detour and tool tests improved their performance in more recent tests.

<u>Teaching</u>

Teaching is a natural function for human beings who are programmed to foster and bring up their children and pass on to them knowledge, skills and values. Teaching as a professional discipline develops from parental roles. Teachers need to tell, show and do. This enhances knowledge acquisition as it involves repetition and role play.

To be effective teachers must understand the hierarchical nature of knowledge, conditions of satisfaction for knowledge, and the appropriate methods for acquiring knowledge. They must introduce subjects at an appropriate level of simplicity. Teachers must understand the cognitive and linguistic functions in humans and must relate these to the levels of complexity of the materials being delivered to learners. Teachers must therefore assess

and record the cognitive development of learners in order to deliver materials to learners at the correct level. The correct level is that which is just beyond the current cognitive, linguistic or social level. This will encourage the learner to use insight and creativity in finding answers to problems and in understanding new concepts and information. In this teachers will be guides and facilitators and will control the learning process.

Teachers must also provide a stimulating environment for learners. Teachers must understand the reasons for and methods available to enhance learning and so will organise learning tasks accordingly. Teachers should be aware of the need to enhance learning with episodic tasks and should reward learners for achievement. Teachers should therefore divide work into episodes. Games and role play may perform a useful part of such episodes as well as providing positive emotions and providing opportunities for active repetition and use of knowledge which has been gained. In this way knowledge may become embedded. The reference to positive emotions is important because the positive limbic affective emotions and desires such as curiosity are associated with laying down memory. Teachers may introduce reward and status in order to facilitate positive emotions. Teachers should encourage learners and attend to their physical and affective needs. Teachers should stimulate curiosity, insight and creativity.

Teachers should encourage disciplined learning skills and encourage individuals to take responsibility for their learning. Self-motivation and private study should be encouraged.

A Cultural Theory of Reference and Meaning

(Part Two of the Causal-Cultural Theory of Reference and Meaning (Causal-Cultural Theory of Education))

<u>Our knowledge of the social world comes from our engagement in social interactions with other members of our culture. This is an Intentional process.</u>

All our knowledge about the social world derives from our faculties of language. This is an innate faculty. We use language as a means of relating with other human beings. Just as we express descriptions of the natural world in language, so we express our knowledge of the social and cultural world in language. We start to learn about our culture as soon as we start to learn how to speak. Cultural knowledge is passed on from one generation to the next through speech. Learning is a process of enculturation. Language is infinitely generative and so is an excellent medium for creativity. Our knowledge of the social and cultural world is not perceived by us, but is constructed by us in collaboration with others. In discourse with others we receive and communicate information. We negotiate meanings in discourse. We "mind read" the behaviour, purposes, desires and intentions of others using thought. Our social and cultural knowledge is narrative knowledge. Social discourse is a necessary factor and the dominant source of our linguistic knowledge.

<u>The speech and behaviour of other humans is communicated to us and made understandable by means of our cognitive linguistic and pre-linguistic functions which impose patterns upon the data and enable us to "mind read".</u>

As we hear language, the expression of the thoughts and behaviour of other humans, through the process of "mind reading", we process others' behaviour

and speech in our brains using pre-linguistic cognitive functions which have been evolutionarily developed in order to allow us to survive in intellectual niches. Our ability to understand others' behaviours and speech enables us to make sense of our social and cultural environment. Of particular importance in this are our linguistic functions. We understand behaviour and speech because these are the perceptual criteria of other people's thoughts and actions. Our knowledge of the customs and practices of our culture mediated to us in our background memory enables us to recognise the intentions, emotions, reasons and motives for their behaviour. Speech enables us to understand the purposes of other people's actions. In dialogues we engage in meaning making and collaborate to achieve collective purposes. Collective speech acts are essential for the construction of societies and culture. We can give status functions to events, objects and persons and so invest them with collectively agreed powers and functions. Such status functions are the basis for all organised institutions and cultural artefacts. In the same way we can understand and predict the behaviour, intentions and purposes since we understand the rules by which our society has been constructed and by which organisation is carried out. Rules are special forms of linguistically expressed generality which constrain and also enable our own actions. Laws are a special form of such rules which are recognised and enforced by state authorities acting through appointed officials.

Speech Acts and Actions

Speech Acts fall into five and only five types. Speech Acts are intentional actions, normally (in perlocution) intended to have an effect upon the hearer of the Acts. They almost always involve power relations and politeness has developed to defuse power imbalances. Actions, not merely Speech Acts, are

Intentional forms of behaviour. They give effect to our motives and reasons and fulfil our desires. Desire-independent reasons for action have a special role in societies and in social interaction. They oblige us to consider others when we act. They compel us to be altruistic and to undertake obligations when would not otherwise wish to do so. They are part of the cement which binds members of a society together. A network of rules, due to the open-texture gives a space for equity and creative thought. Discourse enables us to co-operate with others and form and execute collective purposes. Language is a means of sharing knowledge but it also provides the stuff out of which all aspects of our lives are built. Societies are functional organisations. They fulfil the evolutionary demands of keeping us safe from threats and of enabling us to satisfy our other needs. These attributes give rise to conditions of satisfaction (by which we mean a mechanism for saying whether something is the case or not, whether our assertion or description or what have you is appropriate or inappropriate, felicitous or infelicitous, explanatory or fails to explain). In the case of social knowledge the conditions for satisfaction are the functional ones geared towards self- and collective-preservation and fulfilment of self- and collective-need. Further research is required to enable us more clearly to see what needs our human nature produces in us. The conditions of satisfaction also require that our social and cultural actions fulfil the conditions of satisfaction of the orders of thought of the causal natural world. Hence we must not unjustifiably, in our narratives and actions, contradict the rules of logic, mathematics and the findings of science.

Generality and hypothesis

Generality and hypothesis are important for social knowledge. Our actions are intentional. They are aimed at fulfilling purposes. At an individual level in order to understand the actions of others, their forms of behaviour and their emotions we "mind read". At a collective level in order to understand the structures, institutions and artefacts of our cultures we create explanatory narratives which we use to interpret cultural phenomena. This is advanced conceptual knowledge which can be tested using the Interpretive methodology.

The hierarchical nature of knowledge, language and method

Our knowledge of the world starts with simple descriptive sentences where we mention a referent and then say something about it. As our knowledge increases it becomes more complex. Similarly, our social and linguistic knowledge develops from simple descriptions and becomes more and more complex. Conceptual and hypothetical knowledge are the more advanced forms of thought. Language enables talk about itself. Such talk about talk, or thought about thought is a form of metalanguage. Complex hypotheses and concepts are the most complex forms of language. We start to learn language around birth. We develop linguistic abilities in small increments. At the same time our methods and conditions of satisfaction become more complex. The conditions of satisfaction for a simple linguistic description may be simply a matter of truth or falsehood. Mathematical ideas and concepts are more complex and conceptual and hypothetical language the most complex. The growing complexity of linguistic knowledge goes in parallel with social knowledge and indeed also with causally based knowledge of the natural world. This is what we mean by saying that knowledge is hierarchical.

Thought and language

Wittgenstein has shown in the *Tractatus* that propositional knowledge is linguistic. He developed this in the *Philosophical Investigations.* An assertion in language is the expression of a thought. We cannot think at any level of complexity unless we use language (without language our thinking could be nothing other than rudimentary). Language allows us to model the world symbolically. Language is a tool for understanding and thinking. One of the functions of language is to share knowledge. This can only be achieved where the speaker and hearer use language in the same way. Wittgenstein tells us that language is a public phenomenon. There is no such thing as a private language. Language involves shared conventions of meaning and structure. Chomsky tells us that language functions in general, though not any particular language, is likely to be an innate cognitive function. Like other cognitive functions, it is a product of evolution. Animals other than humans do not possess language, however, they may have to a greater or lesser extent similar cognitive functions to our own. Vervet monkeys demonstrate a high level of object recognition as well as the abilities of generalisation and the association of a symbol (a danger call) with a particular type of stimulus. Vervet monkeys can also lie. This demonstrates a rudimentary ability to communicate but not yet at a level which we would call language.

Affect and emotion

Our cognitive functions include the limbic system which is the seat of many emotions and drives (some drives are controlled by the brain stem). This has profound effects on the things that we express in behaviour and in language.

Similar criteria concerning motivation occur in the social and linguistic realm as with the natural. Reference should be made to the Causal aspect of this study's Theory of Reference and Meaning. Memory is related to the limbic system. Actions and particularly Speech Acts are presented to us in every day forms of life. Our participation in these forms of life is episodic and thus has a strong influence on memory. Learning can be enhanced by associating the materials being learnt with episodes in our lives or good emotions.

<u>Learning – the hierarchical nature of learning - moving from simple to more complex forms</u>

To learn effectively, we need to start with simples and build up to complexity. It is reasonable then to start early learning of language with the applying of names as it were labels to objects which surround us. We should then learn how to use descriptions and concepts building up to advanced concepts and hypotheses. This should be reflected in the learning process and in curricula. We should learn about conditions of satisfaction in order to assess whether what we are saying or asserting is true or false, explanatory or fails to explain. Complex linguistic knowledge is the highest form of knowledge that can be constructed. Learning therefore needs to reflect the learner's increasing abilities to handle complexity.

<u>Insight and creativity</u>

It appears from Hart and from Wittgenstein in the *Blue Book* that we require to use insight in order to learn. Insight is at the heart of learning. It is an intellectual grasping of the answer to a problem. It has close connections to

generalising. Moreover, insight can be trained as Köhler showed. The use of insight should be encouraged and trained.

<u>Teaching</u>

The comments regarding teaching which have been expressed in the Causal Theory of Reference and Meaning equally apply to the linguistic.

7.4 The Causal-Cultural Theory as a foundation for some Empirical Studies

Having stated our Causal-Cultural Theory of Reference and Meaning (a Causal-Cultural Theory of Education). We now look at some empirical studies for which we can now present a cognitive linguistic foundation contained in the Causal-Cultural Theory of Reference and Meaning (a Causal-Cultural Theory of Education). Here we look at Bloom's Taxonomy, Piaget's "Little Scientist", Stages of Development and Affective aspects of learning, Vygotsky's Zone of Proximal Development, Bruner's views on Motivation, and Bourdieu's views on education. In none of these cases do we present anything other than a brief overview. It is not possible to address these at any level of complexity. It is not part of this thesis to do so. They are presented merely to illustrate how the empirical findings can be shown to have cognitive and linguistic foundations as structured in the Causal-Cultural Theory of Reference and Meaning (a Causal-Cultural Theory of Education).

7.4.1 Bloom's Taxonomy

Bloom's Taxonomy (Bloom, 1956) was developed from empirical work in educational psychology. In this thesis we have come to a similar view from an investigation into the philosophy of language and related cognitive faculties – in the opposite direction so to speak. Our study therefore provides Bloom's Taxonomy with a foundation which it previously did not have.

In the original version of Bloom's taxonomy the orders of complexity of educational skills develops from the simplest to most complicated. These forms of knowledge skills are:

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation.

For various reasons this taxonomy was revised and in the revised version of Bloom's original taxonomy the orders are as follows:

- Remembering
- Understanding
- Applying
- Analysing
- Evaluating
- Creating.

As can be seen, the lowest three orders give a reasonable match with the lower orders of thinking and knowledge that we have identified as the cognitive requirements of a causal theory of reference except that we had also mentioned some lower order techniques of analysis in respect that we have

shown that the ability to determine sameness and difference also enable the development of ideas of generalisation and classification and also the beginnings of logical thought which do not appear as specific elements in Bloom's taxonomy. In this thesis, the ability to attend to an object mediated causally is the first step in learning. The memory of several such encounters, again mediated causally, enable the development of concepts necessary for recognition and re-recognition. Memory also enables grouping of objects by causally mediated attention to features of colour, shape and movement and indeed other perceptual qualities. Thus the idea of natural kinds can appear and a rudimentary understanding of our environment is born. The ability to make linguistic connections between these rudimentary concepts and signs enables the expression of these in language. This enables for the first time our understanding to be expressed and applied. And the ability to organise things into kinds or types enables the beginnings of analysis. All of these can be seen to derive from their original causal roots. This is relatively similar to Bloom's Taxonomy.

Bloom's work has been of great importance in explaining the various objectives in teaching and learning. They are much referred to. His taxonomy has been developed to show that all of cognitive, affective and sensory areas are involved and to provide a set of objectives which highlight advances in learning and enable teachers to set assessments which test these areas and so establish when landmarks in learning have been achieved. We do not further investigate Bloom's taxonomy. That is not our purpose. Nevertheless it is interesting that, at least in the earlier orders of complexity, they do reflect our findings.

7.4.2 Piaget's "Little Scientist", Stages of Development, but no Affective Learning

Piaget is one of the most important educational theorists. We will look briefly at two features of his work: His is fourfold stage theory of child development, and his "little scientist" view of child problem solving.

Piaget describes four main stages through which children will develop. (Piaget 1936). These are:

- The sensorimotor stage which occurs roughly between birth and two years of age. In this stage Piaget notes that the main achievement of the child is to be found in recognising the permanence of objects. The child is required to be able to differentiate the object from other things in the external environment and will learn that the object exists even if it is hidden from view.

- The preoperational stage which occurs between two and seven years of age. During this stage the child demonstrates that they are able to apply a symbol to an object. In other words they can use words for an object.

- The concrete operational stage which occurs between seven and eleven years of age. In this stage the child is capable of operational thought in the sense of being able to work out solutions to problems within their heads rather than trying to find a solution by means of trial and error using things in the real world. At the same time numerical abilities are developed.

- The formal operational stage which is achieved from eleven years and older. This stage which lasts into adulthood is the stage in which the child has developed and demonstrates the ability to think abstractly about concepts. The child also learns how to test hypotheses.

This fourfold scheme follows quite closely the stages of the development of knowledge that we have outlined in Chapter Five, namely that object recognition is the starting point for all knowledge. The ability to differentiate the object from other things within the environment and from other similar objects becomes developed. Thereafter a symbol can be attached to it and the beginnings of symbolic knowledge are manifested. Grouping things of the same type together allow for the development of generality and number. Hence numerical abilities follow closely after early linguistic ones are apparent. In this thesis we then showed that the development of grouping of things together under a general description leads to the development of more abstract concepts and hypotheses, these later stages being built on the earlier and simpler cognitive and linguistic achievements. In this way it is clear that the four major stages which Piaget pointed out reflect quite well the origins of knowledge and skills which arise in our causal hypothesis. Thus we are able to say that Piaget's speculations based on empirical observation are, following our Causal Theory of Reference and Meaning, given solid conceptual foundations in our cognitive and linguistic faculties.

Piaget uses the metaphor of "little scientist" to describe the way a child approaches the external world. His view is that the child encounters problem situations and experiments and explores the world until he finds the solution to the problems. Piaget thinks that this bears an analogy with the way that a

scientist encounters and overcomes problems. A scientist proceeds with his or

her experiments after having developed a theory which is then put to the test by

means of the experimentation. Piaget's child likewise learns to understand the

world by means of hypothesis and insight. A problem with Piaget's view of child

learning is that the little scientist is a solitary figure who works everything out

alone and unaided. This view does not allow for the fact that learning situations

for children usually involve social interaction. A child learns a great deal about

problem solving by interaction with teachers and peers. Piaget downplays the

social aspect of learning. The little scientist less clearly learns in a manner

consistent with our Causal-Cultural Theory of Reference and Meaning. It is true

that hypotheses require to be tested to prove their truth. There have to be

conditions of satisfaction. However, our Theory emphasises the importance of

the social aspect both in terms of dialogue with other persons and with regard

to the necessarily social characteristics of language itself.

7.4.3 Vygotsky's Zone of Proximal Development

Whereas Piaget downplayed social involvement in education, Vygotsky insists

that social interaction is vital for learning. One of the important aspects of his

work involves what is known as the "Zone of Proximal Development". This is

defined by Vygotsky (1978) as follows:

> "When it was first shown that the capability of children with equal levels
> of mental development to learn under a teacher's guidance varied to a
> high degree, it became apparent that those children were not mentally
> the same age and that the subsequent course of their learning would
> obviously be different. This difference between twelve and eight, or
> between nine and eight, is what we call the zone of proximal
> development. It is the distance between the actual developmental level

as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers." (p. 86).

In this quotation it is clear that Vygotsky considered that for learning there had to be a social interaction, in this instance between the learner and the teacher, but equally this could occur between the learner and his or her peers during play or organised collaboration. The Zone of Proximal Development is the solution to a problem. The problem is that children of different levels of cognitive attainment cannot achieve learning at a level which is cognitively significantly higher than their own. It seems that learning must proceed by incremental steps. Furthermore the teacher must assess the actual developmental level and deliver materials at a target level of potential development which is higher than but not too dissimilar from the actual level. The child then will learn to fill this gap under teacher guidance or in collaboration with peers. Whilst Vygotsky does not expressly state it, it is relatively clear that what is required to lift the child's development from the actual to the potential level is some ability to grasp or understand the material in the gap. The gap is defined as a problem solving level gap. It is reasonable to assume that in order to make this leap of levels the child will require to use their faculty of insight. Vygotsky therefore appears to provide a place for insight as we have argued for it in this thesis. Furthermore, in respect that education is delivered linguistically, it is reasonable to assume that social interaction will necessarily be involved. Vygotsky expressly states that the achievement is attained through social interaction. The fact that he refers to the level being achievable by problem-solving in collaboration with the child's peers suggests

that a child can learn through role-play as well as through formal educational processes.

Once again Vygotsky's empirical findings expressed in the Zone of Proximal Development are now shown to have a solid foundations in our cognitive and linguistic faculties.

7.4.4 Bruner's Motivation in Learning and Enculturation

Bruner talks about both motivation and enculturation in his book 'the Culture of Education (1996). On page 64, Bruner discusses how a teacher should best motivate a child in the learning process. The teacher who is trained in modern developments in education is "like an omniscient narrator in nineteenth century novels: he knows perfectly what is going on in the minds of the novel's protagonist, even though the protagonist herself may not know." Bruner thinks this situation is not the best motivating for the child. The child should herself be given an idea of what is happening in her own mind. He says: "the child should be aware of her own thought processes, and that it is crucial for the pedagogical theorist and teacher alike to help her to become more metacognitive – to be aware of how she goes about her learning and thinking as she is about the subject matter she is studying. Achieving skill and accumulating knowledge is not enough. The learner can be helped to achieve full mastery by reflecting as well upon how she is going about her job and how her approach can be improved. Equipping her with a good theory of mind – or a theory of mental functioning – is one part of helping her to do so."

On page 97-99 Bruner looks at the idea of culture. Schools are apparently reluctant to discuss culture with students. This is to avoid embarrassing situations from occurring with students from racial minority groups. But, Bruner reminds us, "a school is a culture in itself, and not just a preparation for it" (p.98). Culture should be introduced to children who should be enculturated. That is one of the tasks for teachers. "Culture is a toolkit of techniques and procedures for understanding and managing your world" (Ibid.). Students need to develop a "narrative structure" to help them make sense of and develop within their worlds. They should be encouraged to make stories about their worlds. Bruner observes the importance of narrative in making sense of the world. He says: "Some readers may wonder why literature and drama play such a large part in my account. Narratives for all their standard scripts about life, leave room for those breaches and violations that create [a sense of the strangeness of things] … while the 'storying' of reality risks making reality hegemonic, great stories reopen it for new questioning."

In these ways Bruner echoes from his greatly informed viewpoint what we have been saying at various points in this thesis, that awareness of our cognitive functions and linguistic abilities can only serve to assist us in the learning and teaching process (though we didn't specifically refer to the learner's acknowledgement of this fact). In addition we have stressed the continuing importance of narrative in the construction, transmission and interpretation of forms of life.

7.4.5 Bourdieu

Bourdieu writes in the French Postmodern tradition (if 'tradition' is a word that can be used to describe Postmodernism). Bourdieu believes in the Marxist ideological manner that there is a class divide between the privileged class and the working class and that this is characterised by the attitudes of the privileged who believe that they deserve their privilege while the working class are in some way to blame for their poorer situation. The privileged believe that their culture, which is the dominant, is superior, and, because education is the process of cultural reproduction, the privileged will ensure that their own cultural capital is transmitted via the education process to their children - Bourdieu uses the term "cultural capital" to describe the ways and artefacts of life which contain their advantage. These consist of things like knowledge behaviour and skills which the elite reserve for themselves and their children and which they can use in order to maintain their privilege. In this way, and because school learning is the place which makes the greatest difference to the life prospects of students, those students who come from the privileged class are maintained in their privileged status while the working class students will not be able to draw on cultural capital and will therefore not be able to perform so well at school. Indeed such is the power of the elite that the experience of the imposition of the privileged culture upon working class students can be seen as a sort of cultural or symbolic violence being done to the working class students who have a culture imposed on them which is not their own and which makes them feel inadequate. They may be weighed down by feelings of estrangement and inadequacy and this in itself is likely to damage their prospects of fitting in at school and achieving a reasonable level of attainment. Educational language is also likely to be experienced as an elite cultural imposition leading to the

working class student feeling that education is not for her and engendering a feeling that they will not be allowed to become a member of the educated community.

Bourdieu's theory is very informative and raises interesting questions about power imbalances in a hierarchically organised society. There is more than a smattering of neo-Marxism here. We may ask whether, as postmoderns assert, the having of a power difference must necessarily lead to abuse? But in any event, it is interesting that Bourdieu from his observations has reached the conclusion that we too have, that cultures necessarily create power structures where one person has power over another, and is protected in their dominance by the very structures that give permanence to the society. It must be a task of a teacher to look actively at the students and their performance to see if there are perceived imbalances of power which might be disrupting the learning experience for her students and if so to take action to ameliorate the structures that perpetuate such imbalances and that may damage a child's ability to succeed.

7.5 Contribution of this Study

In this thesis this study has made the following elements of contribution:

1. Developed a Causal-Cultural Theory of Reference and Meaning (a Causal-Cultural Theory of Education). This study has shown that all non-social knowledge is causally transmitted to us. Social knowledge is the product of our experience of linguistic organisation. It comes to us causally as a result of our

experience of the linguistic forms of Speech Acts and in discourse. Narrative explanations are however required to interpret social knowledge. The benefit of this theory is that it provides a philosophical foundation for education from the first moment of apperception of the natural and social worlds up to the development of complex concepts and theories. Such a foundation is needed to provide a theoretical support for various empirical studies of teaching and learning as we saw in section 7.4 of this thesis. The individual elements of this theory also provide a basis for developing practice. For example that colour, shape and motion draw the attention of early learners to objects in the perceptual environment which the teacher wishes the learner to concentrate upon.

2. Given an ontology of fields of knowledge, language, methods and conditions of satisfaction. This study has shown that in each of these fields the elements develop from simplicity to ever greater levels of complexity. This finding also supports educational theory as it shows the inter-dependence of these ontological fields and indicates that complexity one field will imply the presence of similar complexity in the others to which it is causally related.

3. Demonstrated that, since language is essential for the organisation of society, since language necessarily depends upon social conventions, customs and practices, and since explanations of social organisation necessarily involve narrative language, that enculturation is a necessary part of becoming a fully rounded user of language. Apart from the theoretical confirmation of this point, this finding supports practice. To enable the development of knowledge and of language in the learner, the teacher should introduce the learner by stages into aspects of the culture of the linguistic community. By role playing and other

forms of lived experience in simple aspects of a culture, the learner is also developing by stages theoretical and practical skills of description, generality, hypothesis forming and the relative linguistic, logical and analytical powers appropriate to the stage of learning.

4. This study has shown that Searle's five-fold division of types of speech act is deficient to the extent that he does not recognise that all five forms of speech act may involve the creation of power relations. His Theory of the Philosophy of Society is also deficient to the extent that he relies solely upon Declarations as the means of building society, when in point of fact all the other forms of Speech Act have a role. Commissives and Directives are of particular importance. In addition, all of the five forms of Speech Act, since they can involve power relations, can be sources of tacit power relations within a society. This finding has strong theoretical implications. For example that by the use of the five types of speech act, a consistent and rigorous theory of society can be developed. It also explains why power relations must necessarily come into existence and cannot be excluded in organisations and inter-personal relations at any level of complexity. So far as practice is concerned, the unavoidability of power relations is of importance in the classroom. The teacher should be aware that in all teaching and learning situations and in all other social situations, including in peer relations, power structures are inevitable and situations which are abusive or threatening must be avoided by active intervention.

5 This study has demonstrated that human decision making and human action involve a balance between the desires, emotions and the rational systems of thought. While Searle thinks that Desire-Independent Reasons for Action are what impel us to carry out actions, and in the social field this is generally true of

organised collective action, there is a role for desires and emotions as motivations for complex actions of which learning is one. This finding is important for both theoretical and practical purposes. If a learner is to become a fully rounded individual and a contributing member of the linguistic community they need to come to an understanding of their and others' motives and reasons for action. The two categories of motives and reasons are mutually exclusive in the sense that motives may frequently run counter to our reasons for action. What we are obliged or need to do may well be very different from what we want or desire to do. A learner has to discover this fact early in order to develop disciplined approaches to learning. That this dichotomy is also important in the process of developing the ability to "mind read" other individuals and groups ("mind read" is used here in the sense of imagining from the inside what another individual is thinking as shown by Humphrey (see page 174)). Without this ability to discern the difference between motives and reasons a learner would be greatly disadvantaged in both classroom and society as a whole.

6. There is scope for a development of the way that we understand and use rules. This study looked at eight ways that a rule may be defined and used. Wittgenstein draws our attention to the fact that meanings of words and activities (customs and practices) are rule ordered but he also draws our attention to the fact that, at a fundamental level, following a rule is a matter of custom and practice. While there may be a certain circularity in Wittgenstein's view, it follows that our idea of rules both informs and flows from the distinctive customs and practices of our linguistic community. This has both practical and theoretical implications. For practice it shows that the learner necessarily must

be introduced by stages into the distinctive customs and practices of our culture. This should be done from the earliest stages of the learning process. The theoretical aspects show why it is that we are engaged in an interminable process of re-evaluating the scope and implications of rules. For example, in a legal context, the rules of the common law are continually reinterpreted and their boundaries reassessed by judges leading to the refinement of legal rules to contemporary situations despite the doctrine of precedent. Hart shows that rules have an open texture and thus also stand as a basis for developing the meaning of the fields which they are used to explain. They therefore provide a standard for interpretation and a springboard for creative development. This conclusion can assist the teacher in guiding the learner to understand, learn and use rules in the development of meaning and in recognising the rule ordered nature of social activity.

7. This study has shown that insight and creativity are essential elements in understanding, problem solving and learning. Developing the conclusions from the previous question, while rules may provide a spring board to creative development of meaning and action, the processes of insight and creativity are what lead the learner to new areas of knowledge and action. For educational practice, in the manner of Vygotsky's Zone of Proximal Development, the learner may best learn new meanings and practices by being presented with a problem and its rule ordered foundation slightly in advance of their level of understanding in order to develop their insightful and creative abilities and in order to take possession of the creative step which leads to the resolution of the problem.

8. Hart describes social order in terms of rules and rule-ordered activities. He describes these as necessarily "open-textured." Judges must use their intuitions in order to interpret rules in order to apply to concrete situations thus filling the gaps between rules in the open texture. Rules take us only so far. This study has shown that the faculty of insight may have an important role in developing rule-ordered models of society and indeed it may have a role in developing all our other rule-ordered forms of knowledge. It is suggested that insight has a role not only in filling in the gaps within a rule-ordered system but that insight can also show us alternative rule-ordered methods of modelling areas of our knowledge. This study has suggested that this is the basis of Kuhn's paradigm shift view of the scientific method where new means of explanation are developed by means of making creative jumps of insight. It suggests that this is a natural human way of developing knowledge. This study has discussed the theoretical and practical implications of a rule ordered system of customs and practices for teaching and learning in our discussion of element of contribution 6 above to which the reader may wish to refer in order to show how these implications are also relevant to the current section of contribution. In that discussion this study has shown that a rule ordered system can provide a springboard for creative and insightful learning.

9. This study has shown that power relations are essentially involved in discourse and that therefore power differentials are essentially involved in the classroom. This imposes upon teachers the duty to regulate power and to reach a balance. This study has discussed the theoretical and practical implications of power and power relations and the implications for teaching in the discussion of element of contribution 4 above.

10. This study has shown the importance of fresh holistic studies of human nature, human action and motivation taking full account of our cognitive and linguistic functions. The research in this thesis is embedded in a particular place and time and the state of knowledge at that place and time. This thesis has utilised various findings in linguistic philosophy, cognitive neuroscience and psychology. Understanding human nature as revealed in these fields is necessarily provisional. Human nature therefore needs to be reassessed as advances in these fields are made. As these advances are made educators should reassess their theory of education and their educational practices. This is perhaps most clearly necessitated in the field of cognitive neuroscience which is a rapidly advancing science.

11. This study has shown the importance of addressing our human affective and emotional nature in memory, learning, rule-following, self-presentation, role-playing, self-image, and self-empowerment. All of these areas are essential in the development of theoretical frameworks and for educational practice. For example, we have shown that memory has a particular connection with limbic processes. Memory can be enhanced by learning in emotionally safe and calm environments and by episodic learning. The practice of education can therefore enhance the learning process by utilising these findings. In some circumstances drugs may also assist in emotional stabilisation and in enhancing memory and thus learning. A safe and calm environment will also avoid threats to self-preservation, neutralise power imbalances, and enhance and support self-image. A confident learner is more effective than one with poor self-image. Self-image and confidence can be enhanced by roleplaying as Goffman has shown.

A confident learner is also better self-empowered and can therefore contribute more to the learning community and society.

This study has mentioned in the Summary of Methods and Findings at the beginning of this thesis that the teacher is a facilitator, guide, assessor, protector and friend to the learner (page iii). This was also discussed in more detail on pages 178f of this study. All of the above elements of contribution show how this general view can be specifically achieved following the conclusions of this research study.

7.6 Recommendations for further Research

This thesis can only be regarded as at best an interim report. It is dependent upon our current state of knowledge. To refine our Causal-Cultural Theory of Reference and Meaning (a Causal-Cultural Theory of Education), it is necessary for there to be research in the following areas:

1. Our pre-linguistic cognitive functions;

2. The nature and utility of rules in rule-ordered systems of knowledge and action;

3. Research to show what precisely are the socio-biological factors and other functional facts which directly or indirectly constrain human cultures and societies both in general terms and with respect to particular societies. It is thought that human societies are created and organised to be functional. It must be possible to carry out a functional analysis of the structures and

institutions of a culture to identify its functional characteristics. It is recognised that in a large society the members are a considerable distance (causally and existentially) from the threats which constrain it, so that for most members they will simply not be aware of what these factors are. This recommended research is important in order that a full set of conditions of satisfaction for any narrative explanation and interpretation of any given society can be asserted. This will enable sociological explanations to provide us with greater certainty than the present "opinions" that are offered.

4. Further research into human affect and emotion, and proper cognitive and philosophical study of these needs to be given.

5. Research is needed to show how human affect and emotion relate to human action. The philosophy of action appears to a great extent to down play or exclude affect and emotion, while at the same time recognising it as part of the essential motive for action.

6. Generally, research on a holistic model of human nature should be conducted. All knowledge is in effect human knowledge. This may give us important clues as to how our human nature structures the way we perceive, know about, and act in the natural and social worlds.

7. Generally, research should be undertaken to investigate what essential knowledge or types of knowledge there may be in our Background knowledge, skills, attitudes and values that are so important for a proper understanding of the meaning and use of words. It may be that this is too vast a subject to be undertaken, but even if we cannot state what the contents of the Background are, we can at least try to see what sorts of areas it involves.

7.7 Closing Remarks

Our pre-cognitive functions, evolutionally developed long ago to enable us to survive in the hostile Savanna environment of central Africa, has given us language, knowledge and creative abilities built from a number of embedded skills. These we term the central cognitive skills. These skills are: object recognition, pattern recognition, pattern imposition, logical skills, numerical and mathematical skills, the ability to group objects together by reference to their similarities or divide similar objects apart by reference to selected dissimilarities, powers of generalisation, powers of rule formation, powers of thinking and judging categorically, problem solving skills, intuitiveness, insight and creative thinking, methodology creating powers, narrative creativity, purpose making, "mind reading", social cooperation and rule following. These skills are what make us distinctively human. They are the basis of all of our knowledge. They dictate how we engage with the environment and with each other. They dictate our forms of rational judgement and linguistic expression. Education, whatever it's secondary purposes may be, has to fit human beings to become efficient in the use of these central cultural skills. Our ability to survive now and in the future depends on these skills, as does our ability to overcome the problems and threats of our age which are many-fold. Our societies and cultures depend upon our efficient development and use of these skills. Our cultural knowledge and artefacts, scientific or social, are built out of practical iterations of these skills as interpretative tools which can elucidate our

own nature and that of the environments that formed us. Our children must be honed in these skills in order to participate in social and cultural life. The way to achieve this is to recognise the hierarchical structure of our knowledge, skills and values so that our children learn the central cognitive skills systematically, hierarchically and efficiently. Only once these central skills are reflected systematically in education can optional secondary modules be added on to any educational curriculum such as to fit individuals to particular roles in society, to fit them for employment, to lead out the particular specialisms valued and utilised by our cultures, to make the most of individual aptitudes, or to make good democrats, good parents, effective tax payers and valued contributors to our populations. These optional secondary modules are in reality, however they may have been valued historically, politically or ideologically, mere add-ons while the importance of the central core cognitive skill set should never be obscured. It is that central cognitive skill set that makes our interaction with our environments particularly human and that show us who we are and what we must remain: a contingent animal species struggling to survive, armed only with puny physical powers and an inordinately huge imagination.

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APPENDIX

Initial Research Questions: origins, context and utility

Question number:	Origins:	Context:	Utility:
1. How far can an understanding of pre-linguistic cognitive functions and linguistic functions be related to knowledge?	Wittgenstein 'Tractatus': "Logic pervades the world: the limits of the world are also its limits". Certain areas of experience indicated that learning about the external world empirically was not feasible: for example learning the categories of colours. These appear to be related more to our perceptual faculties than to our concepts.	Wittgenstein states that language pictures the world and hence objects in the world are represented by objects in language. He does not state what the connection between world and language is or the direction of fit.	Provided we can satisfy the requirement that we can identify objects in the world and show how language objects and objects in the world are related, we should be able to show how the development of our knowledge mirrors the increasing complexity in our language.

2. Do pre-linguistic cognitive and linguistic functions structure our knowledge?	Whorf, Searle and others writing on the direction of fit of world and word and also on the philosophy of perception. We appear innately to attend to objects in the world using colour, outline and motion. This is particularly observable in young children. It seems reasonable to ask whether objects in the world so attended to might not necessitate our reference to them in language.	While Whorf shows some uncertainty about whether our language determines our knowledge of the world, Searle and others take the view that our perception of the world and our knowledge of the world is derived causally with the direction of influence being world to word.	This question enables us to investigate whether, provided we are able to identify objects in the perceptual field, we can develop a theory of causal connection and dependence of words upon our perception of the world.
Question number:	Origins:	Context:	Utility:
3. How can a knowledge of pre-linguistic cognitive functions and linguistic functions illuminate and enhance our understanding of education, learning and teaching?	Reading and research: Bloom, Bruner, Piaget, Vygotsky and others.	Reading and research indicated that there was a gap in theory of education as many studies were based upon empirical findings but lacked a sufficient philosophical foundation.	This question stands as the principal motivation for this research: the attempt to give adequate philosophical foundations to these studies.
4. How are language and thought related?	Wittgenstein 'Notebooks 1914-1916' p.82 and 'Philosophical Investigations' paragraphs 329 and 330.	Wittgenstein equates language with thought. What can be thought can be expressed in language, and what can be expressed in language can be thought.	Returning to the connection between world and word, and by extension and via culture the concepts we use to create and explain our culture, both of these areas of knowledge can be expressed in and analysed though language.

5. What are curiosity, insight and creativity so far as relevant to education? How are they or should they be involved in the educational process?	This question derives from, amongst others, Köhler's 'The mentality of apes' and other readings in animal behaviour studies and in Gestalt psychology regarding pattern recognition.	The phenomena of insight and creativity appear to be closely involved in the forming of explanations, hypotheses and theories.	This question enables us to explain and enhance our ability to form explanations, hypotheses ad theories which are used in teaching and learning in practical situations in education.
6. Must we understand explanations of society and culture in terms of narrative?	Reading amongst others Danto's "Narration and knowledge" also important for social theorists such as Foucault who asserts the importance of Discourse as interpretation of social entities and power structures.	Narratives are descriptions at lesser or greater levels of complexity and therefore have a major role in expressing our knowledge of both the natural and social worlds.	We learn about the worlds in which we live by means of narratives of knowledge. We also learn through education to create and express our knowledge through narratives of lesser or greater complexity.
Question number:	Origins:	Context:	Utility:
7. How does narrative illuminate the educational process?	Practice of education showed that much social communication is in the form of narrative. Children appeared innately interested in narratives and frequently learnt best when concepts were translated into a narrative form.	Narratives appeared to enhance the learning process making concepts more accessible to learners.	While the previous question expressed the mainly theoretical aspects of narrative for knowledge, this question expresses the practical importance of narrative in teaching and learning.

8. How are power relations related to the educational process?	This question was stimulated by J L Austin's and Searle's five forms of speech, Searle's philosophy of society and reading Marx and post-modern writers. Practice indicated that power imbalances were not conducive to learning. Similarly low esteem.	Searle develops the five forms of speech as an explanation for how society comes to exist, to be built and explained. Reading Marx and post-modern writers have shown the importance of power as consistent theme in cultural and political thought.	Three of the five forms of speech involve the creation of power relations or the creation of status functions. It seems that speech necessarily invokes power structures which will therefore appear in any educational context. These bring about practical consequences and responsibilities. Ironing out power imbalances assists teaching and learning.
9. How can we enhance Motivation in education?	Readings in cognitive neuroscience, psychology and especially personality psychology especially Freud, Jung, Minsky, Peterson, Pribram, Goffman and others. Also reading philosophical analyses of emotions and their part in decision making.	Studies showed that the evolutionary development of the brain and particularly the limbic system and the cerebral cortex involved respectively the emotional and rational centres of the brain. These have consequences such as the tension between emotional motivations and rational reasons for action.	An understanding of the tension between motives and reasons enables greater understanding of our decision making and behaviour. The discovery of the importance of the limbic system for laying down memories could suggest ways of enhancing learning efficiency.
Question number:	Origins:	Context:	Utility:

10. What are the conditions of satisfaction (truth/falsehood of linguistic and mathematical assertions, appropriateness or otherwise of generalities and scientific laws and interpretative narratives) for our knowledge? How are these conditions of satisfaction related to the acquisition of knowledge?	Reading analytical philosophy and in particular Wittgenstein, the logical positivists, Ayer, and Searle.	These areas of philosophical thought showed various ways of connection between meaning and truth, meaning and verification of hypotheses, and interpretation and truth. Searle variously uses the idea of 'conditions of satisfaction' as both a means of understanding the meaning of an expression and also a means of assessing the truth of a concept.	In this research the idea of 'conditions of satisfaction' enable the truth of a description, generality, hypothesis or interpretation to be assessed and thereby enabling the move from mere opinion to the expression of a fact. Or inversely, if we do not have conditions of satisfaction, we cannot assert the truth of an assertion.
11. Can we state a Theory of Education which summarises our findings concerning the above?	The accumulation of reading and research undertaken for this thesis.	This research concludes with theory of education drawing the various aspects of research together.	The theory of education lays philosophical foundations for educational theory and provides practical guidance for teaching and learning practice. Some of the implications of this theory are given in the section in this thesis on Contribution (p.315ff).