Ludwig Wittgenstein's Legacy to Cognitive Psychology: Concepts as Participatory

by

Susan Byrne, B.A.

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Head of Department of Philosophy: Dr Michael Dunne

Supervisor: Dr Michael Dunne

Co-Supervisor: Dr (des.) Simon Nolan

Co-Supervisor: Dr Fiona Lyddy (Department of Psychology)

C O N T E N T S

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INTRODUCTION

'James: "Our vocabulary is inadequate." Then why don't we introduce a new one?'[1]

Ludwig Wittgenstein (1889–1951) is regarded as one of the most influential and eminent philosophers of the twentieth century. In both his early and later work, he is a key figure in the development of analytical philosophy: he wants us to see that natural language use is pivotal to understanding the nature of the mind.[2] However, his later work, specifically with regard to the *Philosophical Investigations* (1953) [henceforth referred to as the *Investigations*], where concepts are a participating part of the context, makes him a key figure in contemporary cognitive psychology. While Wittgenstein's interest in psychology began between 1934-1936 when he lectured on private experience and sense data,[3] his contributions to the field of psychology continued up until his death in 1951. Unknown to Wittgenstein at the time, his remarks on philosophical psychology would have an enormous influence on both the psychology and philosophy disciplines.

[1] Ludwig Wittgenstein, *Philosophical Investigations* [1953], trans. by G.E.M. Anscombe, 3rd edn, (Oxford: Blackwell, 2001), #610.
'James' here refers to William James (1842–1910). Psychology's inception can be seen in the early stages of American psychology, commencing with James. As part of his seminal work, he proposed that there should be less emphasis on the structure of consciousness and more emphasis instead on the character of consciousness and its relation to the environment. Here we can see a Wittgensteinian theme in terms of the prominent role that the 'context' or the 'environment' play. In 1890 James published *Principles of Psychology* in the United States. (Also, interestingly, the first two words in *Zettel* are: 'William James'.)

[2] Meredith Williams, Preface, *Wittgenstein, Mind and Meaning — Towards a Social Conception of Mind* (London: Routledge, 1999).

[3] Hans-Johann Glock, *A Wittgenstein Dictionary* (Oxford: Blackwell, 1996), p. 23.

Wittgenstein is a towering figure in history and yet his contribution to the domain of cognitive psychology specifically has, to date, been undervalued and underestimated. This study examines Wittgenstein's move from viewing language as a calculus to his more natural language view as exemplified in his language-game. While Wittgenstein's early work in the *Tractatus Logico-Philosophicus* (1921) [henceforth referred to as the *Tractatus*] is primarily concerned with language and logic, and was influential on the logical positivist movement, his later philosophy shows his view on language, human nature and how behaviour is intrinsically linked to the practice of language and its use.

Wittgenstein's remarks and descriptions in his later work, the *Investigations*, show concepts in varying ways, such as 'concept' *qua* concept, concepts 'about' things in the world, and the more specific concepts that he refers to in the preface of the *Investigations*. In contrast to Wittgenstein's description of concepts and the practice of language, the cognitive approach adopted by psychology explains concepts and, therefore their use, in a more developmental and theoretical framework.

The term 'family resemblance' is used by Wittgenstein to show that there is no defining feature, no one essence, of a concept but rather there is a criss-crossing and over-lapping of features. This term 'family resemblance' was later used by cognitive psychology to support an approach in concept development, namely the prototype view. Interestingly, while the cognitive theorist Eleanor Rosch used Wittgenstein's term family resemblance to

develop the prototype view in cognitive psychology, I am using Rosch's term 'participatory' to support my argument that Wittgenstein considered that concepts are participatory in any language-game.

While the *Investigations* also shows Wittgenstein's rejection of mentalism and cognitive analysis, he does not deny that mental processes and states exist; he considers, rather, that they should play a more prominent role in how we use language. For Wittgenstein, this is not in any developmental way, but in our behaviour. Furthermore, Wittgenstein is aware of the limitations of behaviourism.

Wittgenstein's descriptions and remarks show concepts are not isolated and abstract objects, but 'participate' within a context or environment, i.e., a language-game. Through a language-game, the individual, with mind and body (in a non-dualistic sense)[4] engages with concepts. Wittgenstein's description of this process is a contemporary cognitive approach to concepts, namely the embodied cognition thesis.

This study will show how Wittgenstein's *Investigations* and his remarks on concepts have had a direct influence on cognitive psychology, thus I consider that he should be viewed as one of the key figures in the history of

[4] Proponents of the embodied cognition thesis argue against the radical separation of 'mind' and 'body'. These authors, however, still need to talk about 'the mind' and 'the body' to explain their embodied cognition thesis, and so, sometimes this may give the impression that these are separate entities. Thus there is a linguistic paradox that terms have to be used about 'the mind' and 'the body', but in a non-dualistic sense. Throughout this study, therefore, I have attempted to use the terms 'body' and 'mind' in the embodied cognition viewpoint in a non-dualistic sense, while the context determines whether the terms are being used in a traditional Cartesian dualistic sense or non-dualistic sense.

psychology, alongside other prominent theorists such as B. F. Skinner and Sigmund Freud.

This dissertation comprises seven chapters. Chapter one begins with an outline of difficulties in interpreting the influence of Wittgenstein's thought on cognitive psychology, but demonstrates that his thinking on the nature of 'concepts', 'language-games', 'meaning', 'human behaviour', 'family resemblance' are of central importance to cognitive psychology.

Chapter two looks at the historical background to the philosophy of language and introduces two of its main contributors, Gottlob Frege and Bertrand Russell. Arguably logic might have played an important role without Wittgenstein, due mainly to the significant contributions by Frege and Russell, but it was 'Wittgenstein who provided a powerful methodological rationale for its role, and who brought language into the equation.'[5] The logical positivists' approach to language is discussed in light of the *Tractatus* and we examine how Wittgenstein's move from a quasi-realist position to an anti-realist position is exemplified in the *Investigations.* We look at the role of behaviour that Wittgenstein is so interested in, and how he rejects any theoretical account to explain language and its use.

Chapter three examines Wittgenstein's continuity of thought in relation to language as he moves from presenting a calculus view of language to a language-game view of life. His two central concepts are introduced and

[5] Glock, *A Wittgenstein Dictionary*, p. 28.

examined: ‘language-games’ and ‘family resemblance’. His views on language as behaviour, or a human activity, and the role that language plays for Wittgenstein are all explored.

Chapter four examines the potential problem for philosophy and psychology if Wittgenstein is viewed as a behaviourist rather than as a philosopher who had an interest in behaviour. This misinterpretation of Wittgenstein leads to a major misconception and misunderstanding of his work, and subsequently distorts the significance of his rejection of mentalism and his foresight in seeing the limitations of behaviourism. We look at Wittgenstein’s interest in behaviour as a way of explaining language and its use, and ultimately how this behaviour is part of engaging with the context, or the environment, where concepts become participatory. There is also a brief overview of his private language argument to support his rejection of mentalism, a description on the differences between analytical behaviourism and methodological behaviourism, and some commentary on Skinner to support the argument that viewing Wittgenstein as a behaviourist is a misinterpretation of his work and of his philosophy.

Chapter five examines the philosophical roots and origins of psychology, and paradigms such as structuralism, functionalism and Gestalt. There is a discussion on the nature of concepts, which outlines their function, such, as communication, inference, prediction, understanding and reasoning, followed by an examination into the different approaches that cognitive

psychology takes to concepts, thus the definitional view and prototype, exemplar and knowledge approach are all discussed. There is also a review of the cognitive revolution, which ultimately gave rise to how the mind was being re-considered as new terms, such as 'cognition' and 'cognitive processing', were introduced. However, while the revolution moved psychology in a new and promising direction, it still remained 'abstract' and failed to take account of the environment and the role that a context could play.

Chapter six looks at the historical anchors of embodied cognition, such as: metaphor and cognition, enactive cognition, rethinking robotics, and phenomenology,[6] before Margaret Wilson's six claims for embodied cognition are examined. We look at remarks from the *Investigations* to show the Wittgensteinian theme of situating concepts and showing concepts as participatory and part of the context, before finally assessing the empirical domains for embodied cognition.

Chapter seven presents a series of arguments which show that concepts, as they occur in a language-game, are participatory. Furthermore, I show how the interaction between the context of a language-game, concepts that are participatory and the individual, is also known as the embodied cognition thesis. This is Wittgenstein's legacy to cognitive psychology.

[6] Robert A. Wilson and Lucia Foglia, 'Embodied Cognition', in *Stanford Encyclopedia of Philosophy* < http://plato.stanford.edu/entries/embodied-cognition>
[accessed 08 August 2012] (p. 8).

CHAPTER I

SITUATING WITTGENSTEIN'S THOUGHT IN RELATION TO COGNITIVE PSYCHOLOGY

'Compare a concept with a style of painting. For is even our style of painting arbitrary?'[1]

Wittgenstein's *Investigations* is a book which proposes to deal with a number of concepts. In the preface dated 1945, Wittgenstein states that the *Investigations* are philosophical 'remarks' that concern many subjects: 'the concepts of meaning, of understanding, of a proposition, of logic, the foundations of mathematics, states of consciousness, and other things.'[2] However, while this dissertation is concerned with these sorts of concepts, it is also interested in Wittgenstein's remarks on 'concept' *qua* concept. These are the type of concepts that are essential for us to make sense of the world and our experiences. Thus this research is concerned with Wittgenstein's concepts as described in his remarks and with the concepts that occur in language-games where they can be seen as 'participatory' and where, as Rosch puts it:

> The world does contain 'intrinsically separate things.' The world is structured because real-world attributes do not occur independently of each other.[3]

This dissertation also examines the cognitive view of concepts, thus an inter-disciplinary approach is taken. We look at cognitive psychology's theoretical

[1] Wittgenstein, *Philosophical Investigations*, p. 195.
[2] Wittgenstein, *Philosophical Investigations*, Preface.
[3] Eleanor Rosch and others, 'Basic Objects in Natural Categories', *Cognitive Psychology*, (1976), 382-439 (p. 383).

account of concepts and their use which is in contrast to Wittgenstein's 'form of life' or concepts as part of the context.

In the *Investigations* Wittgenstein is primarily concerned with how the role of language is involved in human behaviour. Unlike his earlier work in the *Tractatus* where he is concerned with the picture theory of meaning, and for us to understand language as a picture that structures reality, the *Investigations* is Wittgenstein's own investigation into the workings of language and grammar. For him, the language-game is a communal process: it is language in action, language as behaviour, a form of life.

In the language-game, Wittgenstein considers that there is no one essence of a 'game'; similar to his exposition of the term 'family resemblance', features over-lap and, thus, many and various associations are considered:

> In such a difficulty always ask yourself: How did we *learn* the meaning of this word ("good" for instance)? From what sort of examples? In what language-games? Then it will be easier for you to see that the word must have a family of meanings.[4]

This term ('family resemblance') has also greatly influenced the seminal work of Eleanor Rosch (1978) and the prototype view on concepts which is discussed in Chapter 4. Wittgenstein argues that there is no one single or defining feature that all games have in common. In fact, many of the features and characteristics of 'games' are similar to, and some are identical to,

[4] Wittgenstein, *Philosophical Investigations*, #77.

characteristics of human activity, hence his argument that language is a function of life or a 'form of life'.

Wittgenstein makes use of metaphors and analogies throughout the *Investigations:*

> In what sense can one call wishes, expectations, beliefs, etc. "unsatisfied"? What is our prototype of nonsatisfaction? Is it a hollow space? And would one call that unsatisfied? Wouldn't this be a metaphor too?—Isn't what we call nonsatisfaction a feeling—say hunger?
>
> In a particular system of expressions we can describe an object by means of the words "satisfied" and "unsatisfied". For example, if we lay it down that we call a hollow cylinder an "unsatisfied cylinder" and the solid cylinder that fills it "its satisfaction".[5]

He now sees language as a tool, rather than his previous description in the *Tractatus,* where he describes language as a picture. He wants us to think of words as tools and sentences as instruments. Wittgenstein's metaphor of a language-game is used so that we understand using language as an analogy for playing games: using words and playing games are a human activity, a form of 'behaviour'. He is asking us to look at the uses of words and to observe the over-lapping and criss-crossing of family resemblances. He further contends that even abstract concepts[6] (as opposed to concrete concepts)[7] we use, such as 'truth' and 'government', are all understood in their use only: there is no one

[5] Ibid., #439.

[6] Abstract concepts are more difficult to understand and, therefore, acquire, and use competently. Children usually move from being able to use concrete concepts competently to the more abstract concepts between the ages of 10 and 12. An example of an abstract concept would be the term 'justice' or 'fairness'.

[7] An example of a concrete concept would be 'apple', 'chair', and 'bed'. Concrete concepts are easier to acquire than abstract concepts; once learned they are easily identifiable and can be categorised without too much difficulty. Furthermore, when concrete concepts are acquired, extensions can then be made, such as including items like 'bedside lamp', 'curtains', and 'dressing table' as all belonging to the same category as 'bedroom furniture'.

single essence that defines these terms. For Wittgenstein, there is no place outside of language that we can stand and observe its workings or its meaning, and nor can language ever be transcended. Finally, he contends that philosophical problems only arise from the misuse and, therefore, the misunderstanding of language: he states that if a word is abstracted from a language-game, confusion and ambiguity arise:

> Our craving for generality has another main source: our preoccupation with the method of science […]. Philosophers constantly see the method of science before their eyes, and are irresistibly tempted to ask and answer questions in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness. I want to say here that it can never be our job to reduce anything to anything, or to explain anything. Philosophy really *is* 'purely descriptive'. (Think of such questions as "Are there sense data?" and ask: What method is there of determining this? Introspection?)[8]

Wittgenstein is considered by some 'to have exerted an influence more powerful than that of any other individual upon the contemporary practice of philosophy.'[9] Since Warnock made this statement in 1958, many still regard Wittgenstein in this light. Without exception, he is remarkable in many respects outside of the *Tractatus* and the *Investigations*, and indeed it could be considered that often his other works, such as: *Zettel*, *Remarks on Colour*, *On Certainty*, *Culture and Value* and *Remarks on the Foundations of Mathematics*, which were all published posthumously, are forgotten in the shadows of the substantive and influential texts of the *Tractatus* and the *Investigations*.

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[8] Ludwig Wittgenstein, *The Blue and Brown Books, Preliminary Studies for the Philosophical Investigations* [hereafter either The Blue Book or The Brown Book][1958], 2nd edn, (Oxford: Blackwell, 1969), p. 18.

[9] G.J. Warnock, *English Philosophy Since 1900* (London: Oxford University Press, 1958), p. 62.

Wittgenstein's central idea of language as behaviour, a human activity, and the role that language plays in using concepts, is key to understanding his contribution to psychology. This dissertation will show that cognitive psychology has been shaped by Wittgenstein's remarks on concepts and language-use, specifically in the areas of how concepts are situated within a context or environment, and the embodied cognition thesis.

1.1 *STATUS QUAESTIONIS*

While there is much written about Wittgenstein, there are limited documented details of his direct contribution to cognitive psychology.[10] While we know that there are many philosophical influences throughout psychology as a whole, there are some that are specific to cognitive psychology. The focus of

[10] I use the word 'limited' when I am referring specifically to cognitive psychology and the direct contribution that Wittgenstein made. Clearly, there is extensive literature on how Wittgenstein, both in general terms and also in more specific areas, contributed significantly and these contributions have been documented by eminent philosophers, critics and scholars. While it would be impossible to name all of the major contributors on Wittgenstein, and difficult to choose even a few of the most prominent (depending on the area of interest in question), the commentary that I consider to have portrayed Wittgenstein from the most accurate and factual perspective are: G.P. Baker and P.M.S. Hacker, *Essays on the Philosophical Investigations, Wittgenstein – Meaning and Understanding* (London: Blackwell Publishing, 1980); Hans-Johann Glock, *A Wittgenstein Dictionary* (Oxford: Blackwell Publishing, 1996); Maria McGinn, *Wittgenstein and the Philosophical Investigations* (London: Routledge, 1997) and *Elucidating the Tractatus – Wittgenstein's Early Philosophy of Logic and Language* (Oxford: Clarendon Press, 2009); Norman Malcolm, *Ludwig Wittgenstein A Memoir* (Oxford: Clarendon Press, 1958); Ray Monk, *The Duty of Genius* (London: Vintage, 1991); Charles Travis, *Thought's Footing* (Oxford: Oxford University Press, 2009) and *The Uses of Sense – Wittgenstein's Philosophy of Language* (Oxford: Oxford University Press, 2001); *Ludwig Wittgenstein – Philosophical Occasions 1912-1951*, ed. by James Klagge and Alfred Nordmann (Indiana: Hackett Publishing Company, 1993); and Meredith Williams, *Wittgenstein, Mind and Meaning – Towards a Social Conception of Mind* (London: Routledge, 1999).

this dissertation is to show how Wittgenstein's remarks, specifically from the *Investigations,* has shaped the current cognitive approach as to how concepts should be reconsidered and viewed. In contrast to preceding theoretical accounts of concepts, commencing with the definitional view, the embodied cognition thesis and situated cognition see concepts as *part of* the environment. Having examined Wittgenstein's remarks in the *Investigations,* we will see how he has always considered concepts as *participatory* and as part of the *context,* rather than anything abstract or isolated.

There has been a significant amount of research conducted on how concepts can be better explained and understood. Recent approaches are in the form of 'embodied cognition' (also known as the 'embodied cognition thesis'), 'situated cognition', and 'the extended mind'. However, one difficulty I have found in this research is that the material sometimes becomes nebulous in the sense that it can be difficult to define *exactly* what any of these terms mean. The 'Extended Mind Thesis' claims, for example, that:

> cognitive processes are situated, embodied and goal-oriented actions that unfold in real world interactions with the immediate environment, cultural tools and other persons.[11]

Theorists, such as Anderson,[12] Clark,[13] Gallagher,[14] Clancey,[15] and Glenberg[16] have written extensively on these subjects – embodied cognition, situated

[11] Lucas Bietti, 'Can the Mind be Extended? And How? Review of "Supersizing the Mind: Embodiment, Action and Cognitive Extension" by Andy Clark', *Constructivist Foundations,* 5 (2008), pp. 97-99.

[12] For readings by Michael L. Anderson see: 'Embodied Cognition: A Field Guide', *Artificial Intelligence,* 149 (2007) pp. 91-130; 'How to Study the Mind: an Introduction to Embodied Cognition', in *Learning Environments Embodied and Perceptual Advancements*, ed. by F.

cognition and the extended mind - and their findings are reflected as part of this study.

One of the main contributors to considering concepts from a new perspective, or to reclaiming concepts and how we view them, is Rosch; thus I use her term 'participatory' for this study. Similarly, it is her definition of the term concept that I have used to support my central argument: that Wittgenstein's language-game shows concepts as participatory and as part of the environment, and engaging with mind and body, which is the embodied cognition thesis. Rosch's definition of concept and her term 'participatory' are discussed later in this Introduction.

While Rosch considers that concepts are the 'central building block of cognitivist theory,'[17] she also states that:

Santoianni and C. Sabatano (Newcastle: Cambridge Scholars Publishing: 2007); 'On the Grounds of (X) – Grounded Cognition', *Handbook of Cognitive Science: An Embodied Approach*, ed. by Paco Calvo and Toni Gomila (Oxford: Elsevier, 2008), pp. 423-435.

[13] For readings by Andy Clark see: *Being There: Putting Mind, Body, and World Together Again* (Cambridge: MA: MIT Press, 1997);'Embodied, Situated, and Distributed Cognition', in *A Companion to Cognitive Science,* ed. by William Bechtel and George Graham (Malden MA: Blackwell, 1998); 'Visual Awareness and Visuomotor Action', *Journal of Consciousness Studies,* 6 (1999), 1-18; 'Language, Embodiment, and the Cognitive Niche', *Trends in Cognitive Sciences,* 10 (2006), 370-374; R. A. Wilson and A. Clark, 'How to Situate Cognition. Letting Nature Take its Course', in *The Cambridge Handbook of Situated Cognition* (Cambridge: Cambridge University Press, 2009), pp. 55-77.

[14] For research on situated cognition and the embodied cognition thesis by Shaun Gallagher see: 'Philosophical Antecedents to Situated Cognition', *The Cambridge Handbook of Situated Cognition* (Cambridge: Cambridge University Press, 2009), pp. 1-21.

[15] William J. Clancey, 'Situated Cognition: How Representations are Created and Given Meaning', in *Lessons from Learning,* ed. by R. Lewis and P. Mendelsohn (Amsterdam: North-Holland, 1994), pp. 231-242.

[16] Arthurs M. Glenberg, 'Embodiment as a Unifying Perspective for Psychology', *WIREs Cognitive Science,* 1 (2011), 586-596; 'What Memory is For', *Behavioural & Brain Sciences,* 20 (1997), 1-55.

[17] Eleanor Rosch, 'Reclaiming Concepts', in *Reclaiming Cognition – The Primacy of Action, Intention and Emotion,* ed. by Rafael Nunez and Walter J. Freeman (Thorverton: Imprint

> [it is going to take something far more radical […] to reclaim concepts, and indeed cognitive science as a whole, from cognitivism. It requires a genuine rethinking of mind, world, concepts and their relationship.[18]

For Rosch, 'concept research is currently a hotbed of activity in both philosophy and psychology.'[19] Concepts are not only considered the cornerstone of philosophy and psychology and of central interest to the empiricist and rationalist debate, but are also of contemporary interest in cognitive psychology, particularly in terms of their origin and function, while Douglas Medin considers that 'concept representation remains as a cornerstone issue in all aspects of cognitive science.'[20]

> Rosch states that:
>
> concepts and categories do not represent the world in the mind; they are a *participating part* of the mind-world whole of which the sense of mind (of having a mind that is seeing or thinking) is one pole, and the objects of mind (such as visible objects, sounds, thoughts, emotions, and so on) are the other pole.[21]

She further contends that:

> concepts — red, chair, afraid, yummy, armadillo, and all the rest — inextricably bind, in many different *functioning ways*, that sense of being or having a mind to the sense of the objects of mind.[22]

Academic, 1999), pp. 61-77 (p. 61). [Also known as *Journal of Consciousness Studies*, 6 (1999), 11-12]

[18] Ibid., p. 69.

[19] Kathleen L. Slaney, Timothy P. Racine, 'On the Ambiguity of Concept Use in Psychology: Is the Concept "Concept" a Useful Concept?', *Journal of Theoretical and Philosophical Psychology*,31(2011),73-89. <http://web.ebscohost.com.jproxy.nuim.ie/ehost/detail?sid=b693f68.pdf> [accessed 21 July 2012] (p. 73).

[20] Douglas L. Medin, (1989) 'Concepts and Conceptual Structure', *American Psychologist*, 44 (1989), 1469-1481 (p. 1469).

[21] Rosch, 'Reclaiming Concepts', p. 72.

[22] Ibid.

Rosch, without exception, is a key figure in cognitive psychology. As we shall see, her contribution on concepts and categories commenced with her views on the prototype approach to concepts, thus her use of Wittgenstein's term 'family resemblance'. Her seminal paper *Reclaiming Concepts* illustrates that, in her view, by the late 1990s, the issue of concepts needed to be re-examined, hence the title of her paper. However, while I refer largely to that specific article, the richness of her work can be seen in many of her publications.[23]

Other significant contributors to developing research on concepts and their function are Gregory Murphy[24] and Douglas Medin.[25] While Murphy has

[23] Rosch is a significant figure in cognitive psychology and has contributed extensively to the area of concepts and categories. For further reading on her work see the following: 'Natural Categories', *Cognitive Psychology*, 4 (1973), 328-50; 'Cognitive Reference Points', *Cognitive Psychology*, 7 (1975), 532-47; E. Rosch and C.B. Mervis, 'Family Resemblances: Studies in the Internal Structure of Categories', *Cognitive Psychology*, 7 (1975), 573-605; E. Rosch and B.B. Lloyd, E. Rosch, C.B. Mervis, W.D. Gray, D.M. Johnson, and P. Boyes-Braem, 'Basic Objects in Natural Categories', *Cognitive Psychology*, 8 (1976), 382-439; 'Human Categorization', in *Studies in Cross-Cultural Psychology (Vol 1)*, ed. by N. Warren (London: Academic Press, 1977); 'Principles of Categorization', in *Cognition and Categorization*, ed. by E. Rosch and B.B. Lloyd (Hillside, NJ: Lawrence Erlbaum, 1978); 'Wittgenstein and Categorization Research in Cognitive Psychology', in *Meaning and Growth of Understanding: Wittgenstein's Significance for Developmental Psychology*, ed. by M. Chapman and R.A. Dixon (Berlin: Springer-Verlag, 1987); 'Categorization', in *The Encyclopedia of Human Behavior* (San Diego, CA: Academic Press, 1994); 'What are Concepts?', Review of Fodor (1998), *Contemporary Psychology*, 44 (1999), 416-7.

[24] Some readings from Gregory L. Murphy on the area of concepts and categories include: G. Murphy, and D. Medin, 'The Role of Theories in Conceptual Coherence', *Psychological Review*, 92 (1985), 289-316; E. Lin and G. Murphy, 'Thematic Relations in Adults' Concepts', *Journal of Experimental Psychology: General*, 130 (2001), 3-28; *The Big Book of Concepts* (Massachusetts: MIT Press, 2004); L. Bott, A. Hoffman and G. Murphy 'Blocking in Category Learning', *Journal of Experimental Psychology: General*, 136 (2007), 685-699; S. Kim and G. Murphy, 'Ideals and Category Typicality', *Journal of Experimental Psychology*: *Learning, Memory, and Cognition*, 37 (2011), 1092-1112; G. Murphy and B.H. Ross, 'Uncertainty in Category-Based Induction: When do People Integrate Across Categories?', *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 36 (2011), 263-276.

[25] Some readings from Douglas L. Medin on the area of concepts and categories include: D. Medin and M. Schaffer, 'Context Theory of Classification Learning', *Psychological Review*, 85 (1978), 207-238; D. Medin and E. Smith, 'Strategies and Classification Learning', *Journal of Experimental Psychology: Human Learning and Memory*, 7 (1981), 241-253; D. Medin, G. Dewey and T. Murphy, 'Relationships Between Item and Category Learning: Evidence that

written extensively on this subject he differs in his views from Rosch in terms of how he views concepts. For example, in his book, *The Big Book of Concepts*,[26] he gives an excellent explanation of each approach taken by cognitive psychology, but fails to recognise what Rosch argues for; that concepts are not isolated objects but *participating* as part of the context. Murphy also considers that word meanings are psychologically represented by mapping words onto conceptual structures: a word gets its significance by being connected to a concept or a coherent structure in our conceptual representation of the world.[27] Again, we see the emphasis on the 'representation' rather than on 'action' and 'participation'. Murphy also frequently uses the term '*ad hoc*' categories which is similar to how Lawrence Barsalou describes some categories. For both theorists, this is where they refer to a concept that does not belong or fit a specific category. Ad hoc categories, and their significance in how we use concepts, are examined in Chapter 4, while Barsalou's significant contribution to psychology[28] can be seen in Chapters 4 and 5.

Abstraction is not Automatic', *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 9 (1982), 607-625; J. Busemeyer, G. Dewey and D. Medin, 'Evaluation of Exemplar-Based Generalizations and the Abstraction of Categorical Information', *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 10 (1984), 638-648; D. Medin, M. Altom and T. Murphy, 'Given Versus Induced Category Representations: Use of Prototype and Exemplar Information in Classification', *Journal of Experimental Psychology*, 10 (1984), 333-352; G. Murphy and D. Medin, 'The Role of Theories in Conceptual Coherence', *Psychological Review*, 92 (1985), 289-316; Comment on 'Memory Storage and Retrieval Processes in Category Learning', *Journal of Experimental Psychology*, 115 (1986), 373-381; 'Concepts and Conceptual Structure', *American Psychologist*, 44 (1989), 1469-1481; D. Medin, in *Readings in Cognitive Psychology*, ed. by Robert J. Sternberg and Richard K. Wagner (New York: Harcourt Bruce and Company, 1999); B. Love, D. Medin and T. Gureckis, 'SUSTAIN: A Network Model of Category Learning', *Psychological Review*, 111 (2004), 309-332.

[26] Gregory L. Murphy, *The Big Book of Concepts* (London: MIT Press, 2004).

[27] Ibid., p. 389.

[28] Lawrence W. Barsalou is a prominent figure in cognitive psychology. He has researched

Another major contributor to concept research is Susan Carey and her seminal book *The Origin of Concepts* (2009).[29] She describes the term concept as 'units of thoughts, the constituents of beliefs and theories […]'.[30] She continues to state that:

> representations of word meanings are paradigm examples of concepts. I take concepts to be mental representations — indeed, just a subset of the entire stock of a person's mental representations.[31]

However, while Carey's book is of immense interest regarding concepts as a whole, it nonetheless focuses on their *origin* rather than their *use.* For this reason I have chosen not to use Carey as a reference for my study on concepts and the role that they play in Wittgenstein's language-game.

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extensively on multiple topics and these can be divided into the following areas: Grounding the Conceptual System in the Brain's Modal Systems; The Situated Nature of the Conceptual System; Social and Cultural Processes; Ad Hoc and Goal-Derived Categories; The Dynamic Nature of Concepts; and Category Learning. Each of these areas is then sub-divided into categories such as: emotion, contemplative science, reviews of empirical literature, empirical reports, and language and simulation. I have cited here only a few of his relevant articles to my study. However, a full listing of all of Barsalou's papers can be found at: <http://psychology.emory.edu/cognition/barsalou/onlinepapers.html>
His work on concepts and categories includes: 'Context-independent and Context-dependent Information in Concepts', *Memory & Cognition*, 10 (1982), 82-93; 'Ad Hoc Categories', *Memory and Cognition*, 11 (1983), 211-227 ; 'Continuity of the Conceptual System Across Species', *Trends in Cognitive Science*, 9 (2005), 309-311; L. Barsalou and K. Wiemer-Hasings, 'Situating Abstract Concepts', in *Grounding Cognition: The Role of Perception and Action in Memory, Language, and Thought*, ed. by D. Pecher and R. Zwaan (New York: Cambridge University Press, 2005), pp. 129-163; W. Yeh and L. Barsalou, 'The Situated Nature of Concepts', *American Journal of Psychology*, 119 (2006), 349-384; 'Grounded Cognition', *Annual Review of Psychology*, 59 (2008), 617-645; 'Situating Concepts', in *The Cambridge Handbook of Situated Cognition* (Cambridge University Press; (2009), pp. 247-248; 'Simulation, Situated Conceptualization, and Prediction', *Philosophical Translations of The Royal Society. B*, 364 (2009), pp. 1281-1289; 'Grounded Cognition: Past, Present, and Future', *Topics in Cognitive Science*, 2 (2011), pp. 716-724.

[29] Susan Carey, *The Origin of Concepts* (Oxford: Oxford University Press, 2009).

[30] Ibid., p. 5.

[31] Ibid.

While the focus of this dissertation is specifically on concepts, it does, nonetheless, overlap with the area of language. Therefore, it is necessary to acknowledge commentary from some eminent theorists in the field, if only to give a broader perspective on where the domain of concepts falls in relation to language itself.

According to the evolutionary psychologist and cognitive neuroscientist, Steven Pinker, 'to understand mental categories is to understand much of human reasoning.'[32] Pinker has written extensively on language, specifically on how language is part of our genetic make-up rather than a cultural development, but refers to concepts and their function as part of his study.[33] He argues that some conceptual categories do not refer specifically to things in the world, but are socially constructed – a Wittgensteinian theme – and, therefore, can be reconstructed. Similarly I suggest that some conceptual categories could be 'deconstructed'. Pinker states that:

> People can learn categories with clean definitions, crisp edges, and no family resemblance, such as "odd number." They can learn that a dolphin is not a fish, though it has a strong family resemblance to the fishes, and that a seahorse is a fish, though it looks more like a little horse. They can understand that Tina Turner is a grandmother, though she lacks all the usual traits, and that my childless great-aunt Bella was not a grandmother, though she had gray hair and made a mean chicken soup.[34]

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[32] Steven Pinker, *Words and Rules: The Ingredients of Language* (London: Weidenfeld & Nicolson, 1999), p. 270.

[33] Some of Pinker's works where he refers to concepts include: *The Language Instinct – The New Science of Language and Mind* (London: Penguin Books, 1994); *How the Mind Works* (London: Penguin, 1998); *Words and Rules: The Ingredients of Language* (London: Weidenfeld & Nicolson, 1999); and *The Stuff of Thought* (London: Penguin, Allen Lane, 2007).

[34] Steven Pinker, *Words and Rules: The Ingredients of Language*, p. 275.

Calling language an 'instinct' that humans are born with, Pinker argues for an evolutionary mental module for language. He claims that language must do two things: first, it must convey a message to an audience and secondly, it must serve to negotiate the relationship between language giver and receiver.[35] This social relationship or social 'coordination'[36] he refers to is similar to Wittgenstein's social and communal process of a language-game where meaning is use and contextual, the objective of which is to communicate, and to negotiate social interaction and where the meaning of a word is its use. Again, we can see the Wittgensteinian theme.

Pinker paints human nature as having distinct and universal properties, some of which are innate rather than been shaped by culture or the environment.[37] He argues that:

> Language is a modular system that evolved independently from other human cognitive abilities — that it is its own unique tool in the toolbox that is the human brain.[38]

(I consider this to be a similar analogy to Wittgenstein's: 'Language is an instrument. Its concepts are instruments'.[39]) According to Wargo, for Pinker, the instinct for language evolved as an adaptation for social coordination in our hunter-gatherer ancestors, and its deep structure still bears evidence of the

[35] Eric Wargo, 'Talk to the Hand – New Insights into the Evolution of Language and Gesture' *Association for Psychological Science*, 21 (2008), 16-22 (p. 17)
[36] Steven Pinker, in 'Talk to the Hand – New Insights into the Evolution of Language and Gesture' by Eric Wargo, *Association for Psychological Science*, 21 (2008), 16-22 (p. 17)
[37] Ibid.
[38] Ibid.
[39] Wittgenstein, *Philosophical Investigations*, #569.

fundamental human priorities of manipulating the social and physical environment.[40] He states that:

> We have seen that much of the richness of language comes from the tension between words and rules. In the same way, much of the richness of the public sphere of life comes from tensions between family resemblance categories built from experience and the classical categories defined by science, law or custom. Family resemblance categories resonate with common sense, but leave us groping when faced with something that is neither fish nor fowl.[41]

Other prominent theorists who have contributed to the area of embodied cognition, particularly in the area of embodied cognition's empirical domains which are discussed in Chapter 5, are George Lakoff and Mark Johnson.[42] They state in *Metaphors We Live By* that 'our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature.'[43] Lakoff and Johnson claim that:

> Concepts that govern our thought are not just matters of the intellect. They also govern our everyday functioning, down to the most mundane details. Our concepts structure what we perceive, how we get around in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining our everyday realities. If we are right in suggesting that our conceptual system is largely metaphorical, then the way we think, what we experience, and what we do every day is very much a matter of metaphor.[44]

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[40] Wargo, p. 17.
[41] Pinker, *Words and Rules: The Ingredients of Language*, pp. 286-287.
[42] For further reading on metaphors and language by G. Lakoff and M. Johnson see: *Metaphors We Live By* (Chicago: The University of Chicago Press, 1980); G. Lakoff, *Women, Fire, and Dangerous Things – What Categories Reveal about the Mind* (Chicago: The University of Chicago Press, 1987); and *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought* (New York: Basic Books, 1999).
[43] George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: The University of Chicago Press, 1980), p. 3.
[44] Ibid.

Again, we can see a Wittgensteinian theme emerging when Lakoff and Johnson describe concepts as 'governing everyday functioning' and 'how we get around the world' and 'relate to other people'. This resonates with Wittgenstein's idea that concepts enable us to make sense of our world and, therefore, our experiences.

According to Jerome Bruner:

> We are still drawing rich sustenance from our more distant, pre-positivist past: Chomsky acknowledges his debt to Descartes, Piaget is inconceivable without Kant, Vygotsky without Hegel and Marx, and the once towering bastion of 'learning theory' was constructed on foundations laid by John Locke.[45]

Bruner's quote clearly acknowledges not just the influence that philosophy has had on psychology but also resonates with the suggestion that there is a reciprocal relationship between the two domains that still warrants further exploration. There have been many major influences in the history of psychology,[46] and I propose that while Wittgenstein did not either intentionally

[45] Jerome Bruner, *Acts of Meaning* (Harvard: Harvard University Press, 1990), x.

[46] There have been numerous major contributors to the history of modern psychology. I present here what I consider to be some of the more significant and influential contributions made: Charles Darwin's examination and subsequent publication of *The Origin of Species* in 1859 which expounded the theory of evolution through natural selection; this was followed in 1860 by Gustav Fechner's *Elements of Psychophysics* where he explored the different methods of measuring the relationships between physical stimuli and sensations; then we saw Sir Francis Galton's (1822–1911) studies on individual differences and his application of Darwin's concept of selective adaptation to the evolution of the races; in 1879 Wilhelm Wundt opened the first formal psychological laboratory at the University of Leipzig; in 1890 William James' seminal book, *Principles of Psychology*, was published; in 1892 Edward Titchener developed the paradigm of structuralism which became a significant influence in American psychology (which is also discussed in Chapter 4); in 1900 Sigmund Freud's ideas on psychoanalysis were published in *The Interpretation of Dreams;* in 1906 Ivan Pavlov published his studies on classical conditioning; in 1908 there was the first formal introduction of social psychology by William McDougall (1871–1938); in 1913 John B. Watson introduced his ideas on behaviourism which had a lasting and significant impact on psychology (which is also

or specifically contribute to the science of psychology, he should, nonetheless, be considered as one of the major contributors, particularly in light of the way he has helped shape current cognitive approaches to concepts, that is, the embodied cognition thesis.

1.2 Definition of Terms: Concept, Category, Context, Environment, Mentalism and Cognitivism

Since this is a dissertation involving two distinct disciplines it is of importance that the definitions of terms are clear.

1.2.1 Concept and Category

In cognitive psychology, the term concept refers to:

> how things are related or categorised. It is a mental representation of a category. It enables us to group things together, so that instances of a category all have something in common. Thus concepts somehow specify category membership.[47]

Furthermore, 'categorizations which humans make of the concrete world are not arbitrary but highly determined.'[48] When the term category is used we

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discussed in Chapters 3 and 4); in 1938 B.F. Skinner (also discussed in Chapter 3) published *The Behaviour of Organisms* (which Noam Chomsky subsequently critiqued); in 1942 Carl Rogers (1902–1987) published *Counselling and Psychotherapy* which explored his person-centred approach to counselling and therapy; in 1954 the Swiss psychologist Jean Piaget (1896–1980) published *The Construction of Reality in the Child*, where the main focus was on a child's cognitive development; in 1957 Noam Chomsky's (b. 1928) *Syntactic Structures* was published which propounded a cognitive approach to language behaviour; and in 1981 Roger Sperry (who is also discussed in Chapter 4) won the Nobel prize for psychology for his research and contribution in the area of split-brain patients which demonstrated the interconnections of the brain: in Atkinson at al., *Hilgard's Introduction to Psychology*, 12th edn, (Fort Worth: Harcourt Brace College Publishers, 1996), pp. 669-670.

[47] Trevor A. Harley, *The Psychology of Language – From Data to Theory* (New York: Psychology Press, 2001), p. 276.

[48] Rosch, 'Basic Objects in Natural Categories', p. 382.

mean ‘a number of objects which are considered equivalent’[49] and the term taxonomy refers to the system by which ‘categories are related to another by means of class inclusion.’[50]

Categorising is a basic cognitive function, the process of which allows us to group together two or more items of the same category. This is considered a top-down process,[51] (as opposed to a bottom-up process[52]) which is driven by an individual’s prior knowledge and expectancies. Without an ability to categorise we would be unable to make sense of the world from either our present experiences or our past knowledge. Categorising enables cognitive economy and allows us to use our knowledge to make logical inferences, predictions and to understand, reason, explain, communicate and classify.

It is important to distinguish between the terms concept and category. Medin explains that ‘a *concept* is an idea that includes all that is characteristically associated with it. A *category* is a partitioning or class to which some assertion or set of assertions might apply.’[53] However, Medin continues to state that ‘it is tempting to think of categories as existing in the world and of concepts as corresponding to the mental representations of

[49] Ibid., p. 383.
[50] Ibid.
[51] Top-down processing is where cognitive processing is controlled by the ideas or thoughts about the nature of the material being processed. See *The Penguin Dictionary of Psychology*, ed. by Arthur S. Reber and Emily Reber, 3rd edn. (London: Penguin, 2001), p. 756.
[52] Bottom-up processing can also be referred to as data-driven processing. In cognitive theory this term is used to refer to a process assumed to be determined primarily by a physical stimulus. The notion is that a person deals with the information by beginning with the ‘raw’ stimulus and then ‘works their way up’ to the more abstract, cognitive operations. See Reber, p. 98.
[53] Medin, ‘Concepts and Conceptual Structure’, p. 1469.

them.'[54] This type of partitioning, or compartmentalising, can have problems: for example, a concept does not need to have a real-world counterpart. Furthermore, it is possible for us to impose or force, rather than discover, any form of structure in the world.[55]

By contrast, the term concept in the philosophical sense can be understood as a principle of classification, something that can guide us in determining whether an entity belongs in a given class or does not:

> The conceptualistic substantive views of concepts are that concepts are (1) *mental representations*, often called *ideas*, serving their classificatory function presumably by resembling the entities to be classified; or (2) brain states that serve the same function but presumably not by resemblance; or (3) general words (adjectives, common nouns, verbs) or uses of such words, an entity's belonging to a certain class being determined by the applicability to the entity of the appropriate word.[56]

The term concept can be defined as the 'internal, psychological, representation' of shared attributes.[57] Equally, it can defined as a 'mental representation that exists in the minds (or brains) of individuals whose actions and/or reasoning processes are being described' and 'generally taken to be reliably associated with the words in a language that are used to express them,'[58] while Margolis and Laurence, on the other hand, consider concepts to be abstract objects.[59]

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[54] Ibid.
[55] Ibid.
[56] *The Cambridge Dictionary of Philosophy*, 2nd edn., ed. by Robert Audi (Cambridge: Cambridge University Press, 1995), p. 170.
[57] Reber, p. 140.
[58] Slaney and Racine, p. 74 and p. 78.
[59] E. Margolis and S. Laurence, 'The Ontology of Concepts: Abstract Objects or Mental Representations', *Nous*, 41 (2007), 561-593.

Concepts have been described as 'mental contents'[60] or the 'constituents,' 'elements,' 'building blocks,' or 'organizers' of thoughts.[61] Concepts are also considered to be 'psychological structures' of one sort or another,[62] 'mentally possessed idea[s] or notion[s]'[63] and 'the very glue that holds our mental world together.'[64] However, while I am not rejecting that concepts can be described by any of these terms, for the purposes of this dissertation I am using Rosch's definition of a concept. She considers that 'concepts are not representational,'[65] that is, they do not represent an object that is isolated and static, rather,

> Concepts occur only in actual situations in which they function as participating parts of the situation rather than as either representations or as mechanisms for identifying objects.[66]

She explains that to understand a concept it must be participatory: 'Concepts only occur as part of a web of meaning provided both by other concepts and by interrelated life activities.'[67] Concepts are never 'abstractly informative' but always 'participatory'.[68]

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[60] S.C. Fisher, 'The Process of Generalizing Abstraction; and its Product, the General Concept', *Psychological Monographs,* XXI (2.9) (1926), pp. 1-209.
[61] D. Groome, *An Introduction to Cognitive Psychology: Processes and Disorders* (New York: Routledge, 1999), pp. 165-291.
[62] D.A. Weiskopf, 'The Plurality of Concepts', *Synthese,* 169 (2009), pp. 145-173.
[63] R.L. Goldstone and A. Kersten, 'Concepts and Categorization', in *Handbook of Psychology, Vol. 4: Experimental Psychology,* ed. by A.F. Healy and R.W. Proctor (Hoboken, NJ; Wiley, 2003), p. 600.
[64] G. Murphy, *The Big Book of Concepts* (Cambridge, MA:MIT Press, 2004), p. 1. See, also, Slaney and Racine, p. 82.
[65] Rosch, 'Reclaiming Concepts', p. 72.
[66] Ibid., p. 61.
[67] Ibid., p. 70.
[68] Ibid.

Concepts are a '*participating part* of the mind-world whole,'[69] and furthermore, 'are endowed with content and thus have a semantic role.'[70] As Wittgenstein states:

> 'I don't see anything violet here, but I can shew it you if you give me a paint box.' How can one *know* that one can shew it if ….,in other words, that one can recognize it if one sees it?
> How do I know from my *image*, what the colour really looks like?
> How do I know that I shall be able to do something? that is, that the state I am in now is that of being able to do that thing?[71]

In a language-game, to possess a concept is to know what the actual concept is, or to know what its form of expression means, that is, its use; this means being able to use it correctly within the appropriate 'context' or 'environment' in order that 'we may make sense of our world.'[72]

It is important to understand that for the purposes of this dissertation I am not using the term 'concept' as it is currently understood and cited by some of the theorists referred to in this chapter as a 'mental representation;' that is, that it is ultimately responsible for behaviour with regard to the outside world. There are assuredly things in the world which are chairs, but the *concept* of chair is 'in the head', not the outside world.[73] Interestingly, Paivio (1986) has suggested that the problem of mental representation may be the most difficult

[69] Ibid., p. 72.
[70] Slaney and Racine, p. 82.
[71] Wittgenstein, *Philosophical Investigations*, #388.
[72] Slaney and Racine, p. 82.
[73] Reber, p. 140.

problem to solve of all the sciences,[74] arguably because it is active and conscious.

1.2.2 Context and Environment

The terms 'context' and 'environment' are being used inter-changeably throughout this dissertation. The term 'context' is the Wittgensteinian term:

> Though—one would like to say—every word has a different character in different contexts, at the same time there is *one* character it always has: a single physiognomy.[75]

The term 'environment' is one that is used in the embodied cognition thesis:

> Cognition evolved in specific environments, and its solutions to survival challenges can be expected *to take advantage of the concrete structure or enduring features of those environments.*[76]

I use these terms inter-changeably to refer to the same thing, that is, the situation in which the concept is participatory, and where these [concept and environment] and the mind and body all interact together.

1.2.3 Mentalism

This term mentalism refers to:

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[74] Michael W. Eysenck and Mark T. Keane, *Cognitive Psychology – A Student's Handbook* (East Sussex: Psychology Press, 2000), p. 243.
[75] Wittgenstein, *Philosophical Investigations*, p. 155.
[76] Michael L. Anderson, (2007) 'How to Study the Mind: An Introduction to Embodied Cognition', p. 2.

> The doctrine that maintains that an adequate characterization of human behaviour is not possible without invoking mental phenomena as explanatory devices. Or, phrased another way, that any reductionistic exercise which seeks to explain cognitive processes (mind) by limiting itself to the physical and the physiological will not succeed in accounting for all phenomena observed.[77]

While I refer mainly to 'the mind' and 'the mental' as Wittgenstein does, the term mentalism[78] is used when we look at how mental states and processes were over-looked by behaviourism, rejected by Wittgenstein, and how the cognitive revolution replaced the term 'mentalism' with the terms 'cognition' and 'cognitive processing'.

> From a philosophical perspective, Rene Marres defines mentalism as:
>
> the mental cannot be reduced to anything else, in particular not to behaviour or brain processes. The brain physiologist Sperry uses the term in this way. He adopts mentalism while rejecting dualism, and distinguishes this mentalism from the kind of materialism that reduces the mental to a brain process.[79]

In philosophical terms, mentalism has also been defined as:

> Any theory that posits explicitly mental events and processes, where 'mental' means exhibiting intentionality, not necessarily being immaterial or non-physical. A mentalistic theory is couched in terms of belief, desire, thinking, feeling, hoping, etc. A scrupulously non-mentalistic theory would be couched entirely in extensional terms: it would refer only to behaviour or to neurophysiological states and events.[80]

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[77] Reber, p. 429.
[78] Cf: Christopher D. Green, 'Where Did the Word "Cognitive" Come From Anyway?', *Canadian Psychology*, 37 (1996)<http://www.yorku.ca/christo/papers/cog-orig.htm> [accessed 16 September 2012] (pp. 31-39).
[79] Rene Marres, *In Defense of Mentalism: A Critical Review of the Philosophy of Mind*, trans. by Marleen Rozemond and Philip Clark (Amsterdam: Rodopi, 1985), p. 10.
[80] Audi, p. 557.

1.2.4 Cognitivism

'Cognitivism is the ascendant movement in psychology these days. It reaches from cognitive psychology into social psychology, personality, psychotherapy, development, and beyond.'[81] The term 'cognitivism' grew from the term 'cognitive psychology' which, as Reber describes, is the study of:

> A general approach to psychology emphasising the internal, mental processes. To the cognitive psychologists behaviour is not specifiable simply in terms of its overt properties but requires explanations at the level of mental events, mental representations, beliefs, intentions etc. Although the cognitive approach is often contrasted sharply with the behaviourist approach it is not necessarily the case that cognitivists are antibehavouristic. Rather, behaviourism is viewed as seriously incomplete as a general theory, one which fails to provide any coherent characterisation of cognitive processes such as thinking, language and decision-making.[82]

However, Christopher D. Green argues that often the term cognitivism is used 'as though it were completely synonymous with "psychological" or "mental"'[83] and that contrary to what many think the development of cognitivism has not been, and nor was it ever intended to be, a return to mentalism.[84]

In this dissertation I use the term cognitivism where I refer to the cognitive revolution and how the introduction of these new terms, 'cognition' and 'cognitivism'[85], replaced terms such as 'the mind' and 'the mental' to describe certain phenomena. However, Rosch defines cognitivism as treating the mind as a machine. This requires that the mind should be seen as a

[81] Green, p. 31.
[82] Reber, p. 129
[83] Green, p. 31
[84] Ibid., p. 39.
[85] Ibid., pp. 31-39.

computer programme, and more specifically as the type of programme which functions as a series of computations:

> (that is, rule governed changes) on symbolic representations. The mind is considered a collection of mental representations precisely analogous to the computer's symbolic representations. The only question which we may ask of such a model or machine, the only appropriate test of it, is just the classical Turing test — that its output be indistinguishable from that of a human.[86]

Fodor (1998) calls this model The Representational Theory of Mind (RTM) and indicates its importance for cognitivism: 'No cognition without representation.'[87]

In philosophy the term cognitivism is not used, or at best it is seldom used. Terms like 'mentalism' and 'the mind' would be used more frequently, while the term 'cognitivism' is a psychological term and is used in cognitive psychology and cognitive science regularly. However, without doubt, the term cognitive 'is a cognate of Descartes' "cogito"'[88] and some, such as B.F. Skinner, who opposed the cognitive revolution (which is discussed in Chapter 4 of this study) argue that 'it is little more than an anachronistic resurgence of Cartesian dualism.'[89] Christopher Green's paper 'Where Did the Word "Cognitive" Come From Anyway?' gives an excellent historical background to the term 'cognitive' and 'cognitivism'.

[86] Rosch, 'Reclaiming Concepts', p. 62.
[87] Jerry A. Fodor, *Concepts: Where Cognitive Science Went Wrong* (Oxford: Clarendon Press, 1988), p. 26.
[88] Green, p. 32.
[89] Ibid.

1.3 METHODOLOGY

Due to the inter-disciplinary nature of this dissertation, it is necessary to make a distinction between the different approaches and methodologies used within the two disciplines.

Cognitive psychology is the study of how information is processed and how the cognitive system operates, including how stimulus is acquired, stored, retrieved and used. Several cognitive processes are operating as concepts are being formed and used, such as memory, mental representation and reasoning. In particular, memory is central to how concepts function, whether construed within a semantic network framework, connectionist setting or as a schema. Similarly, mental representation (which some theorists consider as the concept itself) along with reasoning and its associated functions, such as heuristics, abstraction, metaphor and analogy, must also be considered.

Psychological research is empirical in approach and is concerned with collecting data, conducting analysis of results, and using different methodologies to test subjects and theories. This research is limited in its psychological perspective to studies from theories, views and approaches to concepts in order to explain their function and use. As discussed in the *status quaestionis*, the work of many theorists have been examined, thus the research material used here is taken from text-based sources only. However, while this dissertation examines the psychological material without the author having conducted any empirical research, there remains, nonetheless, a number of

arguments and suppositions to be explicated, such as how Wittgenstein's language-game shows concepts as participatory and as part of a context.

By contrast, however, philosophical research is text-based and is primarily concerned with resolving a problematic, defending an argument or proposing a hypothesis. The purpose of philosophy is conceptual clarification, and an explanation of issues such as meaning, truth and reality. However, the focus of philosophy is not just 'meaning' but also one of 'understanding'. There is always what we would call a 'rational enquiry', otherwise known as a 'method', and where there is an emphasis placed on its subject-matter or its purpose.[90] 'It is an attempt to understand the most basic facts about the world we inhabit and so far as possible to explain these facts.'[91]

> It is often held that philosophy has as a distinctive subject-matter the most fundamental or general concepts and principles involved in thought, action and reality. It is also a common view that philosophical inquiry is a second-order inquiry which has for its subject-matter the concepts, theories and presuppositions present in various disciplines and in everyday life.[92]

1.4 Scope and Limitations

This dissertation commences with a discussion on the history of the philosophy of language with Frege and Russell, which is the late nineteenth-century and early twentieth-century, and concludes with a discussion on how

[90] *The Penguin Dictionary of Philosophy*, ed. by Thomas Mautner (London: Penguin, 1996), p. 423.
[91] J. Wild, *Introduction to Realistic Philosophy* (New York: Harper & Row Publishers, 1948), p. 3.
[92] Mautner, p. 423.

Wittgenstein's language-game shows how concepts are part of the environment — the embodied cognition thesis — which is a current paradigm in cognitive psychology. Clearly, the history that this dissertation covers is significant and, therefore, it is necessary to set out the scope and limitations of this study.

First, it is important to highlight that this dissertation focuses only on the *Investigations* as part of my study into Wittgenstein's remarks on concepts. While there is rich material in his other texts, such as *The Blue and Brown Books* and *Remarks on the Philosophy of Psychology Volumes 1 and 2*, these were, nonetheless, preliminary studies to the *Investigations*. Furthermore, while I acknowledge that there may be significant remarks and descriptions to be examined in these two other texts which are relevant to my study, the scope of this dissertation is limited. Therefore, while my analysis of Wittgenstein's remarks is restricted, it is nonetheless concentrated and in-depth.

It is not the intention of this dissertation to examine and develop a discussion of the contemporary theme of realism and anti-realism and the different positions for which both Wittgenstein and cognitive theorists argue. While occasional reference is made to these terms, they are used only in a descriptive form that scholars and critics use to describe both Wittgenstein's early and later works. It is not my intention to develop any philosophical examination into the quasi-realist position held by Wittgenstein in the *Tractatu*s and the anti-realist position he held in the *Investigations*; while his calculus view of language and his language-game are discussed and examined

in some detail, Wittgenstein's reasons for moving from one position to another are not explored.

Similarly, the origin of concepts and the developmental stages of concepts, or 'the human capacity for conceptual representation'[93], are not discussed. As cited previously, Susan Carey's *The Origins of Concepts* deals explicitly with this issue along with other major concerns such as: core cognition, representations of cause, language and core cognition, and the process of conceptual change.[94] The purpose of this study is only to show how concepts are represented as participatory by Wittgenstein's language-game, and how this representation has been a significant influence on contemporary cognitive psychology.

Wittgenstein's private language argument is not discussed in detail, that is, it is not examined in terms of its relevance (or non-relevance) to how concepts in a language-game are participatory, or in relation to 'mentalism' or 'cognitivism'. However, the private language argument is referred to and explained briefly in Chapter 3 against the background of behaviourism.

The *Investigations* is a series of remarks, often related to either proceeding or preceding passages, and should be considered as descriptions. However, they should never be interpreted as explanations or definitions. Without doubt, this makes the task of reading Wittgenstein, and an

[93] Carey, p. 1.
[94] Ibid., Contents Page.

examination into his remarks, sometimes difficult. Similarly, Bryan Magee claims that to understand Wittgenstein is to understand his matter and, therefore, it is no surprise to see how often he has been misunderstood and misinterpreted, by both scholars and critics. Magee states that readers have:

> difficulty sometimes in seeing what the connection is between a paragraph and the one before it; the sentences are clear, but the reader often cannot understand, at first, why they are there. The prose, though distinctive and compelling, has nothing like the blazing intensity of the *Tractatus*.[95]

However, Wittgenstein was also aware of how his work was often misinterpreted by his colleagues and students at the time. In the preface to the *Investigations* he writes:

> Up to a short time ago I had really given up the idea of publishing my work in my lifetime. It used, indeed, to be revived from time to time: mainly because I was obliged to learn that my results (which I had communicated in lectures, typescripts and discussion), variously misunderstood, more or less mangled or watered down, were in circulation.[96]

I consider that this dissertation adequately and clearly illustrates Wittgenstein's contribution to contemporary cognitive psychology and, furthermore, shows that 'Wittgenstein's critiques identify *challenges* for, not obstacles to, psychological investigation.'[97] The three arguments I put forward in this dissertation are first, that Wittgenstein's language-game can also be considered a theory of language that explains how language is used and

[95] Bryan Magee, *Confessions of a Philosopher – A Journey Through Western Philosophy* (London: Phoenix,, 1998), p. 149.
[96] Wittgenstein, *Philosophical Investigations*, Preface.
[97] Noah Susswein and Timothy P. Racine, 'Wittgenstein and Not-Just-in-the-Head Cognition', *New Ideas in Psychology*, 27 (2009), 184-196 (p. 185).

understood, not developmentally, but through culture and context-dependent environments; secondly, that the language-game is the context, or the environment, where concepts can be seen as participatory rather than being considered as objective and defined in isolation. Furthermore, I will show that the language-game is the context where the mind, body and the concept all interact together. This *is* the embodied cognition thesis. Thirdly, this dissertation will show that Wittgenstein should be considered a key figure in cognitive psychology alongside other immensely influential theorists such as B.F. Skinner and Sigmund Freud.

CHAPTER II

AN INTRODUCTION TO THE PHILOSOPHY OF LANGUAGE AND LUDWIG WITTGENSTEIN

> 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.[1]

Some of the great exponents of philosophy of language have included Gottlob Frege (1848-1925), Bertrand Russell (1872-1970), Ludwig Wittgenstein, Willard van Orman Quine (1908-2000) and Hilary Putnam (b. 1926). Philosophers, scholars, critics and supporters of the philosophy of language have seen the pendulum swing from a logical approach to language, as posited by some logical positivists, such as Frege and Russell, to a more natural approach to language, as exemplified by the later Wittgenstein.

This chapter is an introduction to the history of the philosophy of language and its main contributor, prior to Wittgenstein, Frege. Frege's work had a significant impact on Wittgenstein's ideas, particularly in his earlier work the *Tractatus.* A discussion on the nature of language is also necessary in order to understand what role language plays, how language can situate concepts and its relation to other functions, such as behaviour, for example.

[1] Wittgenstein, *Philosophical Investigations*, #43.

Language is defined as a 'system of symbols and rules that enable us to communicate.'[2] Harley defines symbols as things that represent other things, e.g. something that is either spoken or written is classified as a symbol. The rules that he refers to specify how words should be in a particular order so that a sentence can be formed correctly. However, Harley also contends that there are problems with trying to specifically define what language is; it raises problems such as determining whether the communication systems that monkeys use should be considered a language? Similarly, should the signing of deaf people be considered a language?[3] For Wittgenstein, however, a definition of language is irrelevant. Rather than definitions and explanations, he is interested in describing the function of language, its meaning and use, exhibited through behaviour and interaction with the environment, which is facilitated by a language-game and, therefore, a context:

> Thought, language, now appear to us as the unique correlate, picture, of the world. These concepts: proposition, language, thought, world, stand in line one behind the other, each equivalent to each. (But what are these words to be used for now? The language-game in which they are to be applied is missing.)[4]

1.1 The Nature of Language

> The study of language has concentrated on three main fields: the origin of language, the relation between language and reality, and the structure of language. The first is bound up with questions of religion or cosmogony; the second is epistemological, while the third may be

[2] Harley, p. 5.
[3] Ibid., pp. 4-5.
[4] Wittgenstein, *Philosophical Investigations*, #96.

> called the field of pure linguistics or grammar. The fields are, however, interrelated.[5]

The later Wittgenstein is primarily concerned with the second one: the relation between language and its usage, its representational qualities and the context in which it occurs. However, it should be noted that the earlier Wittgenstein was more concerned about the structure of language which is examined in the *Tractatus.*

According to George A. Miller, 'the interest in the nature of speech and language is a very general characteristic of twentieth century thought.'[6] There is no doubt that language is tightly woven into an individual's experience and it is always referential. Language is also central to communication and, therefore, facilitates human understanding. It is a 'social activity and as such is a form of joint action.'[7] Language also represents reality, as Wittgenstein argues for, and hence its representational quality would suggest that language is infinite and 'indefinitely extendable'.[8] Language's main purpose is for communicating with another.[9] Language also has infinite expressive power which enables it to be used creatively, such as telling an anecdote, and appropriately, such as giving directions. However, as Searle states:

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[5] *Dictionary of the History of Ideas – Volume II*, ed. by P.P. Weiner (New York: Charles Scribner's Sons, 1973), p. 661.
[6] George A. Miller, *Communication, Language and Meaning: Psychological Perspectives* (New York: Basic Books Inc., 1973), p. 5.
[7] H. H. Clark, *Using Language* (Cambridge, Cambridge University Press, 1996); in Harley, p. 10.
[8] Searle, 'Wittgenstein', p. 327.
[9] Harley, p. 10.

> It is a characteristic feature of twentieth-century intellectual life that we no longer feel that we can take language for granted. Language has become immensely problematic for us.[10]

Language is also pervasive, 'permeates all of thinking, and thus, all of human experience.'[11] We learn to speak before being able to consciously reflect on it: language is a developmental process, and as such develops within an individual without us being aware of the actual process itself.[12]

> After all, one can only say something if one has learned to talk. Therefore in order to *want* to say something one must also have mastered a language; and yet it is clear that one can want to speak without speaking.[13]

Vocabulary has grown exponentially and this growth has enabled exploration and development in many new paradigms in the fields of philosophy, psychology, linguistics and cognitive science. Its richness has ensured that fewer errors, ambiguities and vagueness are present in natural language, generally, and, therefore, areas such as expression, meaning and understanding can also extend further with fewer uncertainties, inconsistencies and erroneous implications.[14] However, what cannot be overlooked is that many terms in natural language can be considered vague, e.g. 'cold'; or ambiguous, e.g. 'bank'; and unclear because of the metaphysical use, e.g., *I can see where you're coming from*.[15] Philosophy of language is essentially a quest for meaning and understanding. This search for meaning and

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[10] Searle, 'Wittgenstein', p. 334.
[11] Ibid.
[12] Weiner, pp. 660-661.
[13] Wittgenstein, *Philosophical Investigations*, #338.
[14] Miller, *Communication, Language and Meaning: Psychological Perspectives*, p. 5.
[15] Pascal O'Gorman, 'Unit 1: Introduction: The Linguistic Turn to Twentieth Century Philosophy', *Philosophy 4 - Language and Mind* (OSCAIL-The National Distance Education Centre, Dublin City University, 2002), p. 1:6.

understanding can occur on two levels: we can focus on specific terms and attempt to prove whether or not they are meaningful; or we can focus on sentences and attempt to show their meaning.[16]

Human language and communication are reliant upon the functions of specific cognitive components such as memory, information processing, perception, and of course language and speech production and linguistics themselves. However, language and speech production or linguistic production, is a higher-order activity and, therefore, can be complex in terms of cognitive processing.[17] On a more superficial level, language can be seen as an activity that is acquired naturally yet methodically and systematically and through various methods, as exemplified, in for example, the specific developmental linguistic stages that commence in early childhood.[18]

Speaking a language suggests that we know how it is used and understand its meaning; language sounds are related to language and its essential meaning, while the sequencing of rules refer to the grammar of a sentence. In this sense, we are positing the idea that an individual knows the grammar of a sentence from a combination of its sounds and meaning and, therefore, uses the sentence appropriately and within context, which is key for Wittgenstein. What we do not mean here is that the terms and concepts could be fragmented and isolated in order to explain the grammar of specific terms.

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[16] Ibid., p. 1:7.
[17] See: Trevor A. Harley, *The Psychology of Language – From Data to Theory* (New York: Psychology Press, 2001).
[18] See: Jean J. Piaget, (1923). *The Language and Thought of the Child* [1923], trans. by M. Gabain, (Cleveland: Meridan, 1955).

Knowledge, too, is integral to understanding language and how it is used. It is acquired not just by repetition or ostensive teaching, as Wittgenstein remarks,[19] but by acquiring a set of rules and regularities, as Pinker remarks:

> In one's cognitive make-up there must be a code or protocol or a set of rules that specifies how words may be arranged into meaningful combinations.[20]

The intention of the speaker also plays a key part in language use and meaning. Intentions are also of central interest to Wittgenstein:

> In so far as I do intend the construction of a sentence in advance, that is made possible by the fact that I can speak the language in question.[21]

If a speaker's intentions are vague or unclear in any form, ambiguity and misinterpretation can arise. For example, we can ask, demand, question, advise, surmise or accuse – to name but a few – but if the intention of the speaker is not clear or definite, then misunderstanding of meaning is likely to arise. This is a prime example of where the role of context is essential to the meaning and, therefore, understanding, of a word or a concept. Wittgenstein's remarks on the philosophy of psychology are key to understanding how social construction and context enable the understanding of concepts:

> Are you sure that there is a single if-feeling, and not perhaps several? Have you tried saying the word in a great variety of contexts? For

[19] Wittgenstein, *Philosophical Investigations*, #6.
[20] Pinker, *Words and Rules: The Ingredients of Language*, p. 4.
[21] Wittgenstein, *Philosophical Investigations*, #337.

example, when it bears the principal stress of the sentence, and when the word next to it does.[22]

1.2 GOTTLOB FREGE

In order to fully grasp Wittgenstein's early work, the *Tractatus* and, thus, his later work, the *Investigations*, an introduction to Frege is necessary and an overview of his principle ideas.

Gottlob Frege, the father of the philosophy of language, is regarded as one of the great exponents of logic. Indeed Pascal O'Gorman considers him as one of the most outstanding logicians ever and, alongside Aristotle, should be considered as one of the towering figures in the history of logic.[23] The analysis of language, which Frege undertakes, involves an analysis of the *working* of language. 'His seminal work consists of the sense and reference distinction',[24] or as Frege calls it *Sinn* (sense) and *Bedeutung* (meaning),[25] where he considers how some propositions express an identity but give no information, while others do not yet are still considered identities (e.g. the morning star and the evening star). Thus, Frege endeavours to distinguish between the sense and the reference of these terms.[26]

[22] Ibid., p. 158.
[23] Pascal O'Gorman, 'Unit 2: The Fregian Legacy', *Philosophy 4 - Language and Mind* (OSCAIL-The National Distance Education Centre, Dublin City University, 2002), p. 2:2.
[24] Ibid.
[25] Hans-Johann Glock, 'Frege', in *A Companion to the Philosophers*, ed. by Robert L. Arrington (Oxford: Blackwell, 2001), p. 256.
[26] Ibid., pp. 256-257.

Frege, and his English counterpart Bertrand Russell, accomplished what we might consider as a logical revolution in terms of developing truth-functional logic.[27] The Frege-Russell logic is primarily focused on sentences and the propositions that lie therein, although it should be noted that some sentences are straight-forward propositions. This logical approach also analyses the domain of semantics, syntax and pragmatics within the course of language itself.[28] Semantics is concerned with the literal meaning of a sentence, e.g. *The tortoise ran across the field as quickly as it could*. In its literal sense, this sentence is false, (a tortoise cannot run) although it could nonetheless be interpreted in a metaphorical sense.[29] Syntax is concerned with the rules of grammar for a language, and how a sentence is constituted according to the terms used. This is essential in order for us to understand a sentence; without the correct syntax, sentences or propositions are incoherent and unintelligible.[30] Pragmatics, it appears, is a grey area in relation to the Frege Russell revolution.[31] This domain deals with the practical uses of language, such as joking, colloquialism, and arguably, perhaps, even dialect. Frege's basic idea was to analyse propositions into function and argument, as opposed to subject and predicate, like Aristotelian logic.[32]

Frege was attempting to propose a general account of the workings of language that did not proceed by taking any fundamental concept for granted.

[27] Ibid., p. 259.
[28] O'Gorman, 'The Linguistic Turn to Twentieth Century Philosophy', p. 1:2.
[29] Ibid., p. 1:3.
[30] Ibid., p. 1:2.
[31] Gottlob Frege, 'On Sense and Meaning', in *Philosophy of Language: The Big Questions*, ed. by Andrea Nye (Oxford: Blackwell, 1998), 72-77 (p. 74).
[32] Ibid.

According to Frege, an account of the working of language is a theory of meaning.[33] Three fundamental principles govern Frege's enquiry: the delineation or separation of the psychological from the logical, which is the subjective from the objective; to seek the meaning of a word in the context of a proposition only; and to distinguish between a concept and an object.[34]

Frege first draws the sense and reference distinction in connection with definite descriptions and names; he considers a name an abbreviation for a definite description.[35] Accordingly, we can divide all propositions into simple categories - also known as atomic propositions, e.g. Lucy is a funny girl - and complex categories. For Frege, all proper names and descriptions in propositions (atomic) refer to objects. He states that in atomic propositions, the logical role of a name is to refer to an object in virtue of its sense. He contends that the sense and reference distinction of a name-definite description is indispensable because we use the sense to determine the referent, i.e. the sense determines the object but the object or referent does not determine a unique sense, therefore referents do not have only one sense associated with them.[36] Frege claims that the sense is not subjective: it is not a private psychological state of mind, similar to Wittgenstein's rejection of a private language and confers the term *idea* for such psychological states. Frege concludes that without reference we could have a sense but not one that could lead to further development or scientific knowledge.

[33] Glock, *A Companion to the Philosophers*, p. 259.
[34] Ibid., p. 254.
[35] Frege, 'On Sense and Meaning', p. 74.
[36] Glock, *A Companion to the Philosophers*, p. 256.

Frege further argues that we must determine the difference, or separation, between the sense and the idea. He exemplifies this by explaining that:

> just as a person connects 'this' idea, and another person 'that' idea with the same word, similarly a person can associate 'this' sense and another 'that' sense; but nonetheless there still remains a difference in the type of mode of connection.[37]

Essentially, 'they are not prevented from grasping the same sense, but they cannot have the same idea: *Si duo idem faciunt, non est idem.*'[38] Even if two people picture the same thing, each still has their own idea. (In psychology this is referred to as mental representation.) Frege also suggests that every grammatically, well-formed, comprehensive expression presenting as a proper name must always have what he refers to as a sense. However, 'this is not to say that to the sense there also corresponds a thing meant.'[39]

Frege extends his sense and reference distinction to sentences, although unlike Russell he never actually defines the type of sentence he is referring to. This could be considered a Wittgensteinian trait: Wittgenstein does not give definitions or explanations but only descriptions and remarks; however, it is questionable whether Frege intentionally adopted a Wittgensteinian style. Russell, however, divided sentences into five types: interrogative, optative,

[37] Frege, 'On Sense and Meaning', p. 74
[38] Ibid.
[39] Ibid., p. 73.

exclamatory, imperative and indicative.[40] He emphasises his distinction between what is said when we utter a sentence as opposed to what we have in mind in uttering the sentence, or what we intended to say. He further contends that the sense of a sentence is constituted by the sense of each of its logical parts, i.e. name and predicate.[41] Frege extends his theory of logical parts by constituting what is regarded as his central thesis, namely the sense of a sentence is given by its truth-conditions.[42] If we cannot grasp truth conditions, then we will have difficulty in grasping the sense of the sentence, e.g. 'Lucy is not wise'. In logical terms, this is a 'negative' sentence. It is true only if the sentence 'Lucy is wise' is false, and it is false only if the sentence 'Lucy is wise' is true.[43] Furthermore, for Frege, reference is not an ingredient of meaning, thus sense can be explained as part of the meaning of a word (or concept or expression) which needs to be grasped, in order for us to decide the truth-values of the sentences containing it 'and this means: that part of its meaning which determines its reference.'[44]

Frege explores first level predicates — that which remains of an elementary sentence when the name is taken away.[45] He contends that predicates are logically simple: we cannot give a definition of what is logically simple and, furthermore, it cannot be broken down any further. Frege insists

[40] Bertrand Russell, *An Inquiry into Meaning and Truth* (London: Unwin, 1980), p. 30.
[41] Pascal O'Gorman, 'Unit 3: The Logical Positivist Search for Meaning', *Philosophy 4 - Language and Mind* (OSCAIL-The National Distance Education Centre, Dublin City University, 2002), p. 3:6.
[42] O'Gorman, 'The Fregian Legacy', p. 2:7.
[43] Ibid.
[44] Michael Dummett, *Frege – Philosophy of Language* (Massachusetts: Harvard University Press, 1973), p. 91.
[45] O'Gorman, 'The Fregian Legacy', p. 2:9.

that first level predicates are incomplete, and arrives at this conclusion from a logical perspective. Frege continues to introduce the notion of a 'concept', and draws a basic contrast between a concept and an object. What he is explicating is that names refer to objects but objects fall under concepts.[46] Arguably, the advantage of Frege's terminology is that it draws our attention to the different logical roles of names and first-level predicates in elementary sentences. Frege extends this theory further again by introducing second-level predicates. He argues that a first-level concept can fall only within a second-level concept while an object can fall only under a first-level concept.[47]

The Fregean legacy states that the term 'meaning' should be abandoned and replaced with two distinct terms, namely: sense and reference. From here we can determine that many terms with different senses have different referents, while some terms with different senses have the same referent.[48] The later Wittgenstein legacy is a contribution to the understanding of the sense of a term and when we combine these two legacies, we arrive at a paradox. This is commonly referred to as the paradox of meaning variance: some terms, with totally different senses, do not refer to the same thing, e.g. *I genuflected before the cross* or *I will cross the road at the traffic lights.* Here we can see the Wittgensteinian theme, where understanding a concept is context-dependent. This is key to understanding Wittgenstein's later philosophy.

[46] Ibid., p. 2:10.
[47] Ibid.
[48] Ibid., p. 2:4.

In *Frege: Philosophy of Language*, Michael Dummett highlights the point that Frege distinguishes three things: (1) sense, (2) tone and (3) force – 'variations of which, in sentences, affect the meanings of those sentences.'[49] Dummett is arguing that reference is not an ingredient of meaning, rather it is a consequence of meaning in that it is determined by sense. Dummett contends that a theory of meaning is a theory of understanding: 'what a person knows when he knows what a word or expression means, that is, when he understands it.'[50]

Frege never actually defines the term 'proper name' and yet it is a philosophy of language that we are assessing, and ultimately a theory of meaning. Or is it? In Frege's defence, Michael Dummett argues that Frege never said he was developing a theory of meaning. He referred to and explained that he was developing a logic, thus Frege never feels obliged to offer a definition of what it is to be a 'proper name'. Frege is merely setting up 'a logical notation and logical laws and this is implicit in his writing.'[51] However, it could be argued here that the laws of logic cannot be independent of meaning. According to Weiner,[52] Frege's failure to offer a definition of a 'proper name' can either be interpreted as an error or as an indication that he was not concerned with the workings of language. However, if we insist that

[49] Dummett, *Frege – Philosophy of Language*, p. 81.
[50] Michael Dummett, in *Fifty Major Philosophers – A Reference Guide* by Diane Collinson (London: Routledge, 1987), p. 127.
[51] Dummett, *Frege – Philosophy of Language*, p. 81.
[52] *Early Analytic Philosophy – Frege, Russell, Wittgenstein*, ed. by William W. Tait (Chicago: Open Court, 1997), p. 252.

Frege was developing a theory of meaning then Weiner attributes many more errors to his thesis.[53]

The contemporary American philosopher, Hilary Putnam argues that the Fregean thesis does not work for our usage of natural kind terms. In this situation, Putnam argues that the principle of doubt should be instigated. Similarly, he argues for the principle of reasonable ignorance: using a natural kind term correctly even though what we may reasonably call 'experts' have developed and established the correct criteria for identifying or naming an entity, e.g. water.[54] In both examples presented here, the principle of doubt and the principle of reasonable ignorance, Frege would disagree. In the latter example he would argue that the sense determining the referent does not apply in this case. Similarly, Frege makes no allowances for the principle of doubt.

Putnam further explores the use of natural kind terms and introduces his reasons why he disagrees with logical positivism and their analytic propositions.[55] In several essays, including *Is Semantics Possible* (1970) and *The Meaning of 'Meaning'* (1975), Putnam argues that for certain classes of expressions, in particular, natural kind terms, the reference of an expression is not a function of ideas or descriptions associated with it in the minds of the speakers. 'Meanings, Putnam concludes further, are not "in the head".'[56] The traditional sense and characteristics of a term or concept such as a melon, e.g.

[53] Ibid.
[54] Douglas G. Winblad, 'Putnam', *A Companion to the Philosophers*, ed. by Robert L. Arrington (Oxford: Blackwell, 2001), p. 453.
[55] Ibid.
[56] Ibid., p. 454.

small, oval and yellow, may be matched by other things that are not melons and, therefore, may possibly fail to pick out actual melons, since for whatever reason some melons may not possess these generic or defining features. (Defining features and prototypical features are discussed in Chapter 4.) Instead, Putnam claims that we should recognise that our linguistic practices, or as Wittgenstein describes 'the practice of language', include our intentions to refer to things in the world that share common features, whether or not some speakers are able to state it specifically.

However, it is questionable whether we can ever actually 'name' anything. What *exactly* is a name? Perhaps Frege's theory may not be certain, 'but there is nothing more certain by which they can be shown to be false.'[57] The sense and reference distinction has had an enormous impact on twentieth-century analytical philosophy, and has stimulated further exploration into an area that would have been neglected until the arrival of Ludwig Wittgenstein. Wittgenstein's 'meaning is use' has without doubt, developed language in terms of effect and different uses:

> to formulate theories […] make promises, promote actions, make requests, tell fictitious stories, tell jokes, utter obscenities, take oaths […] and so much more.[58]

[57] Russell, *An Inquiry into Meaning and Truth*, p. 317.
[58] Alfred Jules Ayer, *The Central Questions of Philosophy*, 2nd edn., (London: Penguin, 1991), pp. 30-31.

1.3 LUDWIG WITTGENSTEIN

While Frege is regarded as the father of philosophy of language, Wittgenstein is regarded as one of the most influential philosophers and towering figures in history. The difficulty, however, has never been in deciding whether Wittgenstein was a great analytic philosopher, or not, but how we should interpret, understand and read his work. This controversy has surrounded Wittgenstein not just in relation to his first text, the *Tractatus*, but also the *Investigations.* Extraordinarily, both texts were equally influential and yet in some ways were diametrically opposed, an outstanding achievement that no other philosopher had accomplished, with the possible exception of the late influential German philosopher Martin Heidegger (1889–1976).

In both the early and late works, Wittgenstein asks questions about language, and about language and its relation to the world. In his earlier work, the *Tractatus,* he examines how language can logically mirror the way things are in the world – a picture theory of meaning. It also demonstrates simply how logic and language can say something about the world, and the nature of the world. In his later work, the *Investigations,* he explores how language is a social and communal process where rules are developed for the use of words and concepts, and where a language-game 'refers to a social action-based context in which human beings relate to one another.'[59] The *Investigations* also shows that there are no explanations or definitions, only descriptions and remarks, which is a synthesis of not only a new view of language but also a

[59] Sean Sheehan, *Wittgenstein – A Beginner's Guide* (London: Hodder & Stoughton, 2001), p. 40.

new perspective on logic. It is also essential to understand that both of Wittgenstein's philosophies are concerned with language and its limits.

> Imagine someone pointing to his cheek with an expression of pain and saying "abracadabra!"—We ask "What do you mean?" And he answers "I meant toothache".—You at once think to yourself: How can one 'mean toothache' by that word? Or what did it *mean* to *mean* pain by that word? And yet, in a different context, you would have asserted that the mental activity of *meaning* such-and-such was just what was most important in using language.
>
> But—can't I say "By 'abracadabra' I mean toothache"? Of course I can; but this is a definition; not a description of what goes on in me when I utter the word.[60]

As Shand states, Wittgenstein is convinced that:

> The cardinal problem of philosophy has been the attempt to *say* what can only be *shown*; that is, the attempt to explain by saying things which can only be shown; and that can only produce nonsense.[61]

While Wittgenstein's logical approach to language is concerned with propositions and meaning, as outlined in the *Tractatus*, his natural language approach is concerned with meaning as use, and the usage of terms in ordinary contexts, as outlined in the *Investigations*.

According to Russell there are several problems with regard to language[62] but the one that Wittgenstein is most concerned about is the logical element: 'what relation must one fact (such as a sentence) have to another in

[60] Wittgenstein, *Philosophical Investigations*, #665.
[61] John Shand, *Philosophy and Philosophers – An Introduction to Western Philosophy* (London: Penguin Books, 1993), p. 227.
[62] Bertrand Russell, in Ludwig Wittgenstein, *Tractatus Logico-Philosophicus* [1921], trans. By D. F. Pears and B. F. McGuinness (London: Routledge, 2001), p. x.

order to be *capable* of being a symbol for that other?'[63] The following extracts from the *Tractatus* illustrate what Wittgenstein is endeavouring to show:

2.141	A picture is a fact.[64]
2.225	There are no pictures that are true a priori.[65]
3.02	A thought contains the possibility of the situation of which it is the thought. What is thinkable is possible too.[66]
4	A thought is a proposition with a sense.[67]
4.022	A proposition *shows* its sense. A Proposition *shows* how things stand if it is true. And it *says* that they do so stand.[68]

Wittgenstein argues that Augustinian philosophical questions, such as 'What is Time?' as meaningless. Rather than concentrating on such questions, Wittgenstein suggests that we should return the subject of the question, in the instance 'time', back to its original context.

Wittgenstein, in the *Tractatus,* believed that language represented reality, and that sentences are like the picture of the possible fact:

> When I think in language, there aren't 'meanings' going through my mind in addition to the verbal expressions: the language is itself the vehicle of thought.[69]

Wittgenstein considered words, for example, like 'not', 'and' and 'or' not part of the 'picture relationship', although in the *Tractatus*, as Searle

[63] Ibid.
[64] Wittgenstein, *Tractatus,* p. 10.
[65] Ibid., p. 12.
[66] Ibid.
[67] Ibid., p. 22.
[68] Ibid., p. 25.
[69] Wittgenstein, *Philosophical Investigations*, #329.

remarks, he considered these words as tools or operators.[70] However, in his later work, Wittgenstein abandoned the picture theory of meaning in favour of 'us to think of words as tools, think of sentences as instruments.'[71] In the *Investigations* he claims that the structure of our language determines the way we think of the real world and, therefore, our experiences. Wittgenstein insists that language is infinite and extendable and that there is no one defining element that binds all uses of language together. This, then, is why Searle concludes that, 'There isn't any single feature that runs through all of language that constitutes the essence of language.'[72]

Arguably, tautologies and contradictions, true or false propositions according to the early Wittgenstein, are senseless *(sinnlos*) but not nonsense *(Unsinn).* Tautologies, such as a 'logical proposition'[73] or 'logical truths'[74], establish a logical structure of the world and of language and, therefore, our experiences, which is key for Wittgenstein, and show the boundaries within which all propositions, whether true or false, which can say anything about the world must fall. This is how we make sense of our world and of our experiences. However, on the contrary, genuine propositions can state facts [about the world], and can have sense only by doing so or else are relegated to the grouping of tautologies or contradictions. However, arguably, they could also be relegated to the group of propositions or 'degenerate cases of

[70] John Searle, 'Wittgenstein', *The Great Philosophers – An Introduction to Western Philosophy* by Bryan Magee (Oxford: Oxford University Press, 1997), p. 324.
[71] Ibid., p. 326.
[72] Ibid., p. 327.
[73] Glock, *A Wittgenstein Dictionary*, p. 130.
[74] Ibid., p. 131.

propositions'[75] that make no sense; this way tautologies remain a special group. However, as we shall see:

> Wittgenstein later came to think that logic does not rest on ineffable foundations […]. He also abandoned the idea that logic is confined to tautologies or truth-functional relations.[76]

For Wittgenstein, language and its usage gets its entire meaning from the world, ultimately from names, terms, concepts and objects, and so, language is meaningful only when it states facts about the world: '[…] there has to be something in common between the sentence and the state of affairs.'[77]

As stated earlier, Wittgenstein's later work can be considered a critique of his earlier work. His new approach to language can be seen clearly not only in the *Investigations* but also in many of his other lectures and notes which were published posthumously. Wittgenstein genuinely believed that in the *Tractatus* he had solved the fundamental problems of philosophy. However, much later he felt that his work was fundamentally in error, and so he developed a wholly new approach to language in the *Investigations,* hence the *Investigations* is often considered a critique, and for some a criticism, of his earlier work. However, as Malcolm states, it will likely remain a matter of future debate as to what extent there is continuity between the early and the late Wittgenstein:

[75] Ibid., p. 164.
[76] Ibid., p. 202.
[77] Searle, 'Wittgenstein', p. 323.

> The writings from 1929 to 1932 testify to a continuous development and struggle – out of the former work and in the direction of the later.[78]

However, I would agree with Glock when he argues that there is clear continuity between Wittgenstein's early and later writings, particularly in the area of semantics and ontology: Wittgenstein has developed a 'new conception of language' but within a 'framework which completely changed their significance.'[79] Wittgenstein had now achieved something quite remarkable: he had produced two incompatible philosophies at different stages of his life, and as I stated earlier, both philosophies in some ways were diametrically opposed. However, Magee argues differently; he claims that Wittgenstein's earlier and later works share certain basic common features: both texts are concerned about the role that language plays in human thinking and human life, and both the *Investigations* and the *Tractatus* are centrally concerned with the demarcation between valid and invalid uses of language.[80]

In the *Investigations,* Wittgenstein is primarily concerned with how the role of language is involved in human behaviour. Unlike his earlier work in the *Tractatus,* where he is concerned with the picture theory of meaning and understanding language as a picture that structures reality, the *Investigations* explicates language as a socially constructed communal process, and something that is learned, rule-governed and systematic. Language also determines how we think and behave in the world. I suggest that this should

[78] Norman Malcolm, *Ludwig Wittgenstein - A Memoir* (Oxford: Clarendon Press, 1958), p. 13.
[79] Glock, *A Wittgenstein Dictionary*, p. 23.
[80] Bryan Magee in conversation with John Searle, 'Wittgenstein', *The Great Philosophers – An Introduction to Western Philosophy* (Oxford: Oxford University Press, 1997), pp. 322-323.

also be extended to ‘our world’, to fully engage and understand a form of life and behaviour as Wittgenstein had intended. He also explores how language functions in life, thus his term ‘form of life’ or a ‘life-form’ evolves.[81] Language, words and concepts acquire meaning as part of behaviour or as part of a form of life, where language permeates thinking and where it can never be transcended. It is in this context that he introduces the idea of a language-game.

For Wittgenstein, then, language is obscured when, ‘instead of looking at the *whole language-game*, we only look at the contexts, the phrases of language in which the word is used.’[82] Thus, for Wittgenstein, speaking a language and using words is an analogy to playing games: both, using words and playing games are human activities, social, communal and shared processes that are also systematic and are rule-governed. However, although the language-game is rule-driven, a language-game does not always follow strict rules:

> It is not everywhere circumscribed by rules; but no more are there any rules for how high one throws the ball in tennis, or how hard; yet tennis is a game for all that and has rules too.[83]

Wittgenstein wants to draw attention continually to the fact that there are certain structural features that are characteristic of a game and certain structural features that are characteristic of verbal discourse:[84]

[81] Wittgenstein, *Philosophical Investigations*, #19
[82] Wittgenstein, *The Brown Book*, p. 108.
[83] Wittgenstein, *Philosophical Investigations*, #68.
[84] Magee, ‘Wittgenstein’, p. 330.

> Doesn't the analogy between language and games throw light here? We can easily imagine people amusing themselves in a field by playing with a ball so as to start various existing games, but playing many without finishing them and in between throwing the ball aimlessly into the air, chasing one another with the ball and bombarding one another for a joke and so on. And now someone says:
> The whole time they are playing a ball-game and following definite rules at every throw.
> And is there not also the case where we play and—make up the rules as we go along? And there is even one where we alter them—as we go along.[85]

The *Investigations* is a reflection of Wittgenstein's thoughts and his examination into language and its link to human behaviour. For Wittgenstein, his language-game it is not a doctrine or 'any kind of theory.'[86] This is what Wittgenstein most rejects. However, as this study will show, I argue that the language-game in more than a tool for explaining his conception of meaning; it can also be considered a theory of language. Wittgenstein's observations and, therefore, remarks on 'behaviour' are to show how it [behaviour] is intrinsically linked to the practice of language. Similarly, throughout the *Investigations* he systematically rejects any 'cognitive' analysis, yet, as we will see, he often refers to 'the mind' and 'the mental' thus he does not deny that mental states and processes occur. Wittgenstein's remarks and interest in behaviour occur at a time when behaviourism was considered the prominent tradition of psychology: 'the psychologist observes the *external reactions* (the behaviour) of the subject.'[87] However, his interest in behaviour should not be confused with interpreting Wittgenstein as a behaviourist. This is examined further in Chapter 3.

[85] Wittgenstein, *Philosophical Investigations*, #83.
[86] Ibid., #109.
[87] Ibid., #571.

Wittgenstein contends that many words have a family resemblance only, as opposed to a specific fundamental essence that determines their definition:

> We may say: *nothing* has so far been done, when a thing has been named. It has not even *got* a name except in the language-game. This was what Frege meant too, when he said that a word had meaning only as part of a sentence.[88]

However, Gregory Murphy argues that Wittgenstein is arguing from the negative: Murphy claims that Wittgenstein does not say what specific features are present in family resemblance but argues instead that there is no defining feature, and thus, as Murphy states, can never be considered as part of the defining attribute theory.[89] Similarly, in games also there is no single essence of game; there is a criss-crossing and over-lapping of features:

> And the strength of the thread does not reside in the fact that some one fibre runs through its whole length, but in the overlapping of many fibres.[90]

There is no one characteristic or defining attribute that all games have in common: they have various features in common with human activities, such as they are rule-governed, socially constructed and systematic. Wittgenstein applies his term family resemblance to what he considers as 'meaningful' concepts and, thus, avoids the possibility of any ambiguity arising in language use. This enables us to use language and situate concepts contextually. However, Wittgenstein does not deny that identical words have different

[88] Ibid., #49.
[89] Murphy, *The Big Book of Concepts*, p. 17.
[90] Wittgenstein, *Philosophical Investigations*, #67.

meanings, but emphasises the key role that the environment plays and, therefore, successfully separates this issue of identical words from the notion of ambiguity.

As Wittgenstein argues we can only work from the inside of language, even when its fundamental constituent parts need to be described. We can never get outside of language and nor can it ever be transcended and so, therefore, each language-game too can only be understood from a 'within' perspective. A language-game refers to a social based context where human beings relate to, engage with and understand one another. As in games, a language-game will have (or will develop) its own rules for understanding and interpreting the many and varied aspects of its use of language. However, this does not prevent contradictions or some confusion arising when aspects of one language-game may have similar aspects to another language-game.[91]

However, Shand considers Wittgenstein's method 'to carry through his critique to be deceptively simple' since it emphasizes 'how every and any language acquires its meaning determines the limits of what is meaningful in language.'[92] Indeed, as far as Wittgenstein is concerned, limits are determined by discovering the essence of language. He also considers the limits of language as the limits of our thoughts; beyond those limits we not only lack any possibility of knowledge but we also reach what is unthinkable.[93] But are there any limits to thought and language? To give a philosophical critique is to

[91] Sheehan, p. 40
[92] Shand, p. 221.
[93] Ibid.

describe the logical limits of something, e.g. Kant's transcendental metaphysics. Thus, in the *Tractatu*s the aim of the critique is to show that the problems of philosophy do not need to be addressed because they are pseudo-problems which arise from illegitimately going beyond logical limits. Shand claims that 'philosophical problems are not solved but dissolved',[94] but this raises the question of whether philosophical problems are problems at all? Perhaps, instead, they are only linguistic puzzles waiting to be solved. Wittgenstein believes that because terms, including concepts, cannot be defined in a method illustrated by the logicians, it does not follow that ordinary language is therefore defective.

The American philosopher and logician, Willard van Orman Quine, offers a critique of logical atomism and logical positivism. Quine's holism is opposed to logical atomism, and implies that we cannot understand a sentence on its own: its sense is embedded in a conceptual scheme.[95] Quine, reinforcing Frege's principle, and subsequently supporting Wittgenstein's later philosophy, believes that the meaning of a term should be seen not in isolation but only in the context of a sentence. He insists that infants learn one word sentences by conditioning: this is referred to as 'occasion sentences'.[96]

> *Occasion* sentences, as against *standing* sentences, are sentences such as 'Gavagai', 'Red', 'It hurts', 'His face is dirty', which command assent or dissent only if queried after an appropriate prompting stimulation.[97]

[94] Ibid.
[95] See: Willard van Orman Quine, *Word and Object* (Cambridge, MA.: MIT Press 1964).
[96] Willard van Orman Quine, *Word and Object* (Cambridge, MA.: MIT Press 1964), p. 35.
[97] Ibid., pp. 35-36.

For an ‘occasion sentence’ to occur, appropriate prompting stimulation is necessary. Quine believes that the learning infant, whose linguistic ability is only confined to the correct usage of an occasion sentence, has not yet mastered an adult conceptual sense.[98] The terms, which refer to objects, that the learning infant absorbs form part of the vocabulary of terms which are necessary for grasping the full meaning of other specific terms and developing concepts. Learning a term is, as Frege contends, learning to use it within sentences, and for Wittgenstein, within contexts. Ultimately, the process of referring to individual objects is learned in context, and not simply by appeal to ‘occasion sentences’, or repetition or even ostensive teaching. For Quine, learning to refer to specific objects is not a simple matter: it involves learning to use terms in a construction of sentences rather than isolated occasion sentences. Quine is arguing that we should never take the meaning of a term in isolation: terms occur in sentences. This, too, is what the later Wittgenstein argues for, a natural approach to language where concepts are learned through an individual’s interaction with the environment or context in which the concept is present and, most importantly for Wittgenstein, where the concept is participatory.

Arguments from contemporary philosophers and psychologists are worth mentioning here in order to see how this subject has been discussed and examined. For example, Jerry Fodor argues that we cannot learn a language

[98] Ibid., p. 92.

whose terms express semantic properties not expressed by the terms of some language we are already able to use.[99] For example, Putnam claims that when we learn terms such as 'gold' or 'cat', we are learning socially acceptable stereotypes, 'so that it is reasonable to believe of things that conform to the stereotypes that satisfy the predicates.'[100] However, arguably, what is reasonable to believe need not prove to be true. For Fodor, 'either the semantic properties of a word aren't what you learn when you learn the word, or the semantic properties of a word don't determine its extension.'[101]

However, there are other views to consider also. Noam Chomsky claims that 'we know the grammar of our language, though the knowledge is not conscious or inferentially integrated with conscious knowledge.'[102] Fodor removes the emphasis from cognition and the mind and 'postulates propositional attitudes without regard to conscious access or cognitive integration.'[103] However, interestingly, Searle holds that 'representation without the possibility of conscious access is impossible.'[104]

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[99] Jerry Fodor, 'Private Language, Public Language', in *Philosophy of Language: The Big Questions*, ed. by Andrea Nye (Oxford: Blackwell, 1998), 53-61 (p. 56).
[100] Ibid. p. 57.
[101] Ibid.
[102] Noam Chomsky, *Knowledge of Language: Its Nature, Origin and Use* (New York: Prager, 1986); in M. Richard, *Propositional Attitudes: A Companion to the Philosophy of Language* ed. by B. Hale and C. Wright (Oxford: Blackwell, 2001), p. 217.
[103] Jerry Fodor, *The Language of Thought* (New York: Thomas Y. Crowell, 1975); in M. Richard, *Propositional Attitudes: A Companion to the Philosophy of Language* ed. by B. Hale and C. Wright (Oxford: Blackwell, 2001), p. 217.
[104] John Searle, 'Consciousness, Explanatory Inversion, and Cognitive Science', *Behavioural and Brain Sciences*, 13 (1990) 585-598; in M. Richard, *Propositional Attitudes: A Companion to the Philosophy of Language* ed. by B. Hale and C. Wright (Oxford: Blackwell, 2001), p. 217.

It would appear to be the case, then, that it may be more appropriate and beneficial to 'reconstruct' the language of science. For example, terms like 'validity' in philosophy, and terms like 'empirical' in psychology, are introduced as 'theoretical constructs rather than as an intervening variable of the observation language.'[105] This would mean, following Carnap, that a sentence containing a term of this type,

> can neither be translated into a sentence of the language of observables nor deduced from such sentences, but at best inferred with high probability.[106]

For example: '*Madge believes that a blue flame radiates more heat than a white flame*'. This sentence can be interpreted in such a way that we can infer from a proposition describing Madge's behaviour, at best with probability, but not with certainty. However, although Carnap's argument is persuasive, he does not introduce any distinction between the terms, or for Wittgenstein concepts, such as, 'belief' and 'know', 'true' and 'false', or 'valid' and 'invalid'. This sentence is valid but untrue: white flames radiate more heat than blue flames.

[105] Rudolp Carnap, *Meaning and Necessity – A Study in Semantics and Modal Logic* (Chicago: The University of Chicago Press, 1947), p. 230.
[106] Carnap, p. 230.

CHAPTER III

WITTGENSTEIN'S CENTRAL CONCEPTS: LANGUAGE-GAMES AND FAMILY RESEMBLANCE

> 'We find that what connects all the cases of comparing is a vast number of overlapping similarities, and as soon as we see this, we feel no longer compelled to say that there must be some one feature common to them all.'[1]

I consider that Wittgenstein's move from a calculus view of language, as seen in the *Tractatus*, to his language-game view of life, as it appeared in his later work the *Investigations*, as his most audacious move. However, we should not be concerned here with why Wittgenstein made this move — I would suggest that question in itself is a separate thesis — but rather the substance behind his two perspectives on language and specifically in relation to his conception of language, ontology and the application of rules.[2] Bearing this in mind, in this chapter we examine Wittgenstein's two central concepts: language-games and family resemblance. These concepts are integral to understanding how Wittgenstein has influenced cognitive psychology, specifically in the area of situating concepts and embodied cognition, both of which are exemplified in the language-game.

[1] Wittgenstein, *The Brown Book*, p. 87.
[2] Glock, *A Wittgenstein Dictionary*, p. 67.

There is clear continuity in Wittgenstein's thought with regard to language and his on-going investigation into the nature of language and meaning.[3] For example, his analogy of a game of chess is used both in his earlier and later works to describe the workings of language and, as Glock argues, it should be considered that the '*Investigations* transforms rather than abandons the *Tractatus's* methodological ideas.'[4] Testimony to this is Wittgenstein's return to philosophy and his:

> abandonment of not just logical atomism — the idea that the possibility of representation rests on the existence of sempiternal objects — but also the idea that representation presupposes an agreement in form between a proposition and a possible state of affairs.[5]

He continues to discuss the connection between propositions and facts, but now specifically, and with intention, he discusses the 'harmony between thought and reality which obtains equally between beliefs, expectations, desires, etc., and what verifies or fulfils them':[6]

> The agreement, the harmony, of thought and reality consists in this: if I say falsely that something is red, even the red is what it isn't. And when I want to explain the word 'red' to someone, in the sentence 'That is not red', I do it by pointing to something red.[7]

In *The Blue Book* Wittgenstein discusses issues such as '*criteria'* and '*symptoms'* by means of explanation of rules within language.[8] He argues:

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[3] Ibid., p. 27.
[4] Ibid., p. 27.
[5] Ibid., p. 185.
[6] Ibid.
[7] Wittgenstein, *Philosophical Investigations*, #429.
[8] Wittgenstein, *The Blue Book*, pp. 24-25.

> that in general we don't use language according to strict rules […]. *We*, in our discussions on the other hand, constantly compare language with a calculus proceeding according to exact rules.[9]

He develops this further by remarking that:

> This is a very one sided way of looking at language. In practice we very rarely use language such as a calculus. For not only do we not think of the rules of usage—of definitions, etc.—while using language, but when we are asked to give such rules, in most cases we aren't able to do so.[10]

Wittgenstein here is acknowledging that while rules apply to language, as also they apply in games, these rules are rarely used in something specific, such as a calculus, but rather are used even though we are unable to give specific definitions of these rules. He continues to remark that:

> When we talk of language as a symbolism used in exact calculus, that which is in our mind can be found in the sciences and in mathematics. Our ordinary use of language conforms to this standard of exactness only in rare cases. Why then do we in philosophising constantly compare our use of words with one following exact rules? The answer is that the puzzles which we try to remove always spring from just this attitude towards language.[11]

We know that one of the reasons why Wittgenstein moves from the idea of language as a calculus to a language-game view is because he saw a delineation between language and calculus, even though rules and application would always apply.[12] Wittgenstein's shift in the application of these rules allows him to present language, and language and behaviour and a form of life, in a broader and more cohesive structure.

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[9] Ibid., p. 25.
[10] Wittgenstein, *The Blue Book*, p. 25.
[11] Ibid., pp. 25-26.
[12] Glock, *A Wittgenstein Dictionary*, p. 67.

2.1 LANGUAGE-GAMES

The language-game appeared first in a Cambridge lecture (1932) which was then later, amongst other lectures, dictated to two of Wittgenstein's pupils — Francis Skinner and Alice Ambrose.[13] It then later appears in *The Brown Book*, when he refers to ways of using signs and systems of communication as language-games, noting that,

> they are more or less akin to what in ordinary language we call games […]. We are not, however, regarding the language-games which we describe as incomplete parts of a language, but as languages complete in themselves, as complete systems of human communication.[14]

He continues to remark that:

> Let us ask the question: Suppose I had 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 too'? 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?[15]

Even as a child learns words and concepts, this teaching is not a preparation for a language-game but is a game complete in itself: the teaching and the process of the language is, for Wittgenstein, the language-game.

> Would a child understand what it means to see the table 'as a table'? It learns: 'This is a table, that's a bench' etc., and it completely masters a language-game without any hint of there being an aspect involved in the business.

[13] Rush Rhees, in Wittgenstein, *The Blue Book,* p. v.
[14] Ibid., p. 81.
[15] Wittgenstein, *The Brown Book,* p.130.

> 'Yes, it's just that the child doesn't analyse what it does.' Once more: what is in question here is not an analysis of what happens. Only an analysis – and this word is very misleading – of our concepts. And our concepts are more complicated than those of the child; in so far, that is, as our words have a more complicated employment than its words do.[16]

Similarly when Wittgenstein talks of a primitive language as a language-game he is referring to the first words of a child:

> We can also think of the whole process of using words as one of those games by means of which children learn their native language. I will call these games 'language-games' and will sometimes speak of a primitive language as a language-game.[17]

Wittgenstein's key concept 'language-game' was first introduced into philosophical circles via *The Blue Book.* During all of Wittgenstein's later work what he most rejects is a theoretical account of language. I suggest that, in fact, Wittgenstein overlooked many of the positive attributes of a theory. Furthermore, I argue in Chapter 6 that his language-game is in fact what he most rejects — a theory, and one that has greatly exerted many philosophical and psychological influences. However, for us to view the language-game as a 'theoretical notion'[18] or as a key constituent part of a theory to explain language, for Wittgenstein, is a misconception of his work and a distortion of his ideas. For him, one of the best ways that we can understand language-games is to see them as a network of connections, or at least producing an

[16] Ludwig Wittgenstein, *Remarks on the Philosophy of Psychology, Volume* I [1946-1949], ed. by G.E.M. Anscombe and G.H. von Wright, trans. by G.E.M. Anscombe (Oxford: Blackwell, 1980), #413
[17] Wittgenstein, *Philosophical Investigations*, # 7.
[18] Ray Monk, *How to Read Wittgenstein* (London: Granta Books, 2005), p. 72.

understanding that allows us to see connections.[19] Wittgenstein tried to show that:

> not all meaningful uses of language are meaningful in the *same* way. For example, names acquire their meaning through being correlated with a person or object, but (a) not all words are names and (b) the thing or person that is the *bearer* of the name is not itself or herself the *meaning* of the name.[20]

However, when we attempt to provide a description of a language-game we are confronted with many obstacles and are reminded of when Wittgenstein asks:

> What does it mean to know what a game is? What does it mean, to know it and not be able to say it? Is this knowledge somehow equivalent to an unformulated definition? So that if it were formulated I should be able to recognise it as the expression of my knowledge? Isn't my knowledge, my concept of a game, completely expressed in the explanations that I could give? That is, in my describing examples of various kinds of game; shewing how all sorts of other games can be constructed on the analogy of these; saying that I should scarcely include this or this among games; and so on.[21]

For Wittgenstein, once the syntax and meaning of language are thoroughly and accurately examined, what remains are language-games, and it is these language-games that constitute the semantic link between language and reality, and most importantly, context.

The term language-game (*Sprachspiel)* refers to language use and the actions (behaviour or form of life) into which the language is woven therefore

[19] Ibid.
[20] Ibid., p. 73.
[21] Wittgenstein, *Philosophical Investigations*, #75.

enabling us to dispel with language confusions, vagueness and ambiguities. As Searle states:

> In his later work, as a consequence of emphasising the use of language, Wittgenstein is constantly calling our attention to the multiplicity, the variety, that we find in uses of language.[22]

However, the term language-game has not just one but several family related meanings: first, it refers to primitive models of language, which Wittgenstein describes in the opening remarks of the *Investigations* and which he intentionally constructs in order to enable clarification in the working of language in general; secondly, language-games also refer to the whole of any language, such as Irish for example, and the particular regions of our language with its specific grammars; and thirdly, they refer to games that children play that enable them to learn language, which Wittgenstein refers to as training in language. Language-games refer to a multiplicity of language practices in ordinary language as well as the whole of any ordinary language while drawing attention to the fact that learning a language is much more than just learning words.[23] Furthermore, they can be learned before we have mastered the individual concepts used within the actual game itself. The various meanings or references of language-games are not separated from each other but rather are connected by a network of relations as suggested by the term family resemblance and 'are "interwoven" with non-linguistic activities, and must be understood within this context.'[24] For Wittgenstein there is nothing trivial

[22] Searle, 'Wittgenstein', p. 326.
[23] Glock, *A Wittgenstein Dictionary*, p. 194
[24] Ibid., p. 124.

about language; it is only through the various and multiform activities of human life that words and concepts have meaning (form of life):

> Our clear and simple language-games are not preparatory studies for a future regularization of language—as it were first approximations, ignoring friction and air-resistance. The language-games are rather set up as *objects of comparison* which are meant to throw light on the facts of our language by way not only of similarities, but also of dissimilarities.[25]

Ray Monk describes Wittgenstein's language-game as 'a (usually fictitious) primitive form of language'[26] in which some specific aspect of our language, such as the role of names, is highlighted because it has been separated from the context in which it is embedded.[27] For Wittgenstein, there is no separation between the name and the context; the context is where the concept is learned. Monk claims that the idea is that we will be able to 'see the connection between this simplified case and language as it is used in real life.'[28] Monk gives the following example as it appears in the *Investigations* in the first paragraph:

> Now think of the following use of language: I send someone shopping. I give him a slip marked 'five red apples'. He takes the slip to the shopkeeper, who opens the drawer marked 'apples'; then he looks up the word 'red' in a table and finds a colour sample opposite it; then he says the series of cardinal numbers—I assume that he knows them by heart—up to the word 'five' and for each number he takes an apple of the same colour as the sample out of the drawer.—It is in this and similar ways that one operates with words.[29]

[25] Wittgenstein, *Philosophical Investigations*, #130
[26] Monk, *How to Read Wittgenstein*, p. 74.
[27] Ibid.
[28] Ibid.
[29] Wittgenstein, *Philosophical Investigations*, #1.

Wittgenstein's remarks here are not an accurate reflection of how we use language. However, Wittgenstein's purpose is to break language down, introduce what he considers a primitive language, and for a recognition and awareness of some aspects of our language in this primitive way rather than the way language appears in everyday lives and subsequently everyday use. When language is viewed from this perspective it allows us to see clearly features of language that otherwise may have been overlooked. Wittgenstein is drawing attention to the connections between the words and concepts, both as they are used in this example that he draws out for us, and how they are then used in ordinary life. He is highlighting the differences in the many and varied uses of language which is the fundamental basis of his concept the language-game; the meaning of a word or a concept is to be found in the way it is used, the meaning of a word or a concept is to be found in the language-game and, therefore, the context, to which it belongs.

In the *Tractatus*, we can see where Wittgenstein considers that there is a certain structural similarity between the structure of a sentence and the structure of the fact represented by a sentence. In the *Investigations* he abandons the idea altogether (although Glock maintains that he 'transforms' rather than 'abandons'[30] as referred to earlier) that there is such a thing as the 'essence' of language.[31] For Wittgenstein, there is an indefinite variety of uses of language, which he calls different 'language-games' that people play with language. This might suggest that Wittgenstein was perhaps not rejecting the

[30] Glock, *A Wittgenstein Dictionary*, p. 27.
[31] Searle, 'Wittgenstein', p. 329.

answer he had concluded in the *Tractatus* but rather that he now rejected the very question that he had presented himself with in the first instance in relation to language.

According to Monk, for Wittgenstein, the technique of language-games was to break the tendency and, therefore, the expectation, of being able to answer questions such as: 'What is time?', 'What is meaning?', 'What is thought?' and 'What are numbers?'[32]

> Connected with the inclination to look for a substance corresponding to a substantive is the idea that, for any given concept, there is an 'essence' — something that is common to all the things subsumed under a general term.[33]

In *The Blue Book* we can see clearly how Wittgenstein urges us to replace this notion of essence with the more flexible idea of family resemblances. The search for essences is, Wittgenstein states, an example of the 'craving for generality'[34] that springs from our preoccupation with the method of science. However, for Monk, Wittgenstein's avoidance 'to announce any general conclusions is perhaps the main feature that makes his work difficult to understand.'[35]

[32] Ray Monk, *Ludwig Wittgenstein – The Duty of Genius* (London: Vintage, 1991), p. 337.
[33] Ibid.
[34] Wittgenstein, *The Blue Book*, p. 17.
[35] Monk, *Ludwig Wittgenstein – The Duty of Genius*, p. 338.

2.2 FAMILY RESEMBLANCE

Wittgenstein's notion of a 'family resemblance' argues that there is no one defining feature to the meaning of a word:

> I can think of no better expression to characterise these similarities than 'family resemblance'; 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.[36]

Wittgenstein contends that many games have a family resemblance only, as opposed to a specific fundamental essence that determines their definition. However, as stated in Chapter 1, Murphy claims that in explaining family resemblances, Wittgenstein argues from the negative: he does not, or perhaps cannot, put forward any defining features or attributes but that does not mean or prove that there are none.[37] For Wittgenstein, games have no one defining attribute that all games share as language has no essence but only different phenomena related in various ways. I would argue that although Wittgenstein did not state any defining features of his concept family resemblance this does not detract from what he means: it is the connection between and across the words and concepts within a given rule-governed and contextual setting that he is most concerned about. It is the use of concepts and their subsequent meaning that is important to him. Similarly, however, in games there is no single essence of a 'game' — there is a criss-crossing and over-lapping of features. There is no one characteristic or defining attribute that

[36] Wittgenstein, *Philosophical Investigations*, #67.
[37] Murphy, *The Big Book of Concepts*, p. 17.

all games have in common: they have various features in common with human activities:

> The strength of the thread does not reside in the fact that some one fibre runs through its whole length, but in the overlapping of many fibres.[38]

Eleanor Rosch has used Wittgenstein's term family resemblance in many of her studies on concepts and categories.[39] According to Rosch, for Wittgenstein 'the referents of a word need not have common elements in order for the word to be understood and used in the normal functioning of language'[40] but rather there was a family resemblance, an over-lapping of features, that linked the referents of a word.[41] Rosch describes the family resemblance relationship as consisting of:

> a set of items of the form AB, BC, CD, DE. That is, each item has at least one, and probably several, elements in common with one or more other items, but no, or few, elements are common to all items.[42]

Investigating a network of family resemblances has developed into a theory about the shared nature of language, something common to all language users and linguistic communities. This, however, raises the question of how can we communicate (i.e. talk) if we do not agree on everything about the

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[38] Wittgenstein, *Philosophical Investigations*, #67.
[39] Wittgenstein's term 'family resemblance' is used by Eleanor Rosch in several of her studies on concepts and categories, for example: 'Family Resemblances: Studies in the Internal Structure of Categories', *Cognitive Psychology*, 7 (1975), 573-605; E. Rosch, C. Mervis, W. Gray, D. Johnson and P. Boyes-Braem, 'Basic Objects in Natural Categories', *Cognitive Psychology*, 8 (1976), 382-439; 'Reclaiming Concepts', *The Journal of Consciousness Studies*, 6 (1999), 61-77. (See also footnote 23 in the Introduction to this dissertation for a more comprehensive listing of Rosch's articles.)
[40] Eleanor Rosch and Caroline B. Mervis, 'Family Resemblances: Studies in the Internal Structure of Categories', *Cognitive Psychology*, 7 (1975), 573-606 (p. 574).
[41] Ibid.
[42] Ibid.

words and concepts that we use? I am interested in how Wittgenstein would answer this. I suggest he would argue that:

> We are unable clearly to circumscribe the concepts we use; not because we don't know their real definition, but because there is no real 'definition' to them […]. Our ordinary use of language conforms to this standard of exactness only in rare cases.[43]

It is important to remember, then, that Wittgenstein applies the term family resemblance to all language-games, and as previously stated, in so doing avoids the possibility of any duplicity or ambiguities arising in language use. However, he does not deny that identical words have different meanings (homophones) such as 'right', 'rite' and 'write' or 'quay' and 'key', and separates this issue from the notion of ambiguity and, therefore, vagueness.

In the language-game, Wittgenstein considers that there is no one essence of a 'game', no one defining feature. Similar to his exposition of the term 'family resemblance', features over-lap and, therefore, many and various associations and relations are considered. Furthermore, many of the characteristics of 'games' are similar and some identical to characteristics of human activity (i.e. behaviour), thus his argument that language is a function of life or a form of life. Within a language-game we follow certain rules hence the notion of rule-governing; for example, if we want to talk about a whole natural language, then this becomes the language-game — 'Japanese is a language-game', and similarly if we want to become more particular about a particular usage, for example the use of the concept 'justice', then the way we use the

[43] Wittgenstein, *The Blue Book*, p. 25.

concept ‘justice’ within context and in a sentence is a language-game: ‘I shall also call the whole, consisting of language and the actions into which it is woven, the ‘language-game.’[44]

Wittgenstein’s arguments that there are no defining features or fundamental essence in order that we may define concepts, can be considered an attack on essentialism: all concepts meaningfully and appropriately used refer to a common underlying essence that make ‘the thing’ what it is. Wittgenstein’s attack, or rather his rejection of essentialism, is also fuelled by his anti-dogmatic approach to both language and philosophy as exemplified in his later work, which is in contrast to his logical, analytical and quasi-realist approach as viewed in the *Tractatus*.

Wittgenstein remarks that meaning is always found in language-games and, therefore, argues that meaning can only be found when it can be shared: ‘Language is everywhere bound up with the rest of our activities.’[45] His ideas on language, and in particular the language-game, have never been abandoned, particularly in psychology, and the concept of a language-game is still referred to as we shall examine in Chapters 4, 5 and 6. However, a recurring underlying theme that arises in relation to the exploration of Wittgenstein’s work regarding the various concepts that occur within a language-game is the possibility that there may be some contemporary theories of language development which are incompatible with it. However, to date psychology

[44] Wittgenstein, *Philosophical Investigations*, #7.
[45] Searle, ‘Wittgenstein’, p. 339.

accepts Wittgenstein's investigation into language and language use and indeed has even used some concepts from his later work, such as his concept family resemblance, in an attempt to explain concept development in particular. Rather than supporting Wittgenstein's views on language as behaviour and, therefore use, psychologists tend to see it in a more theoretical framework. This too is further explored in the following chapters.

2.3 LANGUAGE: MEANING *IS* USE

Family resemblance is Wittgenstein's term for the type of similarity that seems to hold between members of a category which was later used to derive family resemblance scores by Rosch and Mervis.[46] However, what also needs to be considered is the extent to which estimates of family resemblance correlate highly with typicality. 'Some categories do not have gradations of membership, while others do.'[47] Using Wittgenstein's term family resemblance, Rosch and Mervis have shown that we can derive a family resemblance score for each member of a category by noting all the attributes that that member has in common with all the other members of the category. Rosch and Mervis found that typical members have high family resemblance scores and share few (if any) attributes in common with related, contrast categories:[48]

[46] See, Rosch and Mervis, 'Family Resemblances: Studies in the Internal Structure of Categories', pp. 573-605 and, also, Eysenck and Keane, p. 531.
[47] George Lakoff, *Women, Fire, and Dangerous Things – What Categories Reveal about the Mind* (Chicago: The University of Chicago Press, 1987), p. 21.
[48] Rosch and Mervis, 'Family Resemblances: Studies in the Internal Structure of Categories', pp. 573-605.

> Rosch is perhaps best known for developing experimental paradigms for determining subjects' ratings of how good an example of a category a member is judged to be.[49]

This too is further explored in chapter five.

The defining attribute theory has clear, specific and well-defined common properties and boundaries. For example, a concept belonging to this category would be a triangle whose properties comprise three sides. From this type of example Wittgenstein derives his notion of 'game' and how 'game' does not fit the classical view since there are no common properties shared by all games, for example: some games depend upon physical skills, dexterity, upon position or strategy, while others depend upon luck and others on the throw of a dice. There are card games, ball games, board games and there are games of prowess and occasional games, and competitive games and games demanding skill. Some games involve a group of people (e.g. football), other games involve only two individuals (e.g. chess) while other games can be enjoyed by oneself (e.g. solitaire).

Wittgenstein also observed that there was no fixed boundary to the category *game.* The category could be extended and new kinds of games introduced, provided that they resemble previous games in appropriate ways. Lakoff cites that the introduction of video games in the 1970s where the boundaries of the game category were extended on a large scale. He states that:

[49] Lakoff, *Women, Fire, and Dangerous Things – What Categories Reveal about the Mind*, p. 15.

> One can always impose an artificial boundary for some purpose; what is important for his point is that extensions are possible, as well as artificial limitations.[50]

Thus Wittgenstein cites the example of the category *number*. Historically, numbers were originally taken to be integers and were then extended to 'rational numbers, real numbers, complex numbers, transfinite numbers'[51] and other subsequent numbers developed by mathematicians. Again, as Lakoff states, we can see how we can, for a particular purpose or intention, limit the category *number* to, for example, integers only, or rational numbers only, or real numbers only. 'But the category *number* is not bounded in any natural way, and it can be limited or extended depending on one's purposes.'[52]

Wittgenstein argues that just because we cannot give a definition of words such as 'game' or 'number' or 'family' that we do not know what they are: 'But this is not ignorance. We do not know the boundaries because none have been drawn.'[53] A fuzziness or lack of definitiveness around a word or a concept does not mean that the expression itself is meaningless. This is where he argues for the use of a word or concept and how it is learned in a context rather than searching for a precise and definitive meaning. Furthermore a sharp boundary can be chosen, to suit a purpose; however, in such cases, it is always the way in which the concept is used, and how it is learned, that is pivotal, rather than any precise meaning.

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[50] Ibid., p. 16.
[51] Ibid.
[52] Ibid.
[53] Wittgenstein, *Philosophical Investigations*, #69.

When we start to examine the constituent elements of the concept family resemblance, it raises many interesting possibilities. For example, within family resemblance are some members of the category more typical and others less typical? Is this because of how we form the concept in the first place? Murphy argues that:

> For example, the basic family resemblance analysis of typicality or the structure analysis of basic categories simply do not refer to knowledge and yet do very well.[54]

Furthermore, although the feature list is a very useful simplification of reality for purposes of calculating family resemblance, it nonetheless tends to lead us away from thinking about how the concept's properties are both constrained and explained by one another and indeed by more general knowledge.[55] There is also the issue of fuzzy boundaries and categories to consider. Wittgenstein wants us to allow for 'fuzzy' boundaries which he refers to and furthers this by describing why the meaning of exactness is indefinable. We know that boundaries and exactness are the traits of 'Form' and it is this that he is fighting against when he refers to the term 'family resemblance'. However, he also applies the term concept to all meaningful concepts although this raises the question of what he means by the term 'meaningful'? An alignment can be made here between Wittgenstein's notion of 'fuzzy' boundaries and those found within the domain of conceptual structure, such as 'fuzzy' boundaries within prototype theory. I suggest that this raises a further interesting question: are the boundaries of some concepts limited by family resemblance?

[54] Murphy, *The Big Book of Concepts*, p. 487.
[55] Ibid., p. 489.

The *Investigations* rejects the assumption that the meaning of a word is the thing that it stands for.[56] For Glock, 'that involves a misuse of the word 'meaning'.'[57] Similarly, Hacker states that:

> There is no such thing as the name relation, and it is confused to suppose that words are connected with reality by semantic links.[58]

That supposition, for Hacker, rests on a misinterpretation of ostensive definition. Not all words or concepts, are, or need to be, sharply defined, 'analysable by specification of necessary and sufficient conditions of application.'[59] The idea that we should always be looking for 'determinacy of sense' is not viable. Vagueness should not always be considered a defect, and we should never assume that there is ever an absolute standard of exactness. Hacker claims that the very ideal of analysis (inherited from the Cartesians and Empiricists, and developed afresh by Moore and Russell) was misconceived.[60]

> The terms 'simple' and 'complex' which are relative, were misused. Many concepts, in particular philosophically crucial ones such as 'proposition', 'language', 'number', are united by family resemblance rather than by common characteristic marks.[61]

However, some might argue that Wittgenstein is incorrect when he states that there is no real 'definition' to the concepts that we use. Cognitive theorists have shown that there are real definitions and that some are bound by specific

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[56] Glock, *A Wittgenstein Dictionary*, p. 25.
[57] Ibid.
[58] Peter Hacker, in *The Philosophers – Introducing Great Western Thinkers*, ed. by Ted Honderich (Oxford: Oxford University Press, 1999), p. 228.
[59] Ibid.
[60] Ibid.
[61] Ibid., pp. 228-229.

rules, such as outlined in the defining attribute theory of concept development, which must be noted were open to philosophical influences.

While Wittgenstein continually draws our attention to the connections between the words and concepts, both as they are used in specific examples that he draws out for us — such as 'block', 'pillar', 'slab', 'beam' —[62] and how we use them in our ordinary life, he is focusing on broader descriptions rather than specific definitions. He is also highlighting the differences in our uses of language which is the fundamental basis of the language-game: for Wittgenstein the meaning of a word and, therefore, the concept, is found in the way it is used, it is found in the context of the language-game to which it belongs. For psychology, however, there is a further extension to Wittgenstein's language-game thesis: the meaning of a concept, both concrete and abstract, can be found in a theory of concept development, such as the exemplar view and the knowledge approach which are examined in Chapter 4.

In both abstract and concrete concepts there is no one essence, thus Wittgenstein's argument for a family resemblance, is a rejection of general explanations and the philosopher's 'craving for generality'.[63] Wittgenstein again uses the term 'craving for generality'[64] which he states is the resultant of a number of tendencies connected with particular philosophical confusions.[65] He argues that we need to look at the actual variety of uses of these words —

[62] Wittgenstein, *Philosophical Investigations*, #3.
[63] Wittgenstein, *The Blue Book*, p. 17.
[64] Ibid.
[65] Ibid.

'look and see' — and we will see many and varied criss-crossing and over-lapping of family resemblance relationships in their uses:

> We have a tendency to look for something in common to all the entities which we commonly subsume under a general term. We are inclined to think that there must be something in common to all games, say, and that this common property is the justification for applying the general term 'game' to the various games; whereas games form a *family*, the members of which have family likeness. Some of them have the same nose, others the same eyebrows, and others again the same way of walking; and these likenesses overlap.[66]

For Wittgenstein it is essential that we do not search for a systematic theory or doctrine to explain this concept, for he repeatedly asks us to: 'Don't think but look.'[67]

The following extract from Wittgenstein's Cambridge notes, which were subsequently published as *The Blue Book,* illustrates what he means when he talks of family resemblance and a language-game:

> I shall in the future again and again draw your attention to what I shall call language-games. These are ways of using signs simpler than those in which we use the signs of our highly complicated everyday language. Language-games are the forms of language with which a child begins to make use of words. The study of language-games is the study of primitive forms of language or primitive languages.[68]

From this point of view, therefore, it is fair to conclude that the *Investigations* is a continuation of Wittgenstein's ideas about language and its constituent parts therein which were first described in the *Tractatus*: propositions, meaning, ontology, semantics, pragmatics and syntax. It is questionable

[66] Ibid.
[67] Wittgenstein, *Philosophical Investigations,* #66.
[68] Wittgenstein, *The Blue Book*, p. 17.

whether Wittgenstein ever abandoned the calculus view of language. However, by the time *The Blue and Brow*n *Book*s were circulating he had replaced the term 'calculus' with 'language-game' and this would indicate a definite shift in his conception of language.[69] However, both the calculus and language-game are rule-governed but it is Wittgenstein's conception of these rules, and their application, that has altered: 'if anyone utters a sentence and *means* or *understands* it he is operating a calculus according to definite rules.'[70] Wittgenstein claims that the calculus view of language does not reflect the essential nature of reality but is autonomous. Glock states that for Wittgenstein '"the meaning" of a mathematical sign, like that of a chess piece, is the sum of the rules that determine its possible "moves".'[71] It is the 'application' that separates applied mathematics and language from chess and pure mathematics: 'it is the way in which they engage with other (linguistics and non linguistic) activities.'[72] Just as the calculus view of language highlights similarities between language and formal systems, the term language-game highlights the similarities between language and games.[73]

As I stated in the opening that while Wittgenstein's move from the calculus view of language to the more flexible language-game is his most audacious move, and the one that has had the most significant influence in philosophical and psychological circles, his views on behaviour and its connection to language use have equally also caused much debate. In the

[69] Glock, *A Wittgenstein Dictionary*, p. 67.
[70] Wittgenstein, *Philosophical Investigations*, #81.
[71] Glock, *A Wittgenstein Dictionary*, p. 193.
[72] Ibid.
[73] Ibid.

following chapter I discuss how viewing Wittgenstein as a behaviourist is a distortion of his work and, therefore, creates a misunderstanding of his central thesis on how language should be considered. For Wittgenstein, the practice of language occurs always within a context and where the concept is participatory.

CHAPTER IV

A POTENTIAL PROBLEM FOR PHILOSOPHY AND PSYCHOLOGY: WITTGENSTEIN AND BEHAVIOURISM

'Psychology treats of behaviour, not of the mind.'[1]

Wittgenstein showed a genuine interest in psychology, as some of his other works clearly exemplify, such as *The Blue and Brown Books* and *Remarks on the Philosophy of Psychology* which is presented in 2 Volumes. Part II of the *Investigations* is concerned with psychological concepts, both specifically and general remarks 'about' concepts, and it is here that the reader first encounters Wittgenstein's interest in this 'other' discipline. There is, nonetheless, as this chapter will show, a potential problem for both philosophy and psychology, namely that to consider or refer to Wittgenstein as a behaviourist is a misinterpretation of his work. His interest and descriptions of behaviour are used only to show his views on the practice of language and language use. Furthermore, as I will show in this study, Wittgenstein could see the limitations of behaviourism and, thus, for him, there evolves an emphasis on 'the mind' and 'the mental'. His language-game shows the context in which a concept is participatory, which is a key feature of embodied and situated cognition. Wittgenstein illustrates how the mind and the body, along with the environment, and a participating concept, all engage together.

[1] Wittgenstein, *Philosophical Investigations*, #153

In the *Investigations* Wittgenstein adopts a new way of approaching philosophy: to see and understand it as an activity rather than a doctrine. This activity he refers to is a way of clearing ambiguities caused by the bewitchment of language: 'Philosophy is a battle against the bewitchment of our intelligence by means of our language.'[2] It is not Wittgenstein's intention to falsify other philosophers' theories or works; it is simply to attack 'philosophical problems and confusions at their *source.*'[3] Wittgenstein's resistance to philosophical theorizing also extends to psychological theorizing. He does not think that problems about the mind that were created by bad philosophical theories can now be adequately addressed through empirical scientific means. Wittgenstein is essentially objecting to the idea that mental states are considered in isolation from the social environment[4] and, therefore, any social context. Here we can see his growing interest in how an individual interacts with the environment and the concept in question. Furthermore, while he maintains that empirical psychological explanations can be given of behaviour, he nonetheless maintains that psychology is not a science.

Both the early and late Wittgenstein ask questions concerning language, and language and its relation to the world. Wittgenstein developed language in terms of effect and use. Thus Wittgenstein is primarily concerned with *how* the role of language is an intrinsic part of human behaviour. Unlike his earlier work, the *Investigations* explicates language as a social and systematic process where we can see the role that language plays in how we think and behave in

[2] Ibid., #109.
[3] Monk, *How to Read Wittgenstein*, p. 78.
[4] Williams, p. 241.

the world. For Wittgenstein, along with others such as Dewey and Quine, language is 'intrinsically social'.[5] This has important implications regarding analysing and understanding both 'truth' and 'meaning' in human behaviour from any exclusively scientific-behaviourist point of view, for, as Davidson acutely notes:

> This does not entail that truth and meaning can be defined in terms of observable behaviour, or that it is 'nothing but' observable behaviour; but it does imply that meaning is entirely determined by observable behaviour, even readily behaviour. That meanings are decipherable is not a matter of luck; public availability is a constitutive aspect of language.[6]

4.1 Private Language

Wittgenstein also shows a significant interest and understanding of not just language, as it is used in any language-game or context, but also of what is referred to as a private language, which he claims is impossible. However, while Wittgenstein's argument may be correct, concepts are nonetheless key to understanding the argument. The delineation between a shared or public language and a private language rests firmly in the area of semantics: when referring to public language, the issue of semantics needs to be considered. When referring to the notion of a possible private language, a language used for the purpose of communicating to oneself only, and in principle unusable for communication with another, the issue of semantics is both internalised and

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[5] Alex Byrne, 'Behaviourism', *A Companion to the Philosophy of Mind*, ed. by S. D. Guttenplan, (Blackwell, 1994) <http://webmit.edu/abyrne/www/behaviourism.html> [Accessed on 18 April 2012] (p. 7).

[6] Daniel Davidson, 'The Structure and Content of Truth', *Journal of Philosophy*, 87 (1990), 279-328 (p. 314).

subjective as it is embedded in the inner experience, or the private object, being named.[7] For some, Wittgenstein's attack on the possibility of a private language show that meaning, for example, must be a manifestation of behaviour.[8] When Wittgenstein speaks of a private language he is referring to language that cannot be understood by anyone other than the speaker:

> The individual words of this language are to refer to what can only be known to the person speaking; to his immediate private sensations. So another person cannot understand the language.[9]

I contend that the private language argument, for many, is not fully understood; subsequently there are many and varied interpretations from several critics of what Wittgenstein actually intended to argue. I shall clarify some aspects that have been misinterpreted in Wittgenstein's private language argument here.

Immediately preceding the rule-governing section in the *Investigations*, and perhaps even as a result of these passages, are sections often referred to as the private language argument, which is also considered an anti-Cartesian argument. The private language sections in the *Investigations* suggest that in order for an utterance to be meaningful it must be possible to subject this same utterance to public and shared social standards in terms of its correctness. For Wittgenstein, therefore, a private language is *not* a genuine or meaningful rule-governed language. There are areas where states of sense experience are private and so their nature cannot be known to anyone other than the individual

[7] Byrne, 'Behaviourism', p. 7.
[8] Ibid., p. 5.
[9] Wittgenstein, *Philosophical Investigations*, #243.

who experiences them. Issues such as these are covered by philosophy of language, philosophy of mind and epistemology.[10]

In the *Investigations* we see how the structure of language determines the way in which we think of the 'real' world and, therefore, our experience of the 'real' world. For example, we are able to determine what counts as one object or two objects or even the same object; in fact it enables us to determine what counts as an object at all:[11]

> We can't discuss the world and we can't even think of the world independently of some conceptual apparatus that we can use for that purpose. And, of course, the apparatus is provided by language.[12]

Since there are many strands to Wittgenstein's argument on private language, it is immensely controversial; while some disagree with it, others argue it is valid such as Roger Scruton and John Searle. Those who consider his argument to be valid come to the conclusion that:

> It is not possible to refer to private objects in a public language or refer to private objects in a private language; thus simply one cannot refer to them.[13]

It is indeed a complex yet rich area within Wittgenstein's work and has caused much debate, widespread disagreement over its significance and validity. Wittgenstein is claiming in his argument that for language to mean anything at

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[10] Edward Craig, 'Meaning and Privacy', in *A Companion to the Philosophy of Language*, ed. by Bob Hale and Crispin Wright (Oxford: Blackwell, 1997), p. 127.
[11] Searle, 'Wittgenstein', p. 326.
[12] Ibid.
[13] Roger Scruton, *Modern Philosophy – An Introduction and Survey* (London: Pimlico, 2004), p. 53.

all, its use has to follow particular rules. I suggest that perhaps this is why it immediately follows the rule-governing section in the *Investigations*. However, some of the principles that constitute a rule, or the following of a specific rule-governing behaviour, are essentially social and shared constructs, and, therefore, he concludes that there can be no such thing as a private language. It simply cannot exist.

Wittgenstein continues to argue that we do not give private definitions of sensation words or concepts, but rather sensation language: our language for describing inner experiences, is a part of a public, social phenomena.[14] For Wittgenstein, our ordinary sensation language is not a private language because we learn and use the terms and concepts of this language in conjunction with public criteria or public phenomena that is clearly delineated and only learned through behaviour and context-dependent situations.

For example, if we feel a sensation directly, such as tickling or tingling, and then we give that particular sensation a name, the rules for that name's subsequent use are already determined by the sensation itself. However, Wittgenstein argues that this impression is incorrect and, therefore, false. He purports that the sensation of tickling or tingling derives its identity only from a communal and shared practice of expression, social phenomena, and our use of concepts and language. If, however, the sensation was a metaphysical phenomenon, then the possibility of a communal and shared practice, within any context, would be irrelevant to the actual concept of the sensation, in this

[14] Searle, 'Wittgenstein', p. 338.

case tickling or tingling: the nature of the object would be revealed as a single mental act of naming and all subsequent facts in relation to the use of the name would be deemed irrelevant to how the name was intended to be interpreted: its meaning, and, therefore, the name, ultimately becomes private. Wittgenstein's wants us to see that such subsequent facts could not be irrelevant and that no names, such as a named object, for example, could be private. The notion of having the genuine identity of a sensation revealed in a single act is simply unobtainable. For Wittgenstein 'our sensation language, our language for describing inner experiences, is tied to public social phenomena at every point;'[15] it is never a private act or a private experience.

However, an issue that should be considered is how words can be linked or refer to sensations. In *The Wittgenstein Reader* edited by Anthony Kenny, he draws our attention to Wittgenstein asking us where is the connection between the name and the thing being named: where is the sensation derived from.[16] Sensations fall into Wittgenstein's private language because only the individual experiencing, for example, the 'pain' can know whether they are actually in 'pain'; another can only surmise the level of pain involved. This of course highlights the issue of certainty: how does anyone know for certain that they are in 'pain'? For Wittgenstein, you are either in pain or not in pain, and that descriptive terms such as 'knowing' and 'certainty' should be disregarded; they become irrelevant, meaningless, useless if not redundant, in the individual experience of the 'pain' itself. The expression

[15] Searle, 'Wittgenstein', p. 338.
[16] *The Wittgenstein Reader*, ed. by Anthony Kenny, (Oxford: Blackwell Publishers, 1994), p. 142.

should be: 'I am in pain' or 'I am not in pain'. Therefore, it is true and valid to say that others can genuinely claim that they can doubt another's experience of pain, but that the individual itself can say with certainty that 'I am in pain' and not doubt it. Although issues concerning truth and validity mistakes can be made about the external world, judgements about our immediate and directly personal sensations and not sensations stored in memory, can only be true.[17]

Any language that another person cannot understand, for Williams, is not a language.[18] The hypothesis of private language is that 'the meanings of the terms of the private language are the very sensory experiences to which they refer.'[19] Private language suggests that only the individual who is experiencing the 'sensation', the inner experience, is the only one who understands it. If words were used to describe concepts such as 'throbbing', 'uncomfortable', 'hurting', 'stinging', 'dull ache' then surely they would no longer be private sensations. If the language used to describe the private sensations, such as those above, is derived from our vocabulary, the language the individual uses competently and consistently while engaging and communicating with others, then is it not possible that others are capable of understanding the individual's inner experiences and private sensations, negating the notion of a language that is private.

Wittgenstein is arguing for the impossibility of a private language on the grounds that it [private language] must be incoherent since the words are

[17] Ibid.
[18] Williams, p. 15.
[19] Ibid.

used to refer to the concepts of what can only be known to the person speaking; his philosophical idea of a private language is central to the notion that an individual cannot feel another individual's private sensation. Perhaps it should be considered that the sensation is '*directly* correlated'[20] with a particular concept or term, rather than interpreting the sensation, or sensory experience, as the meaning. However, it is important to understand that Wittgenstein is not objecting to any language-game in which we refer to private inner experiences or sensations.

The notion of isolation is also important in Wittgenstein's argument, for example: an individual who is in complete isolation and is naming his private sensation of 'throbbing'. This individual is familiar with and understands his private sensation of 'throbbing', completely separate from his own private experiences of the sensation of 'throbbing': from understanding and the experience itself, private sensations subsequently acquire their meaning, but in complete isolation from others. It is a private process, although contextual, with no reference to others' inner experiences or private sensations. This private process allows for us to name the sensation, and to become familiar with it. What we cannot contend is that a private process takes place. To this end, language still serves its ultimate purpose: to convey thoughts,[21] which may be about pain, thirst, hunger, happiness, heat, sadness, anxiety or any type of sensation. Furthermore, Wittgenstein claims that advocates of a private language are abusing the word 'name'; he accuses them of taking the word

[20] Ibid., p. 16.
[21] Kenny, p. 155.

'name' from ordinary usage and misusing it to prove their argument of naming a private sensation.

According to the Cartesian, mental states are private, and can only ever be considered as such; they are only knowable to the person experiencing them. However, that would suggest that it also makes them a separate entity from the external world which we inhabit and which is public, and where contents are accessible to more than one person. However, for Wittgenstein, the 'external' world is where we experience a communal and shared system. It is in this place [the world] that we engage with contexts and where concepts become participatory.

Wittgenstein also refers to self-reference: he claims that an individual's public language is so constructed that if we were to make a mistake when applying the term 'pain' or 'thirst' or 'throbbing', for example, to one's self, then what has transpired is a misunderstanding of the actual terms and concepts themselves:

> 'But at least I know from my own case what it means "to say things to oneself". And if I were deprived of the organs of speech, I could still talk to myself'.
> If I know it only from my own case, then I know only what I call that, not what anyone else does.[22]

Similarly, Wittgenstein argues that the depth grammar of a sentence can have different implications. For example, it doesn't make sense to say 'I know I am

[22] Wittgenstein, *Philosophical Investigations*, #347.

hot' in the same way we can say that 'I know that Ireland is playing against Italy today'. Wittgenstein's central point here is that we cannot doubt, guess, surmise or question the notion of their private sensation. The sentence, therefore, 'I know I am hot' is invalid while the sentence 'I am hot' is valid. Similarly, we can guess, doubt, surmise or question whether Ireland are playing against Italy today, but cannot doubt the validity of sentences that arise from private sensations and inner experiences. In this example, Wittgenstein is arguing that the depth grammar of a sentence is of central value and, therefore, we must separate sentences such as 'I am hot' from the factual sentences and statements such as 'Ireland is playing against Italy today':

> In what sense are my sensations *private*?—Well, only I can know whether I am really in pain; another person can only surmise it.—In one way this is wrong, and in another nonsense.[23]

Further he remarks:

> The proposition "sensations are private" is comparable to: "One plays patience by oneself".[24]

Wittgenstein considers language as 'the symbolic representation of sensory experience.'[25] For him it is essential that the notion of the use of words is itself a social phenomena, that all criteria of meaning are social and not personal, and certainly not private. Wittgenstein considers that concepts and words derive their meaning from the contexts in which they are used, and these contexts are built upon social constructs through a systematic process, and

[23] Ibid., #246.
[24] Ibid., #248.
[25] W. L. van der Merwe and P. P. Voestermans, 'Wittgenstein's Legacy and the Challenge to Psychology', *Theory Psychology*, 5 (1995), 27-48 (p. 27).

unquestionably, on forms of life. The practice of language and language used are functions of life and, therefore, neither can be subtracted from our existence and then examined in isolation from all other activities, including behaviour. For Wittgenstein 'meaning-giving (and taking, for that matter)'[26] should be seen as 'an experiential affair'.[27]

Wittgenstein refers to the grammar of a concept and for some this can be considered as the 'rich behavioural context'[28] in which the behaviour, environment and concept are determined. Furthermore, as Shimp argues, language presupposes a non-linguistic context. For him it functions against a 'background of human needs in the setting of a natural environment.'[29] It is this that determines its character. 'And we must see it and understand it in this way, as involved in a pattern that goes further, if we are to understand it at all.'[30]

4.2 BEHAVIOURISM

Wittgenstein's philosophy is not a cognitive discipline:

> There are no propositions expressing philosophical knowledge — and cannot emulate the methods of science […]. Wittgenstein's methodological views are based on the conviction that, unlike science, philosophy is concerned not with truth, or matters of fact, but with meaning.[31]

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[26] Ibid.
[27] Ibid.
[28] Charles P. Shimp, (1989) 'Contemporary Behaviorism Versus the Old Behavioral Straw Man in Gardner's The Mind's New Science: A History of the Cognitive Revolution', *Journal of the Experimental Analysis of Behavior*, 51 (1989), 163-171 (p. 164).
[29] David Pole, *The Later Philosophy of Ludwig Wittgenstein* (London: Athlone Press, 1958), pp. 2-3; cited in Willard F. Day, 'On Certain Similarities Between the Philosophical Investigations of Ludwig Wittgenstein and the Operationism of B.F. Skinner', *Journal of the Experimental Analysis of Behavior*, 12 (1969), p. 496.
[30] Ibid.
[31] Glock, *A Wittgenstein Dictionary*, p. 27.

While Wittgenstein's main interest can be found in language and logic, his genuine interest in psychology can be found in many of his works as stated previously. His views on the impossibility of a private language, and his systematic rejection of cognitive analysis, is arguably in contrast to his views on psychology and some of its more dominant themes at the time such as psychoanalysis and behaviourism. While Wittgenstein rejects all cognitive analysis and asserts that philosophy is not a cognitive discipline, Hathcock argues he has failed nonetheless to address the biological aspect of language development.[32]

It could be argued that the most significant influence on Wittgenstein's later work is undoubtedly the prominent tradition of psychology in 1945 — behaviourism: 'the psychologist observes the *external reactions* (the behaviour) of the subject.'[33] According to Wittgenstein, psychology's problems are first and foremost conceptual. An example from the *Investigations* can serve to illustrate this point: taking the concepts of love or hope, Wittgenstein asks:

> Could someone have a feeling of ardent love or hope for the space of one second—*no matter what* preceded or followed this second?— What is happening now has significance—in these surroundings. The surroundings give it its importance.[34]

[32] Dani Hathcock,'Wittgenstein, Behaviourism, and Language Acquisition', <http://www.drury.edu/multinl/story.cfm?ID=2435&NLID=166> [Accessed 26 September 2012] (p. 1).
[33] Wittgenstein, *Philosophical Investigations*, #571.
[34] Ibid., #583.

Wittgenstein's answer is no: this is not a meaningful use of the concepts 'love' or 'hope'. The 'surroundings', as Wittgenstein says, are not so that the concepts can be correctly applied and, therefore, understood. For Wittgenstein we do not discover this through experiments, or by handing out questionnaires to 'subjects', as they are called, but only by examining the 'grammar' of psychological concepts, i.e., 'the normativity that determines what linguistic moves are allowed to make sense in what "surroundings", and what are not.'[35] Again we can see the central role that the term context plays for Wittgenstein; it is in the situation that the concept is learned, used and adapted where necessary. The concept participates and becomes part of the environment.

> One thinks that learning language consists in giving names to objects. Viz, to human beings, to shapes, to colours, to pains, to moods, to numbers, etc.. To repeat—naming is something like attaching a label to a thing. One can say that this is preparatory to the use of a word. But *what* is it a preparation *for*?[36]

Wittgenstein rejects the possibility of any scientific psychology. He concludes the *Investigations* with the remark that:

> in psychology there are experimental methods and *conceptual confusions* […].
> The existence of the experimental method makes us think that we have the means of solving the problems which trouble us; though problem and method pass one another by.[37]

[35] Svend Brinkmann, 'The Normativity of the Mental: A De-psychologization of Psychology', <www.wittgenstein-network.dk> [Accessed 26 September 2012] (p. 5).
[36] Wittgenstein, *Philosophical Investigations*, #26.
[37] Ibid., p. 197.

For Williams, what Wittgenstein rejects mostly is the idea that any cognitive ability (e.g., memory, recognition, problem solving) can be explained by reference to any type of inner psychological process:

> His two principal objections that are most central to the cognitivist program would be that (1) causal stories are irrelevant to our understanding of cognitive abilities; and (2) believing, recognising, remembering, etc are not mental processes.[38]

Again, here we can see how Wittgenstein is addressing the issue of how mental states should not be considered in isolation from any social context or social environment. Williams continues to show why Wittgenstein argues that the most interesting psychological questions are conceptual. She suggests that there are two aspects to this claim: first, the critical aspect in which we are concerned with 'what counts as meaning or intending or believing;'[39] and secondly, the genetic aspect that explains how we come to be a 'believer or an intender'.[40] For Wittgenstein, both aspects can be illustrated in terms of social practices, social contexts and forms of life.[41]

According to Rhees, when Wittgenstein was in Cambridge, before 1914, he had thought 'psychology a waste of time.'[42] However, some years later he discovered the work of Sigmund Freud and for the remainder of his life he considered him as one of the few authors that had something to say, even though Wittgenstein regularly disagreed with him and considered him in the

[38] Williams, p. 241.
[39] Ibid., p. 241.
[40] Ibid.
[41] Ibid.
[42] Rush Rhees, 'Conversations on Freud', in *Wittgenstein - Lectures and Conversations on Aesthetics, Psychology and Religious Belief*, ed. Cyril Barrett (Oxford: Blackwell Publishing, 1967), pp. 41-52 (p. 41).

wrong. Wittgenstein was critical of Freud and considered psychoanalysis, and particularly its influence in America and Europe, rather harmful, 'although it will take a long time before we lose our subservience to it.'[43] For Wittgenstein, to learn from Freud it was necessary to be critical and psychoanalysis generally prevented this,[44] although Wittgenstein remained a 'disciple of Freud' and 'a follower of Freud' for many years.[45]

Wittgenstein's interest in behaviour, 'the mind', 'the mental' and psychological concepts, leads us to the conclusion that he had an understanding and knowledge of the science of psychology. Using behaviourism as the psychological paradigm of the 1940s we can tentatively see the background to which he remarked and developed his ideas on language as behaviour and language as use. However, the [psychological] behaviourists primary concern is that which is 'overt' and 'objective'. Wittgenstein's interest is in how behaviour and language, intrinsically linked, are used to understand and use concepts within a particular context. However, both [psychological] behaviourists and Wittgenstein consider that meaning and, therefore, understanding, will always be culturally and contextually variable.

Wittgenstein's interest in psychology as a philosopher has fuelled many debates about his behaviourist viewpoints and, therefore, it is without doubt a contentious question to ask whether Wittgenstein was a behaviourist or whether he was a philosopher who showed an interest in behaviour and its link

[43] Ibid.
[44] Ibid.
[45] Ibid.

to the practice of language. His philosophy of mind has often been interpreted, and I argue it has also been misinterpreted, as a form of behaviourism. His descriptions of behaviour are intrinsically linked to language and the nature of meaning which are clearly seen in his remarks on philosophical psychology, both in the *Investigations* and in the *Remarks on the Philosophy of Psychology Volumes 1 and 2.*

Wittgenstein understands and, therefore, emphasises the role of the 'context' or the 'environment' in linguistic interaction, although it must be noted that he uses the term 'context' sparingly: the term appears a total of six times and always in what Kopytko refers to as the 'ordinary rather than in the technical sense.'[46] Furthermore, Wittgenstein systematically reconceptualises language and behaviour, and all 'linguistic interaction in terms of language-games and forms of life.'[47] Koptyko states that according to Wittgenstein:

> a hierarchy of embedding consists of words and expressions embedded in language-games, which in turn, are embedded in a variety of forms of life (for instance, biological, social or cultural).[48]

Terms and concepts are key components for Wittgenstein, and consequently he argues that in order for us to understand a term or concept, we must not only place it back into its context, but must also look at its usage. Here Wittgenstein is drawing our attention to the sophistication of the usage of terms in ordinary contexts, and exploiting it in terms of its flexibility and

[46] Roman Kopytko, 'Philosophy and Pragmatics: A Language-game with Ludwig Wittgenstein', *Journal of Pragmatics,* 39 (2007), 792-812 (p. 795).
[47] Ibid.
[48] Ibid

conversational perspective. For him this is how we learn a concept; in a general context-dependent situation. 'Most questions and propositions of the philosophers result from the fact that we do not understand the logic of our language.'[49]

It is clear that the *Investigations* is concerned with how the role of language is involved in human behaviour, and so the *Investigations* becomes Wittgenstein's own investigation into the workings of language and grammar, rather than an investigation into behaviour. His remarks and explanation of concepts is not meant to be interpreted as a description of behaviourism, rather they are used to illustrate his views on concept *qua* concept, and concepts 'about' things in the world, as well as:

> concepts of meaning, of understanding, of a proposition, of logic, the foundations of mathematics, states of consciousness, and other things.[50]

Furthermore, knowledge of language and language-use are seen not only in linguistic terms but are also evident in the behaviour of an individual: to fully grasp and understand a concept is to be able to use it competently, and this, as we know, is always reflected in behaviour. Although language and behaviour are interlinked and interdependent for Wittgenstein, they are nonetheless both discussed independently and collectively by him.

[49] Wittgenstein, *Tractatus Logico-Philosophicus*, p. ix.
[50] Wittgenstein, *Philosophical Investigations*, Preface.

4.3 PHILOSOPHICAL BEHAVIOURISM: ANALYTICAL OR LOGICAL

Behaviourism, for one commentator, has 'no major, distinct existence but it is everywhere.'[51] Undoubtedly, this statement made by Harzem is still relevant for present day psychology.

Analytical or logical behaviourism, with its historical roots in logical positivism, is a theory within philosophy which concerns the meaning or semantics of mental terms or concepts. It states that the very idea of a mental state or condition is the idea of a behavioural disposition or family of behavioural tendencies. For example, when a belief is attributed to someone, we are not saying that he or she is in a particular internal state or condition. Instead we are characterising the person in terms of what he or she might do in particular situations or environmental interactions.

Analytical behaviourism can be seen clearly in the work of Gilbert Ryle and arguably a version of this type of behaviourism can also be traced in the work of Daniel Dennett on the ascription of states of consciousness via a method he calls 'heterophenomenology'.[52] Similarly, Quine also took a behaviourist approach to the study of language. He claimed that it should never be considered that any type of psychological or mental activity or process has a place in the scientific account of either the origins of speech or in

[51] Peter Harzem, 'Behaviourism for New Psychology: What was Wrong with Behaviourism and What is Wrong with it Now', *The Study of Behavior: Philosophical, Theoretical,and Methodological Challenges*, 32 (2004), 5-12 (p. 11).
[52] Daniel Dennett, *Consciousness Explained* (Boston: Little, Brown and Company, 1991).

the meaning of speech.[53] For Quine, to talk in a scientific discipline concerning the meaning of an utterance is simply to talk about 'stimuli for the utterance, its so-called "stimulus meaning"'.[54] There is no evidence to suggest that Wittgenstein's works, particularly his philosophical psychology, can be interpreted as analytic behaviourism. Perhaps it is more accurate to suggest that Wittgenstein has been misinterpreted as a behaviourist both in the psychological sense and the philosophical one.

According to Thornton:

> mental state descriptions are really disguised shorthand versions of behavioural descriptions. Thus, they cannot be invoked to explain the same chunks of behaviour.[55]

While Wittgenstein provides a rich description of mental phenomena ('the mind' and 'the mental') throughout the *Investigations*, he also very carefully distinguishes between mental states and behaviour:[56]

> Are you not really a behaviourist in disguise? Aren't you at bottom really saying that everything except human behaviour is a fiction?—If I do speak of a fiction, then it is of a *grammatical* fiction.[57]

Furthermore, Glock states that:

> Mental terms would not mean what they do if they were not bound up with behavioural criteria […]. Mental phenomena are neither reducible

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[53] George Graham, 'Behaviourism', Stanford Encyclopedia of Philosophy, <http://plato.stanford.edu/entries/behaviourism/> [Accessed on 18 April 2012] (p. 6).
[54] Ibid.
[55] Tim Thornton, *Wittgenstein on Language and Thought: The Philosophy of Content* (Edinburgh: Edinburgh University Press, 1988), pp 119-120.
[56] Ibid., p. 120.
[57] Wittgenstein, *Philosophical Investigations*, #307.

> to, nor totally separable from, their bodily and behavioural expressions.[58]

Similarly, Wittgenstein asks how does the philosophical problem, even if it is only conceptual, about mental processes and states, and about behaviourism arise?

> The first step is the one that altogether escapes notice. We talk of processes and states and leave their nature undecided. Sometimes perhaps we shall know more about them—we think. But that is just what commits us to a particular way of looking at the matter. For we have a definite concept of what it means to learn to know a process better […]. So we have to deny the yet uncomprehended process in the yet unexplored medium. And now it looks as if we had denied mental processes. And naturally we don't want to deny them.[59]

Here Wittgenstein acknowledges that there is more to know about the nature and 'essence' of mental processes and states even if for now we must deny the 'uncomprehended process' in the 'unexplored medium'. We could reasonably suggest here that in light of the developments within cognitive psychology as a science that the then 'uncomprehended process' is now considered to be cognitive processes such as attention, perception, memory, reasoning, problem solving and language, and that the 'unexplored medium' refers to 'the mind'.

However, Wittgenstein's later philosophy of psychology 'retains some points of contact with logical behaviourism.'[60] It discards any dualist account

[58] Glock, *A Wittgenstein Dictionary*, p. 58.
[59] Wittgenstein, *Philosophical Investigations*, #308.
[60] Glock, *A Wittgenstein Dictionary*, p. 57.

of the mental, and mind, as epistemically private. Furthermore, as Glock claims:

> It accepts, albeit as an empirical fact, that language-learning (and thereby the possession of a complex mental life) is founded on brute 'training' (*Abrichtung*), rather than genuine EXPLANATION, and presupposes natural patterns of behaviour and reaction, to be activated by certain stimuli. And it claims that the ascription of psychological predicates to other people is *logically* connected with behaviour.[61]

However, Wittgenstein's remarks and descriptions in his later philosophy, where some suggest that he has tentatively retained some points of contact with logical behaviourism, is not sufficient to assert his allegiance to a form of behaviourism, either psychological and analytical, even though 'methodological, psychological, and analytical behaviourism often are found in one behaviourism'[62] (such as Skinner's radical form of behaviourism[63]). Furthermore, even though Wittgenstein systematically rejects cognitive analysis, he does not deny the existence of a complex mental life, particularly when he refers to mentalistic concepts. However, this should not be confused with citing him as a behaviourist:

> How does the philosophical problem about mental processes and states and about behaviourism arise?—The first step is the one that altogether escapes notice. We talk of processes and states and leave their nature undecided. Sometimes perhaps we shall know more about them—we think […].[64]

[61] Ibid.
[62] Graham, p. 2.
[63] Ibid.
[64] Wittgenstein, *Philosophical Investigations*, #308.

4.4 SKINNER AND WITTGENSTEIN

While Wittgenstein had been disturbed at how the logical positivists had misunderstood his earlier work, the *Tractatus*, at the same time he was also aware of the parallel developments in psychology. In 1913 John B. Watson exerted a hugely influential force on the course of psychology by introducing his behaviourist approach. This was followed in 1938 with B.F. Skinner publishing *The Behavior of Organisms* where he explored research findings on operant conditioning. Some academics advocating behaviourism would consider Skinner's work as a preparation and an introduction to Wittgenstein, a type of 'Skinner is Wittgenstein in practice'.[65] For Skinner, however, behaviourism is all that there can be: the mind, the mental, the internal reactions and responses are all exhibited through the behaviour of the individual. For him, 'behaviourism seems committed to the idea that knowledge is social in origin.'[66]

Willard Day makes a compelling argument when he systematically outlines the similarities between Skinner and Wittgenstein. Some of these similarities, which are discussed in detail in his paper,[67] include: their objections to dualism; the significance of private events; their interest in

[65] In conversation with Dr Bryan Roche, Department of Psychology, National University of Ireland, Maynooth, (2011).
[66] B.F. Skinner, 'Verbal Behavior' (New York: Appelton-Century-Crofts, 1957), in C.P. Shimp, 'Contemporary Behaviorism Versus the Old Behavioral Straw Man in Gardner's The Mind's New Science: A History of the Cognitive Revolution', *Journal of the Experimental Analysis of Behavior*, 51 (1989), 163-171 (p. 165).
[67] Willard F. Day, 'On Certain Similarities Between the Philosophical Investigations of Ludwig Wittgenstein and the Operationism of B.F. Skinner', *Journal of the Experimental Analysis of Behavior*, 12 (1969), 489-506.

natural language, the effects of verbal behaviour and the situation or context in which it occurs; and the nature of meaning:

> Wittgenstein and Skinner are vey much alike in their analysis of the nature of meaning itself. For both, there are no such *things* as meanings, where meanings are taken to be mental entities somehow focally involved in communication. For both, a search for meaning can lead only to the study of word usage, to the analysis of verbal behaviour as it is actually seen to take place. For both, the meaning *is* the usage.[68]

Also both Skinner and Wittgenstein considered their work descriptive in nature rather than theoretical.[69] Pole claims that:

> Wittgenstein disclaimed any intention of propounding a philosophy of language [i.e., theory of the nature of language]. To me it seems that he has done so whether he intended it or not.[70]

According to Day, Wittgenstein wants psychologists and philosophers to understand that one of the difficulties for them that arises regarding their concern in relation to mental processes is 'from habitual ways of talking about, of conceptualizing, of thinking about mental events as objects of study.'[71]

However, while Day draws attention to the similarities between Skinner and Wittgenstein, these similarities could arguably be drawn between Skinner and other philosophers too. For example, Frege and Skinner share the same perspectives on logical positivism; Quine too is interested in natural language and the context in which it occurs; and the contemporary philosopher Daniel Dennett would share Skinner's interest in the nature of meaning. While Skinner

[68] Day, p. 498.
[69] Ibid., pp. 489-506.
[70] Pole, pp. 79-82; in: Day, p. 503.
[71] Day, p. 500.

and Wittgenstein share similar, but not exact, views on aspects such as the impossibility of a private language,[72] this in no way constitutes an argument to consider Wittgenstein as a behaviourist. Wittgenstein's ideas and remarks were often and repeatedly misunderstood and misinterpreted, often distorted, 'even by those who professed to be his disciples.'[73] Wittgenstein also doubted 'that he would be better understood in the future.'[74] This we now know to be true. Even in contemporary philosophical and psychological circles, Wittgenstein is still misunderstood and his passages are often taken out of context, if not distorted. While Wittgenstein offers no substantive remarks about his rejection of him as a behaviourist he nonetheless rejects the notion. Furthermore, as Pole states:

> Yet Wittgenstein himself has been thought a behaviourist. For, one asks, if Dualism is rejected […] what other alternative remains? But Wittgenstein does not mean to offer any alternative, any other or newer theory or picture.[75]

In the late 1930s and 1940s behaviourism was revived by Skinner. In this revival Skinner developed some of Watson's main principles of behaviourism.[76] This included the rejection of consciousness and related terms, and Skinner's subsequent arguments for mentalistic terms to be eliminated from scientific language.[77] Skinner is without doubt a leading figure in twentieth century psychology and his remarks on behaviourism as documented

[72] Day, pp. 495-496.
[73] Georg Henrik von Wright, 'Ludwig Wittgenstein – A Biographical Sketch', *Philosophical Review*, 64 (1955), pp. 527-545 (p. 527).
[74] Ibid.
[75] Pole, pp. 63-67; cited in Day, p. 494.
[76] Graham, p. 8.
[77] Harzem, p. 10.

in his writings such as *Verbal Behavior* (1957) and *About Behaviorism* (1976) have had an enormous impact on behaviourism as a paradigm. While Skinner openly acknowledged that he had been influenced by some of Wittgenstein's ideas, this acknowledgement was never reciprocated. While Day discusses ten similarities between Skinner and Wittgenstein, perhaps these similarities are only apparent because of Wittgenstein's influence on Skinner, rather than any reciprocal influence. Furthermore, for Skinner, it is mentalistic to look at words such as 'deciding', 'remembering', 'trying' or other, similar mentalistic words, as identifying psychological processes or states of some description which map the underlying structure of our psychological nature.[78] Day argues that this is where he is resisting ontology. Furthermore, Day states that Skinner sees these types of words as part of language where we make sense of behaviour and, therefore, 'if we are to account for the behaviour to which they are relevant we must first analyze the control of these terms as aspects of verbal behaviour.'[79]

Wittgenstein continued to revise his earlier ideas on language and reality, and his quasi-realist arguments such as how the world imposes concepts on us: 'A concept forces itself on one. (This is what you must not forget)'[80] and what a concept is, or is not: 'We are not analysing a phenomenon (e.g. thought) but a concept (e.g. that of thinking), and therefore the use of a word.'[81] Furthermore, for Wittgenstein:

[78] Day, p. 501.
[79] Ibid.
[80] Wittgenstein, *Philosophical Investigations*, p. 174.
[81] Ibid., #383.

> We are unable clearly to circumscribe the concepts we use; not because we don't know their real definition, but because there is no real 'definition' to them. To suppose that there *must* be would be like supposing that whenever children play with a ball they play a game according to strict rules.[82]

Wittgenstein's developing views on concepts, their context and language-use are without doubt set against a background where behaviour is integral to understanding them, rather than set against a behaviourist paradigm or background. Furthermore, an interesting aspect to consider is whether Wittgenstein exerted any influence on psychological behaviourism. In Chapter 4 there is a discussion on how his term 'family resemblance' is used by Rosch in the prototype theory of concept development, and also as this dissertation shows his influences can now also be traced in current psychological disciplines such as embodied and situated cognition.

While Wittgenstein was determined not to be labelled a behaviourist and was concerned to avoid any form of behaviourism 'many of his commentators remain unconvinced.'[83] Furthermore, some of these commentators and critics, who in their wish to defend behaviourism, saw him as an 'ally'.[84] Other commentators, according to Luckhardt, 'believing behaviourism to be mistaken, regard what they see as Wittgenstein's commitment to it as a flaw in his philosophy.'[85] Commencing a discussion on the question of whether Wittgenstein is a behaviourist is undoubtedly a contentious issue and one that has been asked by not only many eminent

[82] Wittgenstein, *The Blue Book*, p. 25.
[83] C. Grant Luckhardt, 'Wittgenstein and Behaviorism', *Synthese*, 56 (1983), 319-338 (p. 319).
[84] Ibid.
[85] Ibid.

psychologists but also by philosophers, scholars and critics. It is a fractious area of discussion with many complex matters to consider before any conclusions can be drawn. In psychology, behaviourism is the view that human activity is accounted for by descriptions of behaviour. For example, 'Tom' is visibly upset. The description of the subject's behaviour includes using the terms crying, anxious and agitated; it is from observing Tom's behaviour - crying, anxious and agitated – that we can give an account or description of his behaviour. However, in philosophy, and in particular with reference to the philosophy of mind, logical behaviourism argues that mental concepts can be defined in terms of behaviour, in the sense that statements about 'the mind' or 'the mental' can also be understood as statements about behaviour. This would suggest that there is more than a tentative link between concepts and behaviour, and mind and behaviour.[86]

The general term 'behaviourist' has been applied to Wittgenstein, perhaps only because he places an emphasis on meaning and 'meaning as use' within a social context: for example, his concept family resemblance and how we are using language but yet no specific definition of the type of behaviourism he is supposed to have held is available. Thornton argues that there is a connection between mental states and behaviour.[87] For Thornton, because the content of a mental state depends on the linguistic content, being capable of forming mental states requires underlying practical abilities and skills in order to use, understand and explain signs. It is these practical abilities

[86] Graham, p. 16.
[87] Thornton, p. 120.

and skills that play a central and key role in the formation of mental states. Therefore, 'there is an a priori and analytic connection between mental states and behaviour.'[88] However, we have to ask whether that connection between mental states and behaviour is sufficient to warrant the generality of the term behaviourist to Wittgenstein.

Behaviourism, as a prominent paradigm in the 1940s and 1950s, placed an emphasis on the study of learning rather than focusing on psychological functioning; behaviourists were interested in seeing and understanding the effects of stimulus response (S-R) reactions[89] – that which is considered to be 'observable' and 'objective' as opposed to that which is 'inward' or a form of 'introspection' both of which are neither observable nor objective. Similarly, at the time of Wittgenstein and the *Investigations,* behaviourism was concerned with attempting to put forward a 'theory of behaviour'. The proposed theory of behaviour was based on the principles of conditioning, S-R reactions, and on environmental determinants of behaviour. However, what should not be ignored are some of the problems that have been associated with behaviourism, such as the issue that environmental stimuli are accounted for while some internal factors, for example past knowledge and experience, are overlooked. It was from this dissatisfaction with behaviourism that the development of the cognitive approach emerged.

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[88] Ibid.

[89] S-R, Stimulus-Response, is 'representing the bond between a stimulus and its associated response. The term is used as a shorthand expression for a particular approach to psychology, specifically that predicted upon conditioning principles and affiliated with the general position of associationism, and it serves as an all-purpose adjective for phenomena, hypothetical mechanisms and general theories that are based on this bond […] Often referred to by the abbreviation, S-R.' See Reber, pp. 713-714.

A further anomaly in Wittgenstein's alleged allegiance to behaviourism can be identified when he suggests that language is impossible to transcend, is inexplicable to explain from an 'outside' perspective and, therefore, is only coherent from within the workings of language itself: language is obscured when 'instead of looking at the *whole language-game,* we only look at the contexts, the phrases of language in which the word is used.'[90] I would argue here that when he denies the explanation of language from an outside perspective he is in fact, to use Pole's term, 'disclaiming' a form of behaviourism.[91] Although Wittgenstein does not develop his remarks or descriptions on mental states and activities, and never denies their existence either, he is aware, perhaps, of the limitations that behaviourism has to offer, and considers that 'the mind' and 'cognition' now have a more dominant role to play. The language-game is language as behaviour, an action, a form of life, and as I have discussed earlier speaking a language and using words is an analogy to playing games, which is also behavioural. However, although Wittgenstein did not discard the idea that language is rule-governed, 'he clarified it, comparing language to a calculus no longer but to a game.'[92] He wanted to show that although language is rule-governed this should not be seen as just a heuristic device. For him, understanding a language, using a language competently, mastering a language, all involve learning skills and techniques concerning the application of rules.[93]

[90] Wittgenstein, *The Brown Book*, p. 108.
[91] Pole, pp. 63-67; cited in Day, p. 494.
[92] Glock, *A Wittgenstein Dictionary*, p. 151.
[93] Ibid.

Wittgenstein continues to emphasise the link between language, meaning and rules:[94] 'following according to the rule is FUNDAMENTAL to our language-game.'[95] Both language and games are contextual and share several features rather than one defining characteristic that suggest how they should be categorised. However, although the language-game is rule-driven, the rules are applied loosely as opposed to strict and rigorous rules that we might apply to science. A language-game does not always follow strict rules:

> It is not everywhere circumscribed by rules; but no more are there any rules for how high one throws the ball in tennis, or how hard; yet tennis is a game for all that and has rules too.[96]

Without doubt there remains many unresolved ambiguities and unanswered questions in relation to Wittgenstein's real intent with regard to his psychological writings, particularly in relation to his descriptions of concepts in general and more specifically his 'concepts of meaning, understanding and states of consciousness.'[97] His descriptions of behaviour feature prominently in the explanation of language-behaviour, ostensive definition and the impossibility of a private language. Throughout his work, however, but particularly in relation to the *Tractatus* and *Investigations*, Wittgenstein is considered as an extraordinary and influential philosopher who moves successfully from an anti-realist position of logic advocating a calculus view of language, to a quasi-realist position as exposited in his later work and the

[94] Ibid.
[95] Ludwig Wittgenstein, *Remarks on the Foundations of Mathematics* [1937-44], ed. by G.H. von Wright, R. Rhees & G. E. M. Anscombe, trans. by G.E.M. Anscombe (Oxford: Blackwell, 1978), p. 330.
[96] Wittgenstein, *Philosophical Investigations,* #68.
[97] Ibid., Preface.

language-game. During this incalculable move he illustrates how language is a form of behaviour and how it is a part of a social, contextual and shared process. Wittgenstein's views on language and the language-game involve descriptions of behaviour by their very nature only, and these descriptions should not distort or invite misinterpretation of Wittgenstein as a philosopher.

4.5 Some Preliminary Conclusions

One of the most significant remarks that Wittgenstein makes in the conclusion of the *Investigations* concerning the relationship between his way of thinking and that kind of thinking promoted in natural science (and natural history), is:

> If the formation of concepts can be explained by facts of nature, should we not be interested, not in grammar, but rather in that in nature which is the basis of grammar?—Our interest certainly includes the correspondence between concepts and very general facts of nature. (Such facts as mostly do not strike us because of their generality.) But our interest does not fall back upon these possible causes of the formation of concepts; we are not doing natural science; nor yet natural history—since we can also invent fictitious natural history for our purposes.[98]

Wittgenstein, in other words, was not a behaviourist, but because his remarks are often intricate and dense that this leads us to a range of interpretations, including one of behaviourist beliefs. Wittgenstein as a philosopher who viewed behaviour as intrinsically linked to the practice of language, concepts and their use, rather than Wittgenstein as the behaviourist, introduces language in a broader context but with no specific link to cognitive processing. He asks

[98] Ibid., p. 195.

how language functions in life and what role language plays in human thinking and in human behaviour, and it is precisely these fundamental questions that separate him from a behaviourist stance and anchor him firmly in logic and language. Similarly, his interest in establishing broader descriptions as opposed to concrete definitions distinguishes his language-game as innovative, impossible to describe and fundamentally posits his language system as something definitive and sufficiently distinct to a developmental process. Furthermore, describing or labelling Wittgenstein as a behaviourist is arguably a profound misconception of his work and distorts any potential appreciation and understanding of his philosophy. Wittgenstein continued to reject the notion of behaviourism as he undermined logical positivism in his later works.

As Williams states, it is the conceptual psychological questions that Wittgenstein finds so interesting[99] and indeed, for him, most of the questions that he asks can be answered through the explication of social practices and the human form of life. He rejects the possibility of a scientific psychology, any theory that purports to explain behaviour in terms of inner mental causes, but this should not lead us to assume that this rejection is reason enough to describe Wittgenstein as a behaviourist. Simply 'psychological behaviourism was a theory that concerned Wittgenstein from the 1930s to the end of his life'[100] and his 'analysis of psychological sentences does not commit him to any form of behaviourism.'[101]

[99] Williams, p. 241.
[100] Luckhardt, p. 319.
[101] Ibid.

Having explored the paradigm of behaviourism and how misinterpreting Wittgenstein's perspective on language and forms of life could be a potential problem for philosophy and psychology, the following chapter looks at the different approaches that cognitive psychology takes to concepts including Wittgenstein's influence on the prototype view. This is followed by an examination into the subsequent developments in psychology, namely the cognitive revolution and the impact that this had on later psychological paradigms, specifically embodied cognition. In a further section of this dissertation we see how Wittgenstein could see the limitations of behaviourism, thus the focus is no longer on 'mentalism' and 'the mind' but has developed now to the interaction between the person, the concept and the environment. Testimony to this is Wittgenstein's clever use of linking language to experiential forms of life, such as the ''body-subject' in Merleau-Ponty's terminology'[102] and, thus, there is evidence to suggest that there is a 'challenge with which Wittgenstein's legacy confronts present-day psychology.'[103]

[102] Van der Merwe and Voestermans, p. 27.
[103] Ibid.

CHAPTER V

THE COGNITIVE APPROACH TO CONCEPTS

'A concept forces itself on one. (This is what you must not forget.)'[1]

In order to understand embodied cognition and how concepts are situated within an environment or context, it is important to explain how and why paradigms in contemporary cognitive psychology arose. The beginning of this chapter looks at the origins of psychology and its relationship with philosophy. The subsequent division between these two sciences led to developments in the respective areas that may not have otherwise occurred. What is most interesting is not necessarily the delineation between the two disciplines but rather how both philosophy and psychology often overlap and the reciprocal nature that can be seen across the two domains. However, while the philosophical roots and origins of philosophy and historical paradigms are of immense importance in understanding how cognitive psychology has arrived at present day paradigms, the scope of this dissertation does not allow for any indepth analysis or discussion; rather I give a brief overview of the relevant schools to show how psychology has used philosophical elements and how some contemporary paradigms are using tools that were once thought to be out-dated.

[1] Wittgenstein, *Philosophical Investigations*, p. 174.

While Wittgenstein had seen the pendulum swing from psychoanalysis to behaviourism in psychology, I would argue that he was also witnessing the emerging interest of a new domain that focused on mentalism and the role that 'the mind' was about to play. Psychology was about to witness a revolution, or as Miller states 'the cognitive revolution in psychology was a counter-revolution' that took place in the early 1950s.[2] Miller explains that the first revolution had occurred much earlier when a group of experimental psychologists, who had been greatly influenced by Pavlov and his S-R experiments, attempted to redefine psychology as the science of behaviour.[3] However, by the mid 1950s it had become clear that psychology needed something more scientific than behaviourism. Miller quotes Chomsky as remarking that 'defining psychology as the science of behaviour was like defining physics as the science of meter reading.'[4] Behaviourism was interested in observable data only and not data that was unobservable, such as mental states. However, psychology could see that mentalistic concepts had a place and, when integrated, could explain behavioural data, hence the term 'cognition' was born.[5]

One of the main aims of this dissertation is to understand how a language-game provides the context in which concepts are participatory and how, therefore, we see the embodied cognition thesis at work. However, we first have to understand the different approaches that cognitive psychology

[2] George A. Miller, 'The Cognitive Revolution: a Historical Perspective', *Trends in Cognitive Science*, 7 (2003), 141-144 (p. 141). [Accessed 13 July 2012]
[3] Ibid.
[4] Ibid., p. 142.
[5] Ibid.

takes in terms of explaining concepts, their origin and their function. Having examined the historical roots of psychology, this chapter then looks at the nature of concepts and their ontology, which is followed by an explanation and critique of theories and viewpoints that have been proposed by cognitive psychology. While all of the approaches discussed in this chapter have limitations, we will see how some views have been influenced by philosophers, such as Aristotle (the classical view), and Wittgenstein (prototype approach), while other viewpoints, such as the exemplar view and the knowledge approach originated from the probabilistic approach to concepts. Work from the main contributors in this area shall be examined, namely: Rosch, Medin, and Murphy. Other factors will also be considered such as exemplar strategies, hypothesis testing strategies and memory, and following this there will a discussion on the cognitive revolution which ultimately gave rise to contemporary views in cognitive psychology, namely embodied cognition.

5.1 The Philosophical Roots of Psychology

The origins of psychology can be seen in the rich work of many eminent philosophers such as Socrates (469–399 BC), Plato (427–348 BC) and Aristotle (384–22 BC). Early Greek philosophers such as these questioned the nature of the human person, the mind, the soul, death and forms of perfection.[6] Aristotle similarly made numerous profound contributions to philosophy, and subsequently psychology, including his ideas on what might be considered

[6] Rita L. Atkinson et al., *Hilgard's Introduction to Psychology*, 12th edn. (Fort Worth: Harcourt Brace College Publishers, 1996), p. 663.

'associationism'.[7] Along with Socrates and Plato, Aristotle was one of the first philosophers to explore ideas on how the mind works. He considered that the mind was composed of elements which are organised by means of association. Reber describes Aristotle's concept of association by means of four laws as follows:

(1) The law of contiguity: this is where two concepts are associated. They occur together through the link of space and time.

(2) The law of similarity: this occurs when two concepts are associated because they share similar features, thus the thought of one can trigger the thought of the other.

(3) The law of contrast: this occurs when a link can be created from opposites, that is, two concepts are associated because of their different attributes.[8] The roots of associationism can be 'traced back to the epistemology of Aristotle' and while there has never been a school that has called itself 'associationism', like 'behaviourism' or 'psychoanalysis', 'the principle has proven to be one of the most enduring theoretical mechanisms.'[9]

Philosophers such as Socrates and Plato considered that all learning and acquisition of knowledge is already known - *a priori*. In psychology, a priori knowledge is described by terms such as a 'nativism' or a 'nativist' approach.

[7] See, this chapter, Section 4.9.3 Memory. It is of philosophical and historical importance to note, however, that Hume's famous psychological critique of the traditional Aristotelian conception of 'causality', which stresses 'no necessary connections' but 'only mental association of ideas' in our understanding of relations in empirical concepts that are derived from experience, determines the way Aristotle's theory of abstraction of universals by the mind and held in 'memory' was received by psychologists conducting their science in the wake of Hume's critique of both Cartesian and Aristotelian Greek psychology. See, below, n. 9 and corresponding quotation and comments by Reber.

[8] Reber, p. 58.

[9] Ibid., pp.56- 57.

The ideas of nativism, that some ideas are innate at birth, such as God and Perfection, were developed further by René Descartes (1596–1650) in his *Meditations on the First Philosophy* (1641) and his arguments on the mind-body problematic (dualism).[10] The fact that the mind was now considered as a separate and immaterial subject was innovative, even though controversial. As a traditional dualist, Descartes was furthering Plato's arguments on the soul (although Descartes refers to 'soul' as 'mind') and the separation of the body, or distinct (and unrelated) substance, thus the emergence of the arguments for the existence of both the material and the immaterial, or the physical and non-physical. Today the debate continues in contemporary circles within philosophy and psychology. Proponents of dualism include philosophers such as Richard Swinburne (b. 1934), Sir John Eccles (1903–1997) and Wilder Penfield (1891–1976). However, different uses of language are evident in all of the contemporary theorists' arguments; this is clearly seen in examples of how the term 'mind' has been replaced with the terms 'brain' and 'consciousness'. Furthermore, it would appear that despite its dwindling advocacy these contemporary arguments still carry weight and continue to contribute to both philosophical enquiry, particularly in the domains of the philosophy of mind, and developments within cognitive psychology.

John Locke (1632–1704), the seventeenth-century English philosopher proposed a different form of learning and acquisition of knowledge; he argued for the mind as a *tabula rasa* — a blank slate — where all sensory experience

[10] Atkinson, p. 663.

and interactions with the world enabled knowledge and understanding.[11] Locke's arguments for sensory experience are considered an empiricist approach or *a posteriori* learning. Locke's ideas gave rise to the birth of associationist psychology. Associationists[12] denied 'inborn ideas'[13] or that ideas are innate but rather that all knowledge came through the senses and then became associated through the principles of similarity, contrast and contiguity.[14]

Both these traditions are still apparent in contemporary psychology although many psychologists and theorists would consider that acquiring knowledge is not a case of 'either/or' but rather a combination of both. However, the question of whether nativism or empiricism is the most dominant remains open, particularly in the field of cognitive psychology.

5.2 The Origins of Psychology

As we can see, psychology, like many other disciplines, has its roots in philosophy. During the course of its earlier work, philosophy underpinned psychology's foundations, not just as a study of humanity but also later as a science. Psychology's inception can be seen in the early stages of American psychology, starting with William James (1842–1910).

[11] Ibid.
[12] Other philosophers who support the idea that mental processes operate by the association of one mental state with its previous mental state, otherwise known as associationism, include: David Hume (1711-1776), David Hartley (1705-1757), John Stuart Mill (1806-1873) and Alexander Bain (1818-1903).
[13] Atkinson, p. 663.
[14] Ibid.

The science of psychology, or rather 'psychology as an academic discipline',[15] was founded by Wilhelm Wundt in 1879 when Wundt established the first formal psychological laboratory at the University of Leipzig in Germany.[16] Fundamental to Wundt's approach to psychology was the method of introspection, an influence that I suggest was inherited from philosophy. (Traces of introspection can be seen in the work of Plato and Descartes where they are interested in looking 'inward', espousing a form of introspection.) However, within a short space of time Wundt had developed this method of introspection further and introduced the idea of experiments: he wanted to initiate self-observations in order to study consciousness. Wundt's experiments included modifying a stimulus that would alter the self-observation of the subject and, therefore, their introspection; this in turn would allow Wundt to determine how stimulus, or any other changes to physical conditions, could alter consciousness.[17]

The foundations of psychology are indebted to Wundt's contribution and many eminent psychologists were later trained in Wundt's laboratory. A student of Wundt's, G. Stanley Hall (1844–1924), established the first formal psychology laboratory in the United States at the John Hopkins University in 1883. Furthermore, Sigmund Freud, the father of psychoanalysis, was introduced first in the United States by Hall.[18]

[15] Ibid.
[16] Ibid.
[17] Ibid.
[18] Ibid., p. 664.

5.3 PARADIGMS IN PSYCHOLOGY

Structuralism, as a branch of psychology, was first introduced by E.B. Titchener (1867– 927), another student of Wundt's. Titchener was interested in describing mental structures, and showing how mental experience could be understood as a combination of events, or its internal contents. However, William James found this form of description too analytical and, therefore, proposed that there should be less emphasis on the components or structure of consciousness and Titchener's analytical quest; he proposed that there should be more emphasis instead on the character of consciousness and its relation to the environment.[19] James's study of the role of consciousness in the environment and its interaction led him to also question its function: it was from here that his investigations into the function of consciousness emerged (in contrast to Titchener's *structure* of consciousness). This in turn led to another branch of psychology — *functionalism* — which focused on the acts and function of the mind rather than any internal structures, including introspection or any contents.[20] Advocates of functionalism include William James and John Dewey (1859–1952). Both structuralism and functionalism were important paradigms in the early development of psychology. However, while structuralism and functionalism continued to focus on consciousness, other paradigms within psychology started to emerge, namely, behaviourism, gestalt psychology and psychoanalysis.[21]

[19] Ibid., p. 665.
[20] Ibid.
[21] Ibid.

As discussed in chapter four when we examined the potential problem for philosophy and psychology in relation to misinterpreting Wittgenstein as a behaviourist, *psychological* or *methodological behaviourism* is anchored firmly in S-R relations. The behaviour of the subject is measured in what is considered to be 'objective' and 'observable' responses to stimulus as indicated in the subject's behaviour.[22] However, by contrast, analytical or logical behaviourism is a philosophical account of behaviourism and is measured in the terms and concepts that are used in describing a subject's behaviour.

The school of (psychological) behaviourism was founded by John B. Watson (1878–1958). Following on from structuralism and functionalism where both paradigms placed an emphasis on 'introspection', Watson decided to challenge the very thing the previous two branches of psychology had founded their proposed theories on. Instead Watson argued for something that was overt and objective — behaviour. He considered that as behaviour was public and introspection was private and, therefore, unavailable to any form of psychological analysis, behaviour was the most reliable and scientific way of studying the mind, its relation to the environment and the person themselves, all as a central and empirical study of psychology.[23] From this position of 'behaviour' or 'behaviourism' the stimulus-response (S-R) approach arose. This new approach allowed for an analysis of stimulus input and response output of subjects. This S-R reaction analysis sat comfortably with conditioning, following the work of the Russian psychologist Ivan Pavlov

[22] Ibid., p. 666.
[23] Ibid.

(1849–1936). Watson argued that almost all behaviour is a result of conditioning and that the environment helps shape our behaviour through reinforcement.[24]

Other approaches in psychology were emerging too. *Gestalt psychology*, literally translated as 'configuration', originated in Germany with Max Wertheimer (1880–1943) who was interested with the organisation of mental processing.[25] While Gestalt psychologists were reluctant to subscribe and subsequently agree to the more introspective and subjective form of psychology, they also rejected behaviourism. Gestalt psychologists were interested in 'motion' and 'perception' and an individual's patterns of organisation of 'experience'; they considered that experiences or perceptions were relevant only when in relation to other aspects of the whole rather than individual parts.[26] This type of psychology was considered a form of phenomenology:

> A philosophical doctrine that advocates that the scientific study of immediate experience be the basis of psychology […] the focus is on events, occurrences, happenings, etc. as one experiences them, with a minimum of regard for the external, physical reality and for the so-called 'scientific biases' of the natural sciences.[27]

[24] Ibid.
[25] Ibid.
[26] Ibid., p. 663.
[27] Reber, p. 533.

Gestalt psychology, with its emphasis on perception-centred experiences, can also be considered as one of the strongest foundations to cognitive psychology.[28]

5.4 The Nature of Concepts

There are many issues that surround the nature of concepts, for example, their origin, how and where they come from psychologically, and their relation to language and language learning.[29] Murphy and Medin propose that 'concepts are coherent to the extent that they fit people's background knowledge or naïve theories about the world'.[30] Concepts have always been of central interest to philosophy and psychology and continue to further debate in certain areas, e.g. what concepts represent *exactly*, such as external representations, mental representations or representational theories of mind.[31] Furthermore, as Murphy states 'the current surge of interest in people's concepts has provided much information about conceptual structure and content.'[32]

However, according to Rosch (1999), 'concepts are the natural bridge between mind and world to such an extent that they require us to change what we think of as mind and what we think of as world.'[33] Rosch's statement resonates of how we must see concepts in varying ways but with specific

[28] Atkinson, p. 667.
[29] Katherine Nelson, '"Concept" is a Useful Concept in Developmental Research', *Journal of Theoretical and Philosophical Psychology*, 31 (2011), 96-101 (p. 96).
[30] Gregory L. Murphy and Douglas L. Medin, 'The Role of Theories in Conceptual Coherence', *Psychological Review*, 92 (1985), 289-316 (p. 289).
[31] Mark H. Bickhard, 'On the Concept of Concept', *Journal of Theoretical and Philosophical Psychology*, 31 (2011), pp. 102-105 (102-103).
[32] Murphy and Medin, 'Conceptual Coherence', p. 289.
[33] Rosch, 'Reclaiming Concepts', p. 61.

reference to how concepts and the mind and body and world are all related. This *is* the embodied cognition thesis.

Murphy and Medin suggest that 'people's theories of the world embody conceptual knowledge and that their conceptual organization is partly represented in their theories.'[34] Concepts have many purposes including enabling us to classify experience and further knowledge concerning any entity which may fall into them, and should always 'be studied in the context of a system of interrelated functions'.[35] For some, they are the mental representation of a category.[36] Concepts enable us to group things together, so that 'instances of a category all have something in common. Thus concepts somehow specify category membership.'[37] Some studies, such as Rosch's[38] and Nunez,[39] for example, would suggest, as Pinker notes, that 'to understand mental categories is to understand much of human reasoning'[40] while other research would suggest that categories have an independent existence in the world while they 'serve as building blocks for human thought and behaviour'.[41]

[34] Murphy and Medin, 'Conceptual Coherence', pp. 289-290.
[35] Karen O. Solomon, Douglas L. Medin and Elizabeth Lynch, 'Concepts Do More than Categorize', *Trends in Cognitive Science*, 3 (1999), 99-105 (p. 99).
[36] Some consider that mental representation is the concept and that it is the mental representation that is ultimately responsible for behaviour with regard to the outside world. There are assuredly things in the world which are chairs, but the concept of chair is 'in the head', not the outside world. See Reber, p.140.
[37] Harley, p. 276.
[38] Rosch, 'Reclaiming Concepts', pp. 61-78.
[39] Rafael Nunez, 'Could the Future Taste Purple? Reclaiming Mind, Body and Cognition', in *Reclaiming Cognition – the Primacy of Action, Intention and Emotion,* ed. by Rafael Nunez and Walter J. Freeman (UK: Imprint Academic, 1999), pp. 41-60.
[40] Pinker, *Words and Rules – The Ingredients of Language,* p. 270.
[41] Medin, 'Concepts and Conceptual Structure', p. 1469.

For Pinker, '(C)oncepts in the mind pick out categories in the world – and concepts must meet certain conditions for membership of a category'[42] thus categories refer to a group of instances that are placed into an equivalence or membership class while concepts are the mental representation used to place each instance into the category.[43] I argue in Chapters 5 and 6 that when concepts are participatory in Wittgenstein's language-game they allow us to make sense of the world. Let us consider the functions of concepts in order to understand their role more clearly, particularly in relation to 'the mind' (or, as we shall see later in this chapter, psychology's new term since the cognitive revolution 'cognition'). Solomon describes the function of concepts as:

(1) *Classification* or *Categorization*: concepts contain information that can assist in classifying entities.

(2) *Understanding* and *Explanation*: concepts allow the world to be segmented or divided up into meaningful chunks so that we can understand, make sense and explain the world that we experience.

(3) *Prediction*: once knowledge and understanding of a concept is in place it becomes easier to make predictions about its future intentions and behaviour.

(4) *Reasoning*: concepts allow us to reason out new, unfamiliar and possible situations.

(5) *Communication*: finally, concepts are centrally involved in communication and allow us to make sense of the world and share information without necessarily having to experience the situation itself.[44]

[42] Pinker, *Words and Rules – The Ingredients of Language*, p. 270.
[43] Ibid.
[44] Solomon, pp. 99-100.

Concepts also support learning, thus:

> Encountering a member of a category with a novel property […] can result in that novel property being incorporated into the conceptual representation.[45]

How concepts are experienced is what cognitive psychology refer to as a top-down process (as opposed to a bottom-up process) which is knowledge driven, and where the recognition of the concept is influenced from our beliefs, prior experiences and current expectations combined with incoming data. Conceptual combination can be seen as the glue of our cognitive system facilitating a range of functions which are integral to our mental life as we interpret, understand and structure the world.[46] Similarly, conceptual combination helps facilitate problem solving: concepts (and categories) also allow us to engage in the social process of communication.

According to Rosch, 'psychology inherited a particular view of categories from the history of philosophy. To serve as a proper essentialist basis for knowledge, categories were required to:

(1) be exact, not vague – i.e. have clearly defined boundaries;

(2) have attributes in common which were necessary and sufficient conditions for membership of the category.

From these it followed that:

[45] Ibid., p. 99.
[46] Murphy, *The Big Book of Concepts*, p. 1.

(3) all members of a category must be equally good with regard to membership; either they have the necessary common features or they don't. Categories and concepts were thus seen as logical sets.'[47]

This is the foundation on which the defining attribute theory was built, also referred to as the classical view or Aristotelian categories. Gottlob Frege also maintained that a concept can be characterised by a set of defining attributes (or semantic features). Frege clarified the distinction between a concept's intension and its extension as discussed in Chapter 1. Eysenck and Keane describe it as:

> The intension of a concept consists of a set of attributes that define what it is to be a member of the concept and the extension is the set of entities that are members of the concept.[48]

Wittgenstein had speculated that categories were structured by what he called 'family resemblances', which is considered as one of Wittgenstein's central concepts as we have seen in Chapter 2. Rosch showed that what philosophers considered as a matter for 'a priori speculation' could, in fact, be demonstrated empirically.[49] Characterising 'family resemblances' as perceived similarities between representative and nonrepresentative members of categories,[50] Rosch showed through her experiments that there was a correlation between family resemblances and numerical ratings of the best

[47] Rosch, 'Reclaiming Concepts', p. 64.
[48] Eysenck and Keane, p. 285.
[49] Lakoff, *Women, Fire and Dangerous Things – What Categories Reveal about the Mind,* p. 42.
[50] Ibid.

examples.[51] The prototype theory is attributed as part of Rosch's seminal work, and is also commonly accredited to Ludwig Wittgenstein. Rosch brought Wittgenstein's ideas into psychology by showing concepts and family resemblance categories rather than classical categories.[52] Rosch's work here is a prime example of where a philosophical method (although some might argue that it is a philosophical presupposition rather than a method) has been used in the contemporary foundations of cognitive psychology.

In Rosch's article *Reclaiming Concepts* she also acknowledges that the theories and approaches to understanding concepts and concept development grew out of the philosophical and psychological traditions. However, she continues to state that:

> Although none originated in the cognitivist position per se, cognitivism has adopted or critiqued these views at length since it is in need of a theory of its central building blocks.[53]

Rosch also comments on gradients of membership judgements and how they apply to various kinds of categories, for example:

> political categories such as *democracy*, formal categories that have classical definitions such as *odd number*, and ad hoc, goal-derived categories such as *things to take out of the house in a fire*.[54]

[51] Ibid.
[52] Pinker, *Words and Rules – The Ingredients of Language*, p. 272. Thus this *discontinuity* between contemporary psychologists and traditional Cartesian or Aristotelian classical approaches finds its roots in post-Humean psycho-analytic approaches to the mind as well as the influence of Wittgenstein.
[53] Rosch, 'Reclaiming Concepts', p. 63.
[54] Ibid., p. 66.

(According to Barsalou, ad hoc, goal-derived categories are 'created spontaneously for use in specialized contexts'[55] and differ from natural categories in the sense that '*ad hoc* categories violate the correlational structure of the environment and are not well established in memory.'[56]) We can also see how Rosch's later work in the late 1990s is a re-focus of how we might 'reclaim concepts' hence the title of her paper. Wittgenstein's theme of how concepts are situated in any language-game, and how we interact with a particular context or environment in order to understand the concept, resonates through Rosch's later work.

5.5 The Defining Attribute View or the Definitional View

> Research and theory on categorization and conceptual structure have recently undergone two major shifts. The first shift is from the assumption that concepts have defining properties (the classical view) to the idea that concept representations may be based on properties that are only characteristic or typical of category examples (the probabilistic view).[57]

However, the defining attribute approach, is often considered less of a single, unified theory and more of a collection of various but related views on concept ontology and the defining features that they are required to have, namely necessary and sufficient conditions.[58]

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[55] Lawrence W. Barsalou, 'Ad Hoc Categories', *Memory and Cognition,* 11 (1983), 211-227 (p. 211).
[56] Ibid.
[57] Medin, 'Concepts and Conceptual Structure', p. 1469.
[58] Slaney and Racine, p. 74.

The definitional view is also referred to as the classical view of Aristotle's categories which 'emphasised logic and definitions as the basis of knowledge.'[59] As stated earlier in this chapter, Gottlob Frege continued this view and maintained that a concept can be characterised by a set of defining attributes (or semantic features). Although an outstanding contribution of its time to the inception and further development of cognitive psychology, too many weaknesses have been exposed in this theory and, therefore, it is now regarded as inadequate to explain the acquisition of a concept. The definitional view's main limitation was soon exposed as those of features that were defining of a concept, and as a consequent non-defining features were ignored. As we know this limitation of 'non-defining' features is the basis of Wittgenstein's concept of family resemblance. The limitations of the defining attribute theory as proposed by cognitive psychology are more clearly seen when we explore Wittgenstein's language-game as the context in which concepts are participatory, or concepts in action, in Chapter 6.

'The definition *is* the concept according to the classical view.'[60] I propose that in general, we agree that similar objects belong to one type of category and dissimilar objects belong to another. This distinction facilitates the separation of a class of objects, as defined by their characteristics, attributes or shared properties, from one another. According to the classical view,

[59] Pinker, *Words and Rules – The Ingredients of Language*, p. 271.
[60] Murphy, *The Big Book of Concepts*, p. 15.

concepts have rigid boundaries: a concept either does or does not meet the definition.[61] Murphy states that first:

> the defining attribute theory claims that concepts are mentally represented as definitions. A definition provides characteristics that are a) necessary and b) jointly sufficient for membership in the category. Secondly, that every object either belongs or does not belong to the category; and thirdly, that it does not make any distinction between category members.[62]

The defining attribute view maintains that an object must have all the necessary attributes to determine the concept, and that no other attributes enter into determining whether the object concerned is an instance or example of that particular concept.[63] This theory or viewpoint predicts that concepts should delineate various objects by distinct classes and, therefore, the boundaries between the different categories must be distinct and well defined.

Although some concepts may fit the classical view of definition, such as a triangle (whose characteristics include a closed geometric form with three sides and interior angles of 180 degrees),[64] most concepts do not, such as 'fruit' or 'furniture' which would be considered common categories;[65] I would argue that it is difficult to specifically name one defining feature that is a prerequisite for category membership to the classical view of concepts. Similarly, Murphy[66] gives a very good example of the concept of dog when trying to explain its defining features. He states that if our concept of dog is a definition, why then

[61] Medin, 'Concepts and Conceptual Structure', p. 1470.
[62] Murphy, *The Big Book of Concepts*, p. 15.
[63] Medin, 'Concepts and Conceptual Structure', p. 1470.
[64] Ibid.
[65] Barsalou, 'Ad Hoc Categories', p. 211.
[66] Murphy, *The Big Book of Concepts*, p. 18.

are we so bad at saying what it is even when we know the concept? Why is it that we can use this definition for identifying dogs and for thinking about them, but the properties we give for dogs are not definitional? He maintains that the classical view has considerable trouble explaining this.[67] Furthermore, as Slaney and Racine argue:

> The concept dog may be defined in terms of other concepts such as wagging tail, barks, fetches stick, has four legs, and so forth. However, these features will not be equally weighted by virtue of the fact that some are more prototypical of dogs than others, for example, we are more likely to recognise an object as a dog by virtue of observing that the object has a wagging tail and barks than that it as four legs, is furry, and so on.[68]

Murphy also argues that there are empirical problems with the classical view which are even greater than its theoretical ones.[69] He states that 'the neatness envisioned by the classical view does not seem to be characteristic of human concepts.'[70] He continues to explain that in real life (and I would also argue in 'real time' as proposed by Wilson[71] in her description of the embodied cognition thesis) that many objects do not obviously belong to a particular category.[72] He suggests that there is doubt expressed by some people in relation to:

[67] Ibid.
[68] Slaney and Racine, pp. 73-89 (p. 75).
[69] Murphy, *The Big Book of Concepts*, p. 19.
[70] Ibid.
[71] Margaret Wilson, 'Six Views of Embodied Cognition', *Psychonomic Bulletin & Review*, 9 (2002), 625-636 (p. 626).
[72] Murphy, *The Big Book of Concepts*, p. 19.

> whether 'a tomato is a vegetable or a fruit […] This uncertainty gets even worse when more contentious categories in domains such as personality or aesthetics are considered. Is *Sergeant Pepper's Lonely Hearts Club Band* a work of art? Is your neighbour just shy or stuck up? These kinds of categorizations are often problematic.[73]

Another limitation was identified by Mervis and Rosch (1975). Rosch[74] states that other research challenges directly the requirement of the classical view that categories have defining features. Mervis and Rosch (1975) found that when subjects are asked to list attributes for category members, many categories show up with few, or sometimes no attributes at all in common. Attributes appeared to have Wittgenstein's family resemblance only rather than any necessary and sufficient conditions or structure.[75]

The classical view also failed to provide any satisfactory explanation for three main issues: first, it has been difficult to find definitions for most natural categories, and even more challenging to find definitions that are 'plausible psychological representations'.[76] Secondly, 'the phenomena of typicality and unclear membership are both unpredicted by the classical view.'[77] Thirdly, the existence of intransitive category decisions, such as, for instance, 'car seats are chairs; chairs are furniture; but car seats are not furniture',[78] is very difficult to explain and, therefore, understand within the classical approach. Furthermore, other problems of the classical view were raised by Medin and Smith (1981) in *Categories and Concepts*. They argued

[73] Ibid., p. 20.
[74] Rosch, 'Reclaiming Concepts', p. 65.
[75] Ibid., pp. 66-67.
[76] Murphy, *The Big Book of Concepts*, p. 38.
[77] Ibid.
[78] Ibid.

that not only was there a failure to specify specific defining features for most lexical concepts (i.e. those reflected in our language[79]) they also cite the 'goodness of example effects' where some examples are better category members than others.[80] However, Smith, Rips and Medin[81] argue that there are no specific boundaries, or sharp boundaries, between the core properties of a concept and the properties used for purposes of identification.[82] Finally, Medin argues that there are, what he refers to as, 'unclear cases' where it is difficult to know whether an example belongs to one category or another, for example, should a rug belong to the category of furniture?[83] The defining view fails to select some defining feature sets as more appropriate than others.[84]

Although the classical view is now considered redundant and inadequate in terms of explaining how concepts are formed, it did nonetheless at the time of its inception, and in the very early days of cognitive psychology, provide some answers to concept and category development. For example, the work of Bruner et al. (1956) assumes this theory and its instantiation as a semantic network model. Similarly, Collins and Quillian (1969) used sentence-verification tasks to find support for their model of the theory.[85] Furthermore, there have been a number of variations of the defining attribute theory proposed: an example of this type of modification would be the feature

[79] Medin, 'Concepts and Conceptual Structure', p. 1470.
[80] Ibid.
[81] Edward E. Smith, Lance J. Rips and Douglas Medin, 'A Psychological Approach to Concepts: Comments on Rey's "Concepts and Stereotypes"', *Cognition*, 17 (1984), 265-274.
[82] Medin, 'Concepts and Conceptual Structure', p. 1470.
[83] Ibid.
[84] Murphy and Medin, 'The Role of Theories in Conceptual Coherence', p. 294.
[85] Eysenck and Keane, p. 287.

comparison theory which not only proposes (and presupposes) that there are defining attributes but also characteristic attributes.[86]

5.6 The Prototype View

The probabilistic view, also known as the prototype view, suggests that we assume the 'average' of an entity, that concepts have properties that are typical of category members but not necessarily true of all members, therefore the term 'probabilistic view': attributes may only be probable, typical or characteristic, and not necessary and sufficient as in the defining attribute theory.[87] The prototype can be seen as the best description of a category: what we are looking for is a commonality across items and the 'average' to best represent that particular concept. However, the probabilistic view, although widely accepted as one of the strongest ways of categorising concepts, has serious implications in terms of how information around categories is organised; first, some category members may exhibit more characteristic features than other category members and, therefore, may be understood as being more 'typical'; secondly, there is the issue of category boundaries and the grey area that is considered by many as 'fuzzy': non-members of a category may exhibit some or as many characteristic properties of a particular category as do some members. Thirdly, familiarity with a category cannot be aligned with determining what the defining features actually are because there may not be any.[88]

[86] Ibid.
[87] Murphy and Medin, 'The Role of Theories in Conceptual Coherence', p. 294.
[88] Medin, 'Concepts and Conceptual Structure', p. 1471.

As stated previously, the prototype theory is attributed to the work of Rosch, while her use of the term family resemblance is accredited to Wittgenstein. (Rosch who was also influenced by Zadeh and Lakoff, whom she cites in several of her papers, established cognitive research programs to demonstrate pivotal issues on concepts and categories such as centrality, family resemblance and basic-level categorization.[89]) Similar to Wittgenstein taking a Socratic approach when challenging Augustine in his definition of terms, Aristotelian categories were also challenged by him in the *Investigations* when he refers to 'family resemblance'; however, Rosch brought Wittgenstein's ideas into cognitive psychology by 'dramatically changing the view of concepts'.[90] As we know, Wittgenstein's term 'family resemblance' is used to describe how concepts share a commonality or share features and, therefore, there is no defining set of features to be found among category members. The prototype theory proposes that we look for commonality among objects, and where all the characteristic features of a category are represented, this is referred to as a prototype. However, Medin asks that if categories, of any kind, are not represented in terms of a definition, then 'what form do our mental representations take?'[91] It would appear that there is a very 'natural interpretation'[92] of organizing fuzzy categories; 'probabilistic view categories are organized according to a *family resemblance* principle.'[93]

[89] Radim Belohlavek and others, 'Concepts and Fuzzy Sets: Misunderstandings, Misconceptions, and Oversights', *International Journal of Approximate Reasoning*, 51 (2009), 23-34 (p. 24).
[90] Ibid.
[91] Medin, 'Concepts and Conceptual Structure', p. 1471.
[92] Ibid.
[93] Ibid.

When classifying new objects, a prototype process is initiated: the new object is compared to the prototype. If there are sufficient similarities to the prototype, then the object is classified as a member of that particular category. The prototype becomes the summary representation for a category[94] and, therefore, no specific object need have all the defining properties that are represented by the prototype. An object must have prototype properties and also core properties in order to become a member of the concept that is being categorised. For example, a bachelor may present the prototype properties of being in his forties and unmarried, while the core properties presented for this example would include 'male' and 'adult'. This 'bachelor' prototype concept is also specifically defined and, therefore, easily interpreted, understood, used and referred to where appropriate.[95] Other prototype concepts such as 'fruit' or 'fish' are not considered as well defined concepts: the core genes or attributes of 'fruit' or 'fish' are not as easily identifiable as that of the example presented in the concept of 'bachelor' and, therefore, concepts such as 'fish' or 'mammal' or 'bird' are referred to as 'fuzzy' concepts or concepts with 'fuzzy' boundaries. It is interesting to note that Belohlavek et al. suggest that conceptual categories, 'which are mentally represented as concepts'[96] seldom, if ever, have sharp boundaries and with no 'borderline cases'.[97] Furthermore, the task of deciding whether an object is an instance of a fuzzy concept with unclear boundaries often involves using inference and prediction, and assessing its similarity to the concept's prototype. According to Pinker, categories of the

[94] Ibid.
[95] Slaney and Racine, p. 74.
[96] Belohlavek, p. 23.
[97] Ibid.

mind often have fuzzy boundaries, and almost all everyday categories that we encounter regularly illustrate the presence of Wittgenstein's criss-crossing and over-lapping of features, a family resemblance.[98] Pinker states that people are comfortable that everyday concepts that they encounter will have 'better and worse members'.[99]

Research in the area of prototype theory has shown that typicality of an object influences its categorisation. For example, studies show that people rate 'robin' as more typical of a bird than an 'ostrich' because it presents the prototype property of 'flying'.[100] Similarly, people rate 'red' as a more typical prototype property of the object apple as opposed to the property 'green', although I would argue that this is culture-dependent. However, Rosch argues that:

> Colour categories do not have any obviously analysable criterial attributes, formal structure, or definite boundaries and they have an internal structure graded in terms of how exemplary of its category people judge a colour to be.[101]

The issue of typicality also affects how we think when we encounter a concept. For example, if someone makes the statement 'an animal has been knocked down on the road' we are generally more likely to think of a fox or badger rather than a pig or cow.

[98] Pinker, *Words and Rules – The Ingredients of Language*, p. 273.
[99] Ibid., p. 274.
[100] Medin, 'Concepts and Conceptual Structure', p. 1470.
[101] Rosch, 'Reclaiming Concepts', p. 65.

Similar to the defining attribute theory, there were a number of limitations and weaknesses exposed in prototype theory which clearly could not be overcome. Murphy makes the point that the prototype view has not been 'undergoing much theoretical development' either.[102] He claims that many comments and descriptions about prototypes are 'somewhat vague, making it unclear exactly what the writer is referring to — a single best example? a feature list? if a feature list, determined how?'[103] He states that this lack of specificity in much of the writings about prototype theory has encouraged its critics to develop their own prototype models.[104] For Murphy, many theorists assume that the prototype is the single best example, rather than a list of features or attributes, even though these models may have different and varying properties, for real-life, in real-time, categories.[105] Another problem was identified by the cognitive psychologist, Barsalou.[106] He studied categories such as *things to take on a camping trip, foods not to eat on a diet, clothes to wear in the snow,* etc., and showed that such categories, among their other properties and attributes, in contrast to the prototype view, do not show family resemblances among their members.[107] Barsalau found that goal-derived categories, or 'categories to achieve goals'[108], can show the same typicality effects as other categories but the basis for these typicality effects is not similarity to a prototype but rather to an ideal.[109]

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[102] Murphy, *The Big Book of Concepts*, p. 45.
[103] Ibid.
[104] Ibid.
[105] Ibid.
[106] Barsalou, 'Ad Hoc Categories', Memory and Cognition, pp. 211-227.
[107] Lakoff, *Women, Fire and Dangerous Things – What Categories Reveal about the Mind*, p. 14.
[108] Barsalou, 'Ad Hoc Categories', p. 211.
[109] Medin, 'Concepts and Conceptual Structure', p. 1472.

Rosch states that 'a very important finding about prototypes and graded structure is how sensitive they are to context'[110] while Medin argues that 'prototype theories treat concepts as context-dependent.'[111] This, as we know, is what Wittgenstein advocates for too: that concepts are part of the context and are participatory. Rosch gives the example of:

> while a dog or cat might be given as prototypical pet animals, lion or elephant are more likely to be given as prototypical circus animals. In a default context (no context specified), coffee or tea or cola might be listed as a typical beverage, but wine is more likely to be selected in the context of a dinner party.[112]

While she is correct when citing examples of prototypical pet animals or circus animals, Wittgenstein would not agree with her when she refers to a default context. For Wittgenstein there must always be a context: the environment in which the concept and the individual engage are key to participating in any language-game.

Rosch also outlines in *Reclaiming Concepts* the evidence for graded structure and prototypes violating the tenets of the classical view (and of strict working cognitivism, although that is not of importance for the discussion here). She states that:

> (1) Graded structure categories do not have clear-cut boundaries. This is not simply an issue of the probability that items will be classified as members of the category since for many categories, such as colour, subjects will assert that some items are genuinely between categories;

[110] Rosch, 'Reclaiming Concepts', p. 67.
[111] Medin, 'Concepts and Conceptual Structure', p. 1471.
[112] Rosch, 'Reclaiming Concepts', p. 67.

> (2) Many categories have no, and no category need have any, necessary and sufficient attributes which make an item a member of the category […];
> (3) Items in a category are not equivalent with respect to membership but rather possess gradations of membership. Again this is not merely a matter of probability as people will assert directly that one member of a category is a better example of the category than another […];
> (4) Graded structures are not formal systems nor are any items in a graded structure necessarily implicatory or productive of any other items in the structure, nor need anything in a graded structure fill the role of substitutable strings of symbols […];
> (5) Graded structures and prototypes, although they have default contexts, are otherwise flexible with respect to the ever-varying contexts of life situations […].[113]

5.7 THE EXEMPLAR VIEW

> The exemplar view agrees with the probabilistic view in holding that concepts need not have criterial properties and, further, claims that categories may be represented by their individual exemplars rather than by some unitary description of the class as a whole.[114]

They suggest an alternative way of representing prototype categories and concepts. Rather than a summary representation, they argue particular entities that best represent the concept.

The exemplar view suggests that people store individual exemplars of categories and as a result can then classify new concepts accordingly to their stored schemata of exemplar types. Some of the exemplar types and models that have received the most attention suggest that the examples that are most similar to the item to be classified have the greatest influence on

[113] Rosch, 'Reclaiming Concepts', pp. 68-69.
[114] Murphy and Medin, 'The Role of Theories in Conceptual Coherence', p. 295.

categorisation.[115] However, Rosch proposes that only the most typical exemplars are activated as category representation in memory.[116] Furthermore, Murphy asks how do we define the term exemplar, and what constitutes learning or storing an exemplar? Storing exemplars in memory is imperative; encoding the exemplar's category is required for it to influence categorization.[117]

Medin asks the question why should exemplar models be considered better or more efficient than prototype models?[118] In general, it would appear, because it allows for prediction and inference, which are two of the principle functions of concepts, and this, in turn, enables classification. However, as Medin suggests, there is a central problem with this notion of similarity when using exemplar models: 'Do things belong in the same category because they are similar, or do they seem similar because they are in the same category?'[119]

While the probabilistic views of concepts (the prototype and exemplar view) were developed from the ashes of the defining attribute approach, the knowledge approach was developed more in response to these two probabilistic views of concept development, conceptual coherence and representation.

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[115] Medin, 'Concepts and Conceptual Structure', p. 1473.
[116] Timothy Verbeemen and others, 'Beyond Exemplars and Prototypes as Memory Representations of Natural Concepts: A Clustering Approach', *Journal of Memory and Language*, 56 (2007), 537-554 (p. 538).
[117] Murphy, *The Big Book of Concepts*, p. 58.
[118] Medin, 'Concepts and Conceptual Structure', p. 1473.
[119] Ibid.

5.8 The Knowledge Approach or Theory View of Concepts

'Something is needed to give concepts life, coherence, and meaning.'[120] The knowledge approach suggests that we use all our prior knowledge to learn new concepts, but the role of the context is also dependent here. Here, once again, I draw the reader's attention to the Wittgensteinian characteristic of the context and its importance. This would also suggest that rather than depending on the individual to make judgements on how best to categorise, inference-based processing could be more effective, where the individual is relying on an intuitive approach and their understanding of the world which they are experiencing.[121]

> Proponents of the knowledge view argue that:
>
> Similarity is not powerful enough to account for conceptual coherence. What guides our categorization is knowledge of theories about the world. Again, this view is compatible with ill-defined boundaries of concepts.[122]

The basis from which the knowledge approach was developed takes the form that concepts are part of our general knowledge about the world, and as such, concepts are not learned as separate entities which are objective and isolated from the rest of the world but rather concepts are learned as an integrated part of our experience and understanding of the world.[123] Again we see a very distinct Wittgensteinian trait here: the meaning of the word is its use and arises from the interaction between the individual, the environment and the concept.

[120] Ibid., p. 1474.
[121] Ibid., p. 1473.
[122] Belohlavek, p. 24.
[123] Murphy, *The Big Book of Concepts*, p. 60.

The social, communal and contextual behaviour of language enables us to participate and actively engage in communication and, therefore, a language-game where we can engage in using different concepts. Wittgenstein claims that:

> it is difficult to see that what is at issue is the fixing of concepts. A *concept* forces itself on one. (This is what you must not forget.).[124]

Similarly, Wargo argues that:

> The connection between something you put on your 'head', for example, (hat) and the word for it used in your community can only be a learned social convention.[125]

Furthermore, I would argue that how we use a word, and in Wargo's example here the word 'hat', is also culture-dependent.

When concepts are learned, the knowledge approach suggests that we integrate this information into our existing knowledge of a particular domain and consequently there is a development for us of both knowledge and experience. However, although concepts are influenced by what we already know, new concepts can affect general knowledge and, therefore, how we experience the world. The knowledge approach invites us to use inference and prediction, just like we do when using the exemplar model. This enables us to develop sensible and intelligent categories in order that we can make sense of our world.[126] However, Medin suggests that we should address the question of

[124] Wittgenstein, *Philosophical Investigations*, p. 174.
[125] Wargo, p. 18.
[126] Murphy, *The Big Book of Concepts*, pp. 60-61.

'why we have the categories we have or why categories are sensible.'[127] He gives the example of the category comprising 'children, money, photo albums, and pets'.[128] He suggests that out of any specific context this category seems strange.[129] However, if we said that the category represented 'things to take out of one's house in case of a fire,' the category becomes meaningful and sensible.[130]

While there are limitations with the prototype view, exemplar view and the knowledge approach, none of them suffer from the problems of the classical view. All of them suggest that categories will have gradations of typicality and that there will always be borderline cases or fuzzy boundaries.[131] Unlike the later revisions of the classical view (which has not been discussed in this chapter), these theories and approaches claim category fuzziness as an integral part of conceptual processing, 'rather than an unhappy influence of something that is not the 'true' concept. This is because similarity of items is inherently continuous'.[132]

Murphy suggests that a theory of concepts should be proto-type based, that is, 'it must be a description of an entire concept, with its typical features.'[133] Furthermore, he argues that there is a place for an integrated

[127] Medin, 'Concepts and Conceptual Structure', p. 1474.
[128] Ibid.
[129] Ibid., p. 1475.
[130] Barsalou, 'Ad Hoc Categories', p. 214.
[131] Murphy, *The Big Book of Concepts*, p. 64.
[132] Ibid.
[133] Ibid., p. 488.

approach to viewing concepts, combining the prototype and the knowledge approach in the form that:

> Rather than considering the two parts as independent contributors, I suspect that we will have to consider prototypes as being integrated with and influenced by the knowledge.[134]

This, we can see, is already occurring in any language-game regardless of the context.

5.9 Other Considerations: Exemplar Strategy, Hypothesis Testing Strategy, and Memory

5.9.1 Exemplar Strategy

The exemplar strategy is one of the easiest ways a child can learn a concept (while adults use this strategy also to acquire more novel and abstract concepts). For example, with the concept 'furniture' children are better at recognising the typical examples of this particular concept such as 'dining room table', 'coffee table', 'rocking chair' and 'settee', and appear to have difficulty in recognising and categorising the more atypical exemplars of the concept 'furniture', such as a 'bedside locker', 'dressing table', 'coat stand' and 'lamp'. However, although there are some complexities for children when acquiring the more atypical exemplars, it still remains as one of the most widely used forms of concept formation.

[134] Ibid.

5.9.2 Hypothesis Testing Strategy

Another way of acquiring concepts is the Hypothesis Testing Strategy. This occurs when a particular hypothesis is tested before determining whether an instance (or a characteristic or feature) belongs to a concept. For example, looking at known properties of concepts, such as fruit being sweet, or lemons being sour, and then hypothesising that this known common attribute is what characterises the concept. From here we can hypothesise about a new and different concept when it is encountered and, thus, experienced. This form of hypothesising about new concepts that we encounter either allows us to continue this testing method and, therefore, add new concepts to our existing knowledge or it shows us that we are incorrect with our hypothesis and, therefore, need more information on the characteristics and common features of the concept in question, in this case, the instance of 'fruit' or 'lemons'. However, a hypothesis never provides any certainty but more of a probability based on generalisations,[135] or as Popper claimed 'the hallmark of science is not confirmation but falsification.'[136]

Both these forms of acquiring new concepts, exemplar and hypothesis testing strategies, are based on a bottom-up form of processing which makes extensions of a person's existing knowledge. A third way in which we acquire concepts uses the top-down strategy. This is where a subject uses both their prior knowledge (unlike the exemplar and hypothesis testing strategies) along

[135] Eysenck and Keane, p. 438.
[136] Ibid.

with the known instances, in order that they may decide what the common properties of a concept are.

Pinker raises an interesting point when he questions whether children's and adults' concepts are different in any way, and if so, how?

> The mind of a child […] actively assembles words and concepts into new combinations guided by rules and regularities.[137]

Research suggests that that the content of a child's concepts and an adult's concept is different due to an individual's knowledge, past experience and understanding of the world:

> but whether children's concepts have a different structure and processing system is something that needs to be determined. These differences, however tentative and abstract, are considered as 'qualitative differences'.[138]

5.9.3 Memory

As with concepts, memory too can also be considered as the glue of the cognitive processing system. The function of memory is to store information that has been processed, and only information that has been stored can be retrieved. Similarly, how such information is stored, for example, at a low level processing or at a deep level of processing, affects how it can be retrieved.[139]

[137] Pinker, *Words and Rules – The Ingredients of Language,* p. 1.
[138] Ibid.
[139] This would apply to both cases of voluntary and involuntary memory.

The cognitive component of memory can be divided up into structures such as declarative memory ('conscious memory, memory that one can communicate or 'declare' to others'[140]), episodic memory ('a form of memory in which information is stored with 'mental tags' about where, when, and how the information was picked up; i.e. the material in memory concerns fairly sharply circumscribed episodes'[141]) and procedural memory ('memory for procedures or complex activities that have become highly automatized and are acted out without conscious thought about the process, such as driving an auto or riding a bicycle'[142]). Some of these types of memories work from the store of short term memory (or working memory) or long term memory. However, this dissertation is concerned with only two models of knowledge representation that enable us to understand concepts and categories, specifically that of semantic networks and propositional networks. A third type of memory, that of connectionist models and frameworks, is referred to only in this chapter and is not discussed in detail.

The Semantic Feature Comparison Model[143] suggests that 'words are represented as sets of semantic features. So each word has critical defining features, and characteristic features.[144] The defining determine set membership, e.g. fish have fins, swim and live in water, and then characteristic features which describe the particular example, such as a monkfish has no bones and is

[140] Reber, p. 423.
[141] Ibid., pp. 423-424.
[142] Ibid., p. 425.
[143] Edward E. Smith, Edward J. Shoben, E.J. and Lance J. Rips, 'Structure and Process in Semantic Memory: A Featural Model for Semantic Decisions', *Psychological Review*, 81 (1974), pp. 214-241.
[144] H. Gavin, *The Essence of Cognitive Psychology* (London: Prentice Hall Europe, 1998), p. 87.

only white. This is similar to the core and typical prototype properties that children attribute to concepts until the age of ten.[145] However, when an atypical member of the set is found, such as a whale, which is a mammal rather than a fish, then other properties need to be examined and, therefore, several levels of comparison can be sought.[146] However, there are some objects that appear on the surface to belong to a particular set but on closer examination fail. Consider the concept 'bird': some of the prototype properties of this concept include 'flying' and 'chirping' which describes most birds, such as a robin or a blue jay. However, it does not fit other examples such as ostrich or penguin. In this example of 'bird' the prototype properties are salient but not exact indicators of concept membership, whereas core properties, such as a bird 'flies' and has 'wings', are more representative of concept membership. Concepts like 'bird' are referred to as fuzzy concepts and concepts with unclear boundaries: 'they lack true definitions, and categorization relies heavily on prototypes.'[147]

A criticism of the semantic feature comparison model is that there is no one defining attribute that constitutes a set, such as mammal or fish. Similarly, however, the opposite is true: there is no one defining attribute that does not constitute a mammal, or fish or bird. As Gavin states: 'defining features cannot have absolute properties. No single feature makes a bird, or not a bird.'[148]

[145] Atkinson, p. 299.
[146] Gavin, p. 87.
[147] Atkinson, pp. 297-298.
[148] Gavin, p. 87.

Semantic network models arose from the ashes of the main principles of association.[149] Within the semantic network frame, concepts are represented by linked nodes that form a network and these links between the nodes can vary in strength and vary in relation, from the general to the more specific. The level of activation strength between the nodes determine whether a concept will be activated, while the activation spreading through the network can be determined by a number of factors, such as the number of links between the said node, or the length of time passed since activation.[150] Furthermore, the structure of this model is hierarchical and, therefore, there is what is known as cognitive economy 'as attributes that are more general do not need to be stored with every member of a category.'[151]

According to Harley:

> The semantic network is particularly useful for representing information about *natural kind terms*, words that denote naturally occurring categories and their members, such as types of animal or metal or precious stone. This system works in the semantic network hierarchical frame. Within this hierarchical structure, information is stored at various levels (and is therefore not repeated which accounts for its economy).[152]

However, there are several drawbacks with Collins and Quillian's semantic network model. First, it is doubtful that *all* types of information can be stored in this hierarchical fashion. One type of such information that could be considered in this argument is an abstract concept, such as 'validity'. Similarly,

[149] Eysenck and Keane, p. 7.
[150] Ibid., pp. 7-8.
[151] Gavin, p. 88.
[152] Harley, p. 279.

not all words or concepts have clearly defined sets of attributes.[153] Secondly, a problem that emerged with this model is 'conjoint frequency', a weakness concerning the sentence-verification task. Thirdly, the hierarchical structure seems to make some incorrect predictions in the sentence verification task. Some sentences appear to be verified faster than others; according to the hierarchical structure this should not happen based on the position of the words within the system. This weakness would suggest that memory structure is not fixed in the sense that it may have a tendency to reflect incorrect logical category structure.[154]

In the Spreading Activation Network, 'concepts are held in a conceptual space, linked by association to related concepts.'[155] Furthermore, the spreading activation network:

> Represents concepts and properties as nodes and represents associations between concepts and properties as pathways that carry spreading activation.[156]

This method of activating concepts means that as one object is triggered other objects close by are also triggered and thus the activation continues to spread through the network, hence the term spreading activation. For example, the node between a dog and a cat may be connected by a link with an activation of 0.5, whereas the node between dog and pencil may be connected by a link with

[153] Gavin, p. 88.
[154] Harley, p. 280.
[155] Gavin, p. 89.
[156] Barsalou, 'Ad Hoc Categories', p. 212.

an activation of only 0.1.[157] However, the down side of this is that there may be limits to the amount of information that can be activated. The strength of each activation depends on the strength of the links between the first activated word and then the others. If the link is weak then activation will be slow and poor but if it is a strong link then the activation process will continue until all words or nodes have been activated.[158] Spreading activation is another example of where a dominant philosophical theme is present. In this case we can see the Aristotelian concept of associationism. Semantic priming, which is also something that could be considered here, would account for how some words are more closely linked and, therefore, activated to others.[159] When we hear the word 'in' the word 'out' is activated; for 'up' the word 'down' is accessed; and for 'bread' the word 'butter' is triggered. In contexts such as the above examples, the priming word automatically activates the stored representations of all the words related to it.

> Showing the word 'sky' will trigger 'blue', 'aeroplane', 'cloud', etc. very quickly, and with a bit more time, 'green', 'pilot' and 'rain' will be found. As each word is activated, the activation spreads throughout the network.[160]

Propositional Networks are similar to semantic networks but differ in that they represent the smallest unit of knowledge within a proposition and, therefore, sentences are first segmented into propositions. 'Propositions are the smallest components of knowledge that can stand alone as meaningful units'[161]

[157] Eysenck and Keane, pp. 7-8.
[158] Ibid., p. 7.
[159] Ibid., pp. 321-322.
[160] Gavin, p. 89.
[161] Ibid., p. 90.

and have a truth-value, that is, the proposition is either true or false, such as the sentence 'the book is on the table'.[162]

However, one of the major drawbacks of propositional networks is that they don't explain how inferences are made even though they do show how knowledge might be represented. According to Harley:

> Propositional networks on their own are inadequate as a model of comprehension but do nonetheless form the basis of more complex models, such as Kintsch's construction-integration model.[163]

5.10 The Cognitive Revolution

As previously stated in the introduction of this chapter, cognitive psychology had developed as a separate area within the psychology discipline in the late 1950s and early 1960s.

Jerome Bruner, in *Acts of Meaning*, describes the revolution as trying to 'establish meaning as the central concept of psychology',[164] rather than in terms of some of the principles that had been associated with behaviourism such as the analysis of overt behaviour and S-R responses. However, Bruner also acknowledges that the cognitive revolution was not a revolution against behaviourism but rather it was 'more profound'[165] and its aim was to discover and explain formally the meanings that individuals created from their

[162] Ibid.
[163] Harley, p. 328.
[164] Bruner , p. 2.
[165] Ibid.

experience with the world. Its focus was on the 'symbolic activities that human beings employed in constructing and in making sense not only of the world, but of themselves.'[166] For Miller 'psychology could not participate in the cognitive revolution until it had freed itself from behaviourism, thus restoring cognition to scientific respectability'[167] and for Sperry 'to overthrow behaviourism would require an overthrow also of the conceptual foundations of neuroscience and of science in general.'[168]

The birth of cognitive psychology can be seen emerging in the late 1950s, several years after Wittgenstein's death. I suggest that inspired by developments in other disciplines, such as linguistics for example, psychologists began to focus on cognitive processes (cognition) and mental states, instead of focusing only on overt and external behavioural dispositions. George A. Miller's paper 'The Magical Number Seven, Plus or Minus Two'[169], which was published in 1956, is seen as an early development and contribution to cognitive psychology, while Ulric Neisser was the first to coin the term Cognitive Psychology in 1967. 'During the 1970s theorists such as Neisser (1976) argued that nearly all cognitive activity consists of interactive bottom-up and top-down processes.'[170] For Neisser cognitive psychology was where individuals possessed information processing systems whose cognitive functions should be considered in computational terms.

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[166] Ibid.
[167] Miller, 'The Cognitive Revolution: a Historical Perspective', p. 141.
[168] Roger W. Sperry, (1993) 'The Impact and Promise of the Cognitive Revolution', *American Psychologist*, 48 (1993), 878-885 (p. 881).
[169] George A. Miller, G. (1956) 'The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information', *The Psychological Review*, 63 (1956), 81-97.
[170] Eysenck and Keane, p. 2.

In spite of its diversity, cognitive psychology is unified by a common approach based on an analogy between the mind and the digital computer; this is the information-processing approach.[171] This, for Bruner, is how the cognitive revolution became too 'fractionated' and 'technicalized'[172] and where there was a gradual 'shift from "meaning" to "information", from the *construction* of meaning to the *processing* of information'.[173] This emerged with the introduction of using metaphors, such as the computer, to describe the mind and 'by the early 1950s became the root metaphor for information processing.'[174]

Sperry sees, 'a possible ray of hope in psychology's cognitive revolution and what it would mean in bringing new perspectives, beliefs, and values – in short, new mind-sets and a new way of thinking – much needed if humanity is to survive the next century.'[175] He also contends that there have been two other 'revolutions', one that was associated with Skinner and the other that was associated with Freud, namely the schools of behaviourism and psychoanalysis. Of the three revolutions that he cites, he claims that the 'current so-called *cognitive, mentalist,* or *consciousness* revolution is the most radical turnaround — the most revisionary and transformative.'[176] However, Hergenhahn argues that:

[171] Ibid. p. 1.
[172] Bruner, p. 4.
[173] Ibid.
[174] Ibid., p. 6.
[175] Sperry, 'The Impact and Promise of the Cognitive Revolution', p. 878.
[176] Ibid.

> There is nothing new in psychology embracing cognitive psychology, and there is certainly nothing new in the contention that the mind (cognition) and the body (brain) interact. Therefore, nothing as dramatic as a paradigmatic shift or revolution has taken place in psychology. If anything, there has been a counterrevolution in which psychology's interest in cognition has been reasserted.[177]

In Sperry's estimation, nonetheless, 'the cognitive revolution represents a diametric turn around in the centuries-old treatment of mind and consciousness in science.'[178] For Sperry this would mean that mental states become functional and interactive which would be essential in order that for conscious behaviour could be explained.[179] However, this should not be confused with 'mentalistic dualism';[180] rather, the new position integrates previous 'opposed solutions into a novel unifying synthesis.'[181] The new position is certainly mentalistic but 'holding that behaviour is mentally and subjectively driven.'[182] Furthermore, Bruner states that the cognitive revolution required that psychology joined forces with other disciplines such as linguistics, history and philosophy in an attempt not to 'reform behaviourism, but to replace it.'[183]

For Sperry, in 1995, psychology was turning the tables on areas such as physics and science. The cognitive revolution was enabling psychology to lead the way in science to what he describes as a:

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[177] B.R. Hergenhahn, 'Psychology's Cognitive Revolution', *American Psychologist*, 49 (1994), 816-817 (p. 817).
[178] Sperry, 'The Impact and Promise of the Cognitive Revolution', p. 879.
[179] Ibid.
[180] Ibid.
[181] Ibid.
[182] Ibid.
[183] Bruner, p. 3.

> more adequate and more vivid paradigm for scientific and all causal explanation. The same paradigm change that served in psychology to shift emergent mental states into their new interactive causal role applies equally to emergent phenomena and properties at other levels in other sciences. Thus the cognitive revolution is a revolution for a science.[184]

Sperry further claims that the move from 'cognitivism-mentalism'[185], following centuries of materialism, is certainly going to have innumerable consequences in psychology.[186]

> In many respects, then, Miller is correct to conclude that,
>
> Cognitive Science is a child of the 1950s, the product of a time when psychology, anthropology and linguistics were redefining themselves and computer science and neuroscience as disciplines were coming into existence.[187]

Indeed, the science of psychology has experienced many paradigms (and paradigm shifts) that have developed since its inception. While early prominent domains (such as structuralism, functionalism and behaviourism) have had a major influential and contributing force on current themes, other movements also, such as the cognitive revolution, have had, nonetheless, an equally significant impact on where cognitive psychology is currently at, namely how concepts are explained as exemplified in the embodied cognition thesis. However, I suggest that they all share a common feature, one that Wittgenstein would agree with, and that is namely they are all 'abstract' and not sufficiently

[184] Roger W. Sperry, The Future of Psychology', *American Psychologist*, 50 (1995), 505-506.
[185] Sperry, 'The Impact and Promise of the Cognitive Revolution', p. 879.
[186] Ibid.
[187] Miller, 'The Cognitive Revolution: a Historical Perspective', p. 141

grounded in either real-time or in real-world surroundings, even in something as fundamental as the environment, or as Wittgenstein would say 'a context'.

As we can see from this chapter some approaches, such as the defining attribute view, are out-dated and no longer contribute anything significant to current cognitive psychology. However, other methods in understanding the purpose or origin of concepts, such as the prototype view and the knowledge approach, are still much used and discussed. While Murphy gives an extensive overview of the different approaches cognitive psychology takes to concepts, along with the many problems that each one presents and the empirical evidence required in each of the views, he states in his conclusion that 'if you've been keeping score, there is no clear dominant winner.'[188] For Murphy and Medin, current theories of conceptual structure 'represent concepts in ways that fail to bring out this relation between conceptual and theoretical knowledge.'[189] A concept does not need to be embedded within a theory;[190] a concept may be part of our knowledge, part of the environment and understood, therefore, within a context.

More traditional and dominant views in the philosophy of mind and cognitive science have considered the body as separate and distinct to understanding mind and cognition.[191] Furthermore, 'proponents of embodied

[188] Murphy, *The Big Book of Concepts*, p. 488.
[189] Murphy and Medin, 'The Role of Theories in Conceptual Coherence', p. 290.
[190] Ibid.
[191] Wilson and Foglia, 'Embodied Cognition', [accessed 08 August 2012] (p. 1).

cognitive science view this as a serious mistake.'[192] As we have seen in this chapter there has been a significant move in cognitive psychology as to how concepts are explained. We have seen a dominant view in behaviourism where external reactions of the individual were studied, and thus were thought to explain behaviour with no reference to an inner mental state, or to 'a mind' that was operating. During the cognitive revolution we saw how the terms 'mind' and 'mental' were replaced by terms such as 'cognition' and 'cognitive processing'. Now contemporary themes in cognitive psychology are looking again at how the behaviour of the individual, combined with the environment, or a Wittgensteinian 'context', is how the concept is understood. The move from cognitivism to embodied cognition and embodied cognitive science has been a phenomenal move, almost returning full circle to behaviourism to explain how concepts are part of the environment, and as I will show, how concepts are also participatory.

In the following chapter, I present an explanation of the embodied cognition thesis, and how concepts can be situated, both of which show strong traits of the Wittgensteinian theme of engaging the individual, the concept and the context. Following on from this chapter I present a series of arguments to show how Wittgenstein's language-game is a place where concepts are participatory, thus we see the embodied cognition thesis in action.

[192] Ibid.

CHAPTER VI

EMBODIED COGNITION AND SITUATED CONCEPTS: A WITTGENSTEINIAN THEME

'We can, however, establish differences of concept here.'[1]

The focus of this chapter is to 'show how the mind must be understood in the context of its relationship to a physical body that interacts with the world.'[2] This is not a new domain in the sense that aspects or traces of embodied and situated cognition have been emphasised before in the work of some theorists. For example, some of these traces are evident in Lakoff and Johnson's work on concepts and metaphors, and how they [concepts] may be based on metaphors for physical concepts.[3] We shall explore this further when we look at the historical anchors for embodied cognition in this chapter.

The label 'Embodied Cognition', otherwise known as EC, is typically used to refer to:

> A number of theories in a variety of domains within cognitive science (artificial intelligence, robotics, psychology, cognitive neuroscience, philosophy, linguistics, cognitive anthropology).[4]

However, a distinction must be made on how embodied cognition is viewed by some authors; some consider that action is important for cognition and the role

[1] Wittgenstein, *Philosophical Investigations*, p. 179.
[2] Wilson, 'Six Views of Embodied Cognition', p. 625.
[3] Ibid.
[4] Anna M. Borghi and Felice Cimatti, 'Embodied Cognition and Beyond: Acting and Sensing the Body', *Neuropsychologia*, 48 (2011), 763-773 (p. 763).

that the body plays, while others consider the role that grounding plays in cognition and subsequently align embodied cognition with situated cognition.[5] Furthermore, there is what Boghi and Cimatti refer to as the 'radical'[6] version of embodied cognition where our cognition can be 'constrained by the specific kind of body we possess, and the key notion of embodied cognition is *action.*'[7] In the *Stanford Encyclopedia of Philosophy*, Wilson and Foglia define cognition as:

> embodied when it is deeply dependent upon features of the physical body of an agent, that is, when aspects of the agent's body beyond the brain play a significant causal or physically constitutive role in cognitive processing.[8]

In Anderson's estimation, nonetheless, the nature of cognition is here being re-considered because,

> instead of emphasising formal operations on abstract symbols, the new approach foregrounds the fact that cognition is, rather, a *situated activity*, and suggests that thinking beings ought therefore be considered first and foremost as acting beings.[9]

Anderson's remarks here are suggestive of two of Wittgenstein's key ideas, namely: that context is key to understanding how concepts are understood and subsequently used within a language-game, or in Anderson's case 'situated activity'; and how Wittgenstein has always considered that individuals are first

[5] Ibid.
[6] Ibid.
[7] Ibid.
[8] Wilson and Foglia, 'Embodied Cognition', [accessed 08 August 2012] (p. 1).
[9] Michael L. Anderson, (2003) 'Embodied Cognition: A field Guide', *Artificial Intelligence*, 149 (2003), 91-130 (p. 1).

and foremost acting beings, hence his remarks on behaviour, forms of life, culture and social activities.

Wittgenstein characterised cognition as an 'umbrella concept'[10] rather than a substantive that 'makes us look for a thing that corresponds to it.'[11] His remarks on the philosophy of psychology can now be considered in terms of how he has contributed in shaping current trends in cognitive psychology, specifically situated cognition, which involves 'interaction with the things that the cognitive activity is about'[12], or embodied cognition. However, according to Anderson, while it is clear that embodied cognition is 'not currently the dominant paradigm for understanding the mind, it is equally clear that it is ascendant, and it promises soon to be the predominant approach.'[13] Since Anderson made this statement in 2007 there is a strong argument to be made for cognition, and the mind, to be seen more as contextual and situated in behavioural dispositions, cultural and social activities, rather than being considered in terms such as 'mentalism' or 'in the head' only. Susswein and Racine's article[14] suggests this kind of questioning and a new perspective on Wittgenstein's contribution to how cognition should be considered. Furthermore, Susswein and Racine claim that Wittgenstein's most fundamental insight into the philosophy of psychology is in fact the one that is most

[10] Noah Susswein and Timothy P. Racine, (2009) 'Wittgenstein and Not-Just-in-the-Head Cognition', *New Ideas in Psychology*, 27 (2009), 184-196 (p. 185).
[11] Ibid.
[12] Wilson, 'Six Views of Embodied Cognition', p. 626.
[13] Michael L. Anderson, (2007) 'How to Study the Mind: An Introduction to Embodied Cognition,' *Brain Development in Learning Environments - Embodied and Perceptual Advancements*, ed. by F. Santoianni and C. Sabatano C. (Newcastle: Cambridge Scholars Publishing, 2007), p. 1.
[14] Susswein and Racine, pp. 184-196.

profoundly unappreciated.[15] To illustrate this point the following quote from *Zettel* is used:

> 'Thinking' is a widely ramified concept. A concept that comprises many manifestations of life. The *Phenomena* of thinking are widely scattered.[16]

Susswein and Racine argue that the term 'thinking' can be replaced with the term 'cognition' so that it may include a variety of relevant psychological terms such as knowledge and understanding, for example.[17] Furthermore, they draw attention to Wittgenstein urging us to use the term 'cognition' cautiously and never to assume that when we use the word that there is a common process taking place.[18] Here we can see that this is a further objection to mentalism[19] by Wittgenstein, and the idea that situations and language-games enable us to use and extend concepts depending on the context.

To understand concepts the emphasis needs to be taken away from 'the mind' and 'the mental' and 'out of the head', and rather consider an emphasis on the interaction between mind and body. However, an awareness is needed of the difference between the embodiment and cognitivist perspectives which is mainly 'in the role ascribed to the body, its characteristics, and its interactions

[15] Susswein and Racine, p. 184.
[16] Ludwig Wittgenstein, *Zettel*, 2nd edn., ed. by G.E.M. Anscombe and G.H. von Wright, trans. by G.E.M. Anscombe (Oxford: Blackwell, 1981) #110; in Susswein and Racine, p. 184.
[17] Susswein and Racine, p. 184.
[18] Ibid.
[19] The term 'mentalism', as explained in the Introduction of this dissertation, refers to mental processes, such as perception and thought. An alternative word that could be used for mentalism is the term consciousness.

with the environment.'[20] From the cognitivist perspective the activities of the body are irrelevant; rather the focus is specifically on the body which is considered as an output device that 'executes commands generated by symbol manipulation in the mind.'[21] From the embodiment perspective 'cognition is a product of the body and the ways in which it moves through and interacts with the world.'[22] Wittgenstein advocates for this perspective; for him the individual, who is made up of mind and body, engages with the environment through its behaviour and actions. The crucial distinction between the two perspectives lies primarily in the role that the body plays while interacting with the environment, and how cognition is 'produced' rather than being considered as a series of 'symbolic manipulations'. Similarly, Wilson supports the embodied cognition perspective when she states that:

> There is a movement afoot in cognitive science to grant the body a central role in shaping the mind.[23]

There is also a place for where the mind and body interact with the environment and where the:

> emerging viewpoint of embodied cognition holds that cognitive processes are deeply rooted in the body's interactions with the world.[24]

[20] Jana M. Iverson and Esther Thelen, 'Hand, Mouth and Brain-The Dynamic Emergence of Speech and Gesture', *Journal of Consciousness Studies*, 6 (1999), 19-40 (p. 19).
[21] Ibid.
[22] Ibid.
[23] Wilson, 'Six Views of Embodied Cognition', p. 625.
[24] Ibid.

However, while Wilson clearly shows support for the embodied cognition thesis she was also aware of some of its limitations, such as problems with fuzzy definitions.[25]

6.1 The Historical Anchors for Embodied Cognition

I present four examples of work in embodied cognition that are important to understand in order that the history of this new approach is understood. These are: metaphor and cognition; enactive cognition; rethinking robotics; and phenomenology.[26]

In George Lakoff and Mark Johnson's *Metaphors We Live By*, they argue that language, and metaphor specifically, is not something that should be studied in the domain of cognition but 'actively structures much of cognition traditionally thought to be isolated from metaphor.'[27] They consider that human experience and metaphor are intrinsically linked, hence the title 'Metaphors We Live By'. Furthermore, they contend that if experience and metaphor are shaped by the type of bodies that we have, and that these bodies 'mediate' between mind and world, then for Lakoff and Johnson cognition is embodied yet not in a way that traditional cognitive science could explain.[28] To explain their thesis on human experience and metaphor they use the example of love as a kind of journey. Metaphors that are often used to describe such an

[25] The term 'fuzzy definition' is used by theorists such as: Margaret Wilson, Eleanor Rosch and Gregory Murphy, to refer to concepts where boundaries are not sharply defined and, thus, it can be difficult to make a judgement as to which category they may belong.
[26] Wilson and Foglia, 'Embodied Cognition', [accessed 08 August 2012] (p. 8).
[27] Ibid., p. 5.
[28] Ibid.

experience would include phrases such as: “we’re together”, “we’re on a journey”, “this is our path”, “we’ve hit a bad spot”. These types of metaphors are used at a conceptual level by individuals for expression purposes and are used conventionally throughout cultures (and so arguably some are probably more culture-dependent than others).

The enactive perspective on cognition was developed by Francisco Varela, Evan Thompson and Eleanor Rosch in *The Embodied Mind.*[29] This approach was an attempt to:

> redirect the cognitive sciences by infusing them with the phenomenological perspective developed in the work of Maurice Merleau-Ponty.[30]

Varela, Thompson and Rosch introduced the concept of ‘enaction’, hence the term enactive cognition, and used this concept to develop a framework that would show that the:

> Experienced world is portrayed and determined by mutual interactions between the physiology of the organism, its sensorimotor circuit and the environment.[31]

By focusing on the interaction between the individual’s mind, body and its engagement with the world, it highlighted the very bedrock of the embodied

[29] F. Varela, E. Thompson and E. Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge, MA: MIT Press, 1991).
[30] Wilson and Foglia, ‘Embodied Cognition’, [accessed 08 August 2012] (p. 6).
[31] Ibid.

cognition thesis, that 'cognitive agents bring forth a world by means of the activity of their *situated living bodies*.'[32]

By the early 1990s work in areas such as computational intelligence had started research in to how to generate 'intelligence' in robots. This was referred to as the embodied approach to robotics. Andy Clark's *Being There: Putting Mind, World, and Body Back Together Again*[33] heralded a sweep of work in reactive and or behaviour-based robotics, and its identification as marking a part of the embodied cognitive science.[34] Clark assessed and critiqued research on robotics and computationally intelligent action. For Clark, minds were not for thinking but rather for doing, 'for getting things done in the world in real time.'[35] In *Being There,* Clark wanted to show affinities between what was considered intelligent action that was computationally driven and the idea that cognition was now being considered as 'scaffolded, embedded, and extended'.[36]

The idea that an understanding of the body and its physicality underlies the very possibility *of experience*[37] can be traced to the historical roots of the phenomenological work of Edmund Husserl (1859–1938),[38] Maurice Merleau-

[32] Ibid.
[33] Andy Clark, *Being There: Putting Mind, Body, and World Together Again* (Cambridge, MA: MIT Press, 1997).
[34] Wilson and Foglia, 'Embodied Cognition', [accessed 08 August 2012] (p. 6).
[35] Ibid., p. 7.
[36] Ibid.
[37] Ibid., p. 8.
[38] See, Edmund Husserl, *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy – First Book: General Introduction to a Pure Phenomenology* [1913], trans. by F. Kersten, (The Hague: Nijhoff , 1982) and also his, *Cartesian Meditation* [1931], trans. by D. Cairns (Dordrecht: Kluwer, 1988). Though Husserl recognises in the First

Ponty (1908–1961)[39] and John-Paul Sartre (1905–1980).[40] We saw evidence of some of these philosophical roots and insights in the work of Varela, Thompson and Rosch in *The Embodied Mind*.[41] The embodied cognition thesis seems to push phenomenological insights in new directions while acknowledging that rather than understanding how physicality opens up the experience of the individual and the world, they want to know the mechanism that explain how 'cognition is grounded in, and deeply constrained by, the bodily nature of cognitive agency.'[42]

As we can see the embodied cognition approach is drawing insights from many disciplines including: psychology, philosophy, linguistics, cognitive science, artificial intelligence and robotics.

6.2 EMBODIED COGNITION

Anderson claims that:

> Structure and function, action and interaction, matter from top to bottom, affecting the nature and content of mental activities and events.[43]

Book of *Ideas* (1913) that human consciousness is incarnate, he does not explore this particular experience in his philosophy in favour of demonstrating the absolute nature of the experience of human consciousness as such to refute the reification of consciousness. Some of his followers took up the task of examining the bodily incarnation of consciousness that is experienced by an individual human being neither as pure consciousness nor as bodily reality but as a conscious body, most notably Merleau-Ponty This marks a significant shift, nonetheless, away from the transcendental idealism of Husserl's phenomenology, and towards the existential phenomenological approach in the study of human existence.

[39] Maurice Merleau-Ponty, *Phenomenology of Perception* [1945], trans. by C. Smith (London: Routledge, 1962).

[40] Jean Paul Sartre, *Being and Nothingness* [1943], trans. by H.E. Barnes (New York: Philosophical Library, 1956).

[41] Wilson and Foglia, 'Embodied Cognition', [accessed 08 August 2012] (p. 8).

[42] Ibid., p. 9.

[43] Anderson, 'How to Study the Mind: An Introduction to Embodied Cognition', p. 12.

He also suggests that to study the mind, we should be familiar with some of the basic principles of the embodied cognition approach. Some of these principles would include collating evolutionary accounts of observed cognitive phenomena that would be needed as support evidence for the account of these observations; to always look for the *adaptivity* of cognitive attributes and to establish whether these attributes increase the effectiveness of behaviour; to observe the many and varied ways in which the environment can serve as a resource for any said cognitive activity; to be aware of the role that physiology plays in cognitive functioning; to look for instances where there is evidence of pre-existing behavioural traits and tendencies and where these in turn have been attuned to serve cognitive needs; and finally, he states that we should never expect one type of solution to solve all cognitive problems or challenges.[44]

Embodied cognition proposes that cognition has an '*evolutionary history'* that needs to be considered in order that we may understand its function.[45] I consider this to be one of Anderson's most insightful remarks. He continues to explain that cognition evolved because it was adaptive and that it developed the ability to cope with the environment. He also states that cognition 'evolved in *organisms with specific physical attributes'*[46] and in organisms with '*pre-existing sets of behavioural possibilities*, instincts, habits,

[44] Ibid. pp. 14-15.
[45] Ibid., p. 2.
[46] Ibid.

needs, purposes and the like.'[47] Similarly, Glenberg claims that psychological processes evolved and that furthermore evolution is driven by two distinct imperatives: namely, survival and reproduction. These imperatives 'require direct interaction with the physical and social world, and that interaction is only through the body.'[48]

There is no doubt that these contributions from Anderson and Glenberg, which focus particularly on cognition being adaptive and interactive with the environment, can help in the study of the mind, and in understanding cognition from a new perspective. Furthermore, representation is central to theories of cognition, and according to Robbins and Aydede:

> the explanatory value of those representations depends on their meaningfulness, in real-world terms, for the agents that deploy them.[49]

One of the tenets of embodied cognition is that 'biological bodies move and act in rich real-world surroundings.'[50] Proponents of the embodied cognition perspective, such as Wilson and Anderson, take as their 'theoretical starting point not a mind working on abstract problems, but a body that requires a mind to make it function.'[51] While there are many researchers of the embodiment thesis such as Glenberg, Clark, Rosch and Thompson, I have chosen to focus on Wilson's description and the six views of embodied cognition that she

[47] Ibid., p. 3.
[48] Arthur M. Glenberg, 'Embodiment as a Unifying Perspective for Psychology', *WIREs Cognitive Science*, 1 (2010), pp. 586-596 (p. 586)
[49] Philip Robbins and Murat Aydede, 'A Short Primer on Situated Cognition', in *The Cambridge Handbook of Situated Cognition*, ed. by Philip Robbins and Murat Aydede (Cambridge: Cambridge University Press, 2009), pp. 3-10 (p. 4).
[50] Andy Clarke, 'Embodied, Situated, and Distributed Cognition.', in *A Companion to Cognitive Science*, ed. by W. Bechtel & G. Graham (Malden MA: Blackwell, 1998), p. 506.
[51] Wilson, 'Six Views of Embodied Cognition', p. 625.

proposes. These six views are discussed here in order that I may show the importance of Wittgenstein's key term 'context' and his views on how concepts, as situated within a language-game, can be identified. While some literature on this approach presents these claims together as if they were one view point, here they are discussed as separate points so I may do, as Wilson suggests, and take a more careful look at each of these claims on its own merits.[52]

6.2.1 Cognition is Situated

> Now what takes place when, say, he reads a newspaper?—His eye passes—as we say—along the printed words, he says them out loud—or only to himself; in particular he reads certain words by taking in their printed shapes as wholes; others when his eye has taken in the first syllables; others again he reads syllable by syllable, and an occasional one perhaps letter by letter.[53]

Situated cognition is cognition that occurs in the context or environment of what Rosch refers to as 'task-relevant inputs and outputs'[54] thus, while cognitive processing is taking place other information, such as perceptual information, continues to come in that 'affects processing, and motor activity is executed that affects the environment in task-relevant ways.'[55] This situated cognition can be seen in the above remarks from Wittgenstein. Other examples of situated cognition would include writing and typing, and other functional tasks such as mowing the grass and cooking. However, by using the term 'situated cognition' there is an implication that cognition is not situated on

[52] Ibid., p. 626.
[53] Wittgenstein, *Philosophical Investigations*, #156.
[54] Wilson, 'Six Views of Embodied Cognition', p. 626.
[55] Ibid.

occasions. This is referred to as 'offline' and simply means that when there is no input and output of any task-relevant activity cognition is not situated. Examples of non situated cognition, or cognition that is not situated, would include 'planning, remembering, and day-dreaming, in contexts not directly relevant to the content of plans, memories, or day-dreams.'[56] Consider the following remark from Wittgenstein:

> Why should I deny that there is a mental process? But 'There has just taken place in me the mental process of remembering….' means nothing more than: 'I have just remembered….'. To deny the mental process would mean to deny the remembering; to deny that anyone ever remembers anything.[57]

Anderson considers that much of cognition is adapted to serve as a function for survival and that an amount of cognitive activity takes place in the context of repeated and, therefore, familiar interaction and engagement with the environment.[58] This too is something with which Wittgenstein would agree, particularly the aspect of repeated exposure and interaction with a specific environment or context. For him this is how we learn or grasp the meaning of the concept, and what it symbolises or represents.

> But it is just the queer thing about *intention*, about a mental process, that the existence of a custom, of a technique, is not necessary to it. That, for example, it is imaginable that two people should play chess in a world in which otherwise no games existed; and even that they should begin a game of chess—and then be interrupted.[59]

[56] Ibid.
[57] Wittgenstein, *Philosophical Investigations*, #306.
[58] Anderson, 'How to Study the Mind: An Introduction to Embodied Cognition', p. 5.
[59] Wittgenstein, *Philosophical Investigations*, #205.

6.2.2 Cognition is Time Pressured

According to Wilson:

> The observation that situated cognition takes place "in real time" is, at bottom, an observation that situated cognition must cope with time pressure.[60]

Let us consider the following remark from Wittgenstein to see how cognition is time-pressured:

> Suppose we think while we talk or write—I mean, as we normally do—we shall not in general say that we think quicker than we talk; the thought seems *not to be separate* from the expression. On the other hand, however, one does speak of the speed of thought; of how a thought goes through one's head like lightening; how problems become clear to us in a flash, and so on. So it is natural to ask if the same thing happens in lightning-like thought—only extremely accelerated—as when we talk and 'think while we talk'. So that in the first case the clockwork runs down all at once, but in the second bit by bit, braked by the words.[61]

When referring to situated cognition we need to be aware of the constraints of real-time: there must be an awareness of a real time environment in which the individual is present. Clark describes it as 'mind on the hoof'[62] where the mind is interacting with the environment in what is considered as real-time situation. Anderson suggests that Wilson's argument that cognition is time-pressured can be accredited to cognition being recognised as a coping mechanism in what could be considered or perceived as a possible unpredictable and changing environment:[63] cognition can be considered under

[60] Wilson, 'Six Views of Embodied Cognition', p. 627.
[61] Wittgenstein, *Philosophical Investigations,* #318.
[62] See: Andy Clark, *Being There: Putting Brain, Body and World Together Again* (Cambridge, MA.: MIT Press, 1997).
[63] Anderson, 'How to Study the Mind: An Introduction to Embodied Cognition', p. 5.

these challenging circumstances as 'highly reactive and environmentally driven.'[64] Wittgenstein remarks:

> I can see or understand a whole thought in a flash in exactly the sense in which I can make a note of it in a few words or a few parallel dashes. What makes this note into an epitome of this thought?[65]

6.2.3 We Off-Load Cognitive Work onto the Environment

In order for us to understand cognition as an interaction between an individual organism and the social and cultural environment, and how cognitive works gets done, then the 'complex transactions between embodied minds and the embedding world' must be considered.[66]

Wilson's third claim that we off-load cognitive work onto the environment makes sense when we consider how over-loaded cognitive systems can become, a type of 'representational bottleneck'.[67] However, this off-loading activity onto the environment can also be considered as a type of cognitive strategy. The strategy seems to be necessary, or possibly is a natural development, due to cognitive limitations, such as attention and working memory. However, Wilson suggests that when off-loading onto the environment frequently it can involve spatial tasks, which would mean that this also becomes a limitation of the cognitive strategy. Anderson claims that epistemic actions are illustrative of only one of two categories of methods by which organisms can use the environment to simplify and aid tasks:

[64] Ibid., p. 6.
[65] Wittgenstein, *Philosophical Investigations*, #219.
[66] Robbins and Aydede, p. 6.
[67] Wilson, 'Six Views of Embodied Cognition', p. 628.

subsequently therefore organisms exploit what might be considered stable environmental features to simplify and aid cognitive tasks, and organisms change the environment to simplify and aid cognitive tasks:[68]

> We off-load cognitive work onto the environment because of limits on our information processing abilities […] we exploit the environment to reduce the cognitive workload.[69]

This enables individuals to off-load information onto the environment and then later use that same information but only when it is specifically required.

To illustrate this point we see where Wittgenstein remarks:

> Someone tells me: 'I looked at the flower, but was thinking of something else and was not conscious of its colour.' Do I understand this?—I can imagine a significant context, say his going on: 'Then I suddenly saw it, and realized it was the one which…'.
> Or again: 'If I had turned away then, I could not have said what colour it was.'
> 'He looked at it without seeing it.'—There is such a thing. But what is the criterion for it?—Well, there is a variety of cases here.[70]

6.2.4 The Environment is Part of the Cognitive System

Wilson's fourth claim suggests that cognition should not just be considered as an 'in the head' activity but as an activity that involves the interaction across and between specific situations or a context that involves the mind, body and environment.

Wilson states that 'to understand cognition we must study the situation and the situated cognizer together as a single unified system.'[71] Out of

[68] Anderson, 'How to Study the Mind: An Introduction to Embodied Cognition', p. 7.
[69] Wilson, 'Six Views of Embodied Cognition', p. 626.
[70] Wittgenstein, *Philosophical Investigations*, p. 180.

Wilson's six claims this one seems to be the most contentious. Anderson uses Merleau-Ponty's description to defend Wilson's claim.[72] Merleau-Ponty describes a blind man that can be said to feel, not with his hand holding the cane, but rather *with the cane*.[73] Merleau-Ponty wants us to understand that the cane becomes a part of the body, or an extension of the body, as opposed to only an object which the blind man uses as an accessory or tool. This claim, however, is rather contentious: it suggests that the experience of the blind man is:

> not one of feeling bumps in the hand and *inferring* from these the presence of certain textures or obstacles at the tip of the cane; rather the cane as artefact recedes into the phenomenological background and the signals transmitted by the motions of the cane are immediately interpreted in terms of — are felt as — the textures and obstacles in the world as presence at the tip of the cane.[74]

Whatever agent drives cognition in an individual it does not reside only in the mind: it is an interaction, or as Wilson describes 'distributed' across the individual and the specific context the individual is interacting with.[75] However, as stated above, from Wilson's six claims this is the most contentious and the one that draws the most attention. Anderson states that there are metaphysical and ontological issues that need to be considered when studying the mind. He argues that embodied cognition has been recognised on

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[71] Wilson, 'Six Views of Embodied Cognition', p. 630.
[72] Merleau-Ponty was a significant philosopher and is regarded as one of the leading exponents of phenomenology. His early work, the *Phenomenology of Perception*, 'is best known for its central thesis concerning "the primacy of perception".' In this lengthy study he argued that all consciousness (e.g., intellection, volition) are rooted in and depend upon the subject's prereflective, bodily experience, i.e., perception. ("All consciousness is perceptual, even the consciousness of ourselves"). See, Audi, p. 558-559.
[73] Anderson, 'How to Study the Mind: An Introduction to Embodied Cognition', p. 8.
[74] Ibid.
[75] Wilson, 'Six Views of Embodied Cognition', p. 630.

pragmatic grounds, specifically where Wilson defines the cognitive system. She states that:

> For a set of things to be considered a system in the formal sense, these things must be not merely an *aggregate*, a collection of elements that stand in some relation to one another (spatial, temporal, or any other relation). The elements must in addition have properties that are affected by their participation in the system.[76]

Anderson does not accept Wilson's argument that 'the mind is always and everywhere, in its essence, *distributed*.'[77] He argues that Wilson's metaphysical definition is the problem, and that relying on metaphysical elements is in contradiction to embodied cognition's central thesis which is empirical, and which also comprises of an evolutionary element.

We can see where the environment is part of the cognitive system, or as Wilson claims a 'single unified system',[78] where Wittgenstein remarks:

> Am I to say that any one who has an intention has an experience of tending towards something? That there are particular experiences of 'tending'?—Remember this case: if one urgently wants to make some remark, some objection, in a discussion, it often happens that one opens one's mouth, draws breath and holds it; if one then decides to let the objection go, one lets the breath out. The experience of this process is evidently the experience of tending towards something. Anyone who observes me will know that I wanted to say something and then thought better of it. In *this* situation, that is […].[79]

[76] Ibid.
[77] Anderson, 'How to Study the Mind: An Introduction to Embodied Cognition', p. 9.
[78] Wilson, 'Six Views of Embodied Cognition', p. 630.
[79] Wittgenstein, *Philosophical Investigations*, #591.

6.2.5 Cognition is For Action

'It is a good bet that many psychological processes have their roots (if not their trunk, limbs, and leaves) in the need for action.'[80] Furthermore, there is little doubt that cognition is for action.[81]

The claim that Cognition is for action can be seen in the following remarks:

> No one will say that every time I enter my room, my long-familiar surroundings, there is enacted a recognition of all that I see and have seen hundreds of times before.[82]

And again where Wittgenstein remarks:

> A doctor asks: "How is he feeling?" The nurse says: "He is groaning". A report on his behaviour. But need there be any question for them whether the groaning is really genuine, is really the expression of anything? Might they not, for example, draw the conclusion "If he groans, we must give him more analgesic"—without suppressing a middle term? Isn't the point the service to which they put the description of behaviour?[83]

Anderson is correct when he states that the cognitive system is also a behavioural control system, 'albeit one that often utilises representations, concepts and other very complex and flexible machinery.'[84] Perception and memory are central to the claim that cognition is for action, and how these two cognitive processes contribute to situation-appropriate behaviour. Glenberg argues that memory evolved 'in service of perception and action in a three-

[80] Glenberg, 'Embodiment as a Unifying Perspective for Psychology', pp. 586-587.
[81] Wilson, 'Six Views of Embodied Cognition', p. 632.
[82] Wittgenstein, *Philosophical Investigations*, #603.
[83] Ibid., p. 153.
[84] Anderson, 'How to Study the Mind: An Introduction to Embodied Cognition', p. 10.

dimensional environment.'[85] The purpose of vision or perception is to develop an internal representation for an individual of what they have perceived, and then using memory as a cognitive process, to store this information either in short term (working) memory or semantic or episodic memory.

However, Glenberg raises an interesting argument when he suggests that the traditional view to memory needs to be re-considered; rather than considering memory 'for memorising' perhaps it needs to be replaced by a view of memory as 'the encoding of patterns of possible physical interaction with a three dimensional world.'[86] He argues that working memory should not be considered a 'system' but the deployment of particular, or depending on the context specific, action skills such as those used in verbal rehearsal.[87] Similarly, he argues that semantic memory and the formation of concepts can be understood in terms of embodied memory patterns. He also states that there must be a differentiation between semantic and episodic memory and that this can be seen in the frequency of the pattern's use across many situations.[88]

When the cognitive process of memory is considered, whether it is working memory, semantic or episodic, it should be understood in terms of an activity that allows us to encounter and conceptualise objects, contexts and situations in terms of their functionality rather than encoding them as objects

[85] Arthur M. Glenberg, 'What Memory is For', *Behavioural & Brain Sciences,* 20 (1997), 1-55 (p. 1).
[86] Ibid.
[87] Glenberg, 'What Memory is For', pp. 1-55; in Wilson, 'Six Views of Embodied Cognition', p. 631.
[88] Ibid.

which are neutral. However, what is certain is that that mental concepts contain invaluable information for the perceiver, and information that can be relied on and used in many and varied contexts. Furthermore, these concepts can be used in and by situations and contexts that they may not have been originally encoded for. This again illustrates the functionality and versatility of both perception and memory, and also illustrates these two processes as distributed. This is what Anderson refers to as breaking out of functional fixed-ness.[89] To illustrate this point Wilson gives the example of a piano in a room where a non-musician could use it as a bench to sit on or a flat surface to place their drink on. However, prior knowledge and experience can also allow someone to see the piano in a range of unforeseen contexts, such as using it as an instrument to gain the attention of a roomful of people, to barricade the door against an intruder or to break the instrument up for firewood. All these uses are derived from stored knowledge or representation of the piano.[90] This area of prior knowledge and mental representation was discussed in the previous chapter when we considered the different approaches used by cognitive psychology to explain concepts.

An individual's mental representations are often incomplete, nebulous, unreliable and woolly, particularly when we consider concepts and situations that we may have encountered only occasionally and briefly. However, over time through repeated exposure and familiarisation, individuals are capable of developing detailed representations. Wilson claims that:

[89] Wilson, 'Six Views of Embodied Cognition', p. 632.
[90] Ibid.

> Our mental representations, whether novel and sketchy or familiar and detailed, appear to be to a large extent purpose-neutral, or at least to contain information beyond that needed for the originally conceived purpose.[91]

6.2.6 Off-Line Cognition is Body Based

> Mental structures that originally evolved for perception or action appear to be co-opted and run "off-line", decoupled from the physical inputs and outputs that were their original purpose, to assist in thinking and knowing.[92]

The general purpose of these sensorimotor resources is to enable an individual to run 'simulation'[93] of some aspect of the physical world. The purpose of this is to enable the agent, or individual, to make inferences or to represent information and knowledge.

While Wilson's sixth claim is not as contentious as, for example, the claim that the environment is part of the cognitive system, it nonetheless has implications for human cognition, such as mentally simulated external events, e.g. mental imagery, working memory, episodic memory, implicit memory and reasoning and problem solving. All of the above would appear to make use of sensorimotor simulation. The domains of cognition mentioned here are 'well established and non-controversial examples of off-line embodiment.'[94] Furthermore, there are current areas of research investigating studies in which off-line cognition may be embodied. Some of these include: the field of

[91] Ibid.
[92] Ibid., p. 633.
[93] Ibid.
[94] Ibid., p. 634.

cognitive linguistics which is currently re-examining linguistic processing in terms of broader principles of cognitive and sensorimotor processing.[95] There is also the area of study which is examining an embodied approach to explain mental concepts.[96] Finally, a third area of current research is motoric simulation and the role it may play in representing and understanding the behaviour of organisms belonging to the same species as another (conspecifics).[97]

What is clear from Wilson's sixth claim, and the examples of where off-line cognition may be embodied, is that in so far as:

> A concept has its roots in the structure of the body […] then cognition will still owe a great deal to the body, however distant one's current thinking may be from the immediate demands of one's body and its environment.[98]

Anderson states that one of the advantages of viewing embodied cognition and its claims individually and on their respective merits, rather than examining the claims as a whole, is that it allows for the differentiation between the on-line and off-line aspects.[99] The distinction of these two aspects separate clearly the on-line aspects such as the claims, as discussed above, that cognition is situated, time-pressured and that cognitive work is off-loaded on to the environment. When we consider these claims we can see the mind is 'operating to serve the needs of a body interacting with a real-world

[95] Ibid.
[96] Ibid.
[97] Ibid.
[98] Anderson, 'How to Study the Mind: An Introduction to Embodied Cognition', p. 11.
[99] Wilson, 'Six Views of Embodied Cognition', p. 635.

situation.'[100] The off-line aspects of embodied cognition would include any cognitive activities where sensory and motor resources are necessary for mental tasks whose referents may be imaginary, or at best distant in temporal and special aspects. These would include: symbolic off-loading where external resources would be used to assist in the mental representation of things that were not present, as well as internal uses of sensorimotor representations in the form of mental simulations. An example of this would be counting with your fingers whilst remembering something specific where a mental calculation was necessary. In situations such as these Wilson argues that the body is serving the mind, rather than the mind operating to serve the body.[101]

We can see Wittgenstein's traits of off-line cognition is body based in the following passages:

> When I say: 'He was here half an hour ago'—that is, remembering it—this is not the description of a present experience. Memory-*experiences* are accompaniments of remembering.[102]

And again where he remarks:

> Someone does a sum in his head. He uses the results, let's say, for building a bridge or a machine.—Are you trying to say that he has not *really* arrived at this number by calculation? That it has, say, just 'come' to him in the manner of a kind of dream? There surely must have been a calculation going on, and there was. For he *knows* that, and how, he calculated; and the correct result he got would be inexplicable without calculation.[103]

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[100] Ibid.
[101] Ibid.
[102] Wittgenstein, *Philosophical Investigations*, p. 196.
[103] Ibid., #364.

And where he states that:

> The mental picture is the picture which is described when someone describes what he imagines.[104]

6.3 SITUATED COGNITION

Situated cognition is a form of cognitive extension[105] and is also:

> A many-splendored enterprise, spanning a wide range of projects in philosophy, psychology, neuroscience, anthropology, robotics and other fields.[106]

Indeed this could be applied to many of the words associated with situated cognition, such as embodied cognition, embodiment, distributed cognition and the extended mind, all new trends in cognitive science, albeit some central ideas expressed using these terms are divergent.[107] By contrast, it is interesting to examine what does not constitute situated cognition. Situated cognition has been described as opposed to: 'Platonism, Cartesianism, individualism, representationalism, and even computationalism about the mind.'[108] I suggest that Wittgenstein also would agree with Wilson and Clark here.

Situated cognition concerns activity and engagement, context and culture. A contemporary example of where this occurs would be the area of learning. Smith and Convey claim that cognition occurs in the context of other

[104] Ibid., #367.
[105] Robert A. Wilson and Andy Clark, 'How to Situate Cognition. Letting Nature Take its Course', in *The Cambridge Handbook of Situated Cognition*, ed. by Philip Robbins and Murat Aydede (Cambridge: Cambridge University Press, 2009), pp. 55-77 (p. 55).
[106] Robbins and Aydede, p. 9.
[107] Ibid., pp. 3-9.
[108] Wilson and Clark, p. 55.

people, whether that is personal contact, face-to-face contact, or social gatherings.[109] These encounters, in the context of other people, influence cognition and behaviour which include thoughts and feelings. It could be claimed that situated cognition is for 'adaptive behaviour'[110] and that 'our minds evolved for the on-line control of behaviour under the demands of survival rather than for detached puzzle solving or abstract cognition.'[111] This type of claim would suggest that there is a connection between cognition, motivation and action. Furthermore, Smith and Convey offer three examples of where this may be present: motivation shaping cognition; time-pressure shaping cognition; and mental representations being action orientated.[112]

> Cognition has been understood as:
>
> Implemented by abstract, amodal informational processes that proceed within an organism, isolated from the larger context except for a narrow sort of defined inputs and outputs.[113]

Furthermore, as discussed earlier, cognition can be considered as distributed 'not contained within minds, but implemented by systems that link minds with aspects of the physical and social environment.'[114] Here cognition is supported by aspects of the physical environment. Distributed cognition can occur across and between other people where shared meaning is the goal.

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[109] Eliot R. Smith and Frederica R. Convey, 'The Social Context of Cognition', in *The Cambridge Handbook of Situated Cognition*, ed. by Philip Robbins and Murat Aydede (Cambridge: Cambridge University Press, 2009), pp. 454-466 (p. 454).
[110] Ibid., p. 456.
[111] Ibid.
[112] Ibid., pp. 456-457.
[113] Ibid., p. 458.
[114] Ibid., p. 461.

Situated cognition emphasises the social context of behaviour. Again we see a Wittgensteinian theme:

> the fact that human behaviour in general takes place in, and is adapted to, a rich and complex network of group memberships, personal relationships, social motives and the socially constituted self.[115]

Research in situated cognition should be considered as an on-going exploration into cognitive extensions, and 'extensions of the mind into the physical and social world.'[116] This area of situated cognition within the cognitive sciences, and also in some areas of philosophy, is an approach in how better to understand the mind and cognition. While situated cognition has well established roots in both philosophical and psychological paradigms, it has nonetheless developed significantly since the late 1970s as an alternative approach to exploring the mind and cognitive abilities. Furthermore, this new view on the relationship between cognition, individuals and the environment, and how to study the mind and cognition, meant that the cognitive sciences were now:

> Embracing what Jerry Fodor (following Hilary Putnam) called 'methodological solipsism' and were, in effect, to bracket off the world beyond the individual in characterizing and individuating cognitive states and structures.[117]

[115] Ibid., p. 463.
[116] Wilson and Clark, p. 58.
[117] Ibid., p. 56.

6.4 Situated Concepts and Embodied Cognition: A Wittgensteinian Theme

In order to understand Wittgenstein's continual reference to context and the practical skill of understanding concepts, Gallagher's use of the term embodied cognition as part of the general concept of situated cognition[118] is being used here.

Rosch states that because mind and world only occur as part of complex situations, these *are* the situations that our 'interpretations, emotions, and motivations hold sway' and where 'situations are also the domain of actions.'[119] Similarly for Barsalou, relations that occur between concepts and situations regularly 'come into play during conceptual processing, thereby producing ubiquitous situation effects.'[120]

Similar to Wittgenstein's ideas concerning the central role that any particular 'context' plays in developing an understanding of what a concept is, or how a concept is used, Robbins and Aydede claim that 'situated cognition is the genus, and embodied, enactive, embedded, and distributed cognition and their ilk are species.'[121] Furthermore, they argue that the embodiment thesis, the embedding thesis and the extension thesis all contribute to a general claim

[118] Shaun Gallagher, 'Philosophical Antecedents to Situated Cognition', in *The Cambridge Handbook of Situated Cognition*, ed. by Philip Robbins and Murat Aydede (Cambridge: Cambridge University Press, 2009), pp. 35-51.
[119] Rosch, 'Reclaiming Concepts', pp. 73-74.
[120] Laurence W. Barsalou, 'Situating Concepts', in *The Cambridge Handbook of Situated Cognition*, ed. by Philip Robbins and Murat Aydede (Cambridge: Cambridge University Press, 2009), pp. 236-263 (pp. 247-248).
[121] Robbins and Aydede, p. 3.

that mental activity is dependent on the context in which it occurs.[122] Similarly, Wittgenstein's remarks on concepts, and particularly the attention he gives to the role that the 'context' plays, also show key aspects of the embodied and situated cognition approach:

> If the formation of concepts can be explained by facts of nature, should we not be interested, not in grammar, but rather in that in nature which is the basis of grammar?—Our interest certainly includes the correspondence between concepts and very general facts of nature.[123]

Barsalau states that it is important to distinguish between concepts that are acquired from experience and concepts that have been established by means of productivity and reasoning.[124] However, he also argues that it is possible for individuals to combine concepts that have been acquired from experience to 'represent'[125] concepts that have never been experienced, for example: striped water-falls; concepts that do not exist, for example: unicorns; and concepts that are impossible, for example: square circles.[126] Similarly, Wittgenstein remarks on concepts and how we cannot, in some contexts, deal with the same experience, while acknowledging that the concepts are also related:

> But how queer for this to be the logical condition of someone's having such-and-such an *experience*! After all, you don't say that one only 'has toothache' if one is capable of doing such-and-such.—From this it follows that we cannot be dealing with the same concept of experience here. It is different though related concept.[127]

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[122] Ibid., pp. 3-9.
[123] Wittgenstein, *Philosophical Investigations*, p. 195.
[124] Barsalau, 'Situating Concepts', p. 247.
[125] Ibid.
[126] Ibid.
[127] Wittgenstein, *Philosophical Investigations*, p. 178.

While Wittgenstein remarks on concepts and the practical skill used in understanding and situating them, he never refers either to concepts that have been acquired from experience, or combining concepts from experience to represent concepts that had not been experienced. However, evidence would suggest that he would support Barsalou's thesis. For Wittgenstein, the central concern is the individual interacting with the concept and as part of the environment or context:

> Though—one would like to say—every word has a different character on different contexts, at the same time there is *one* character it always has: a single physiognomy. It looks at us.—But a face in a *painting* looks at us too.[128]

As discussed in the previous chapter, if any context is repeated and becomes more frequent and, therefore, more familiar, an individual's understanding increases with the ability to combine varying concepts, depending on the context or situation that has been presented. Arguably, there is an element of predictability and inference occurring here also. Furthermore, the sensory, action and emotion systems of an individual's body provides, what Glenberg refers to as the 'grounding', for words and phrases, for example, to become meaningful and representative through our perception and interaction with objects, situations and contexts which symbols denote.[129]

Consider the following remarks from Wittgenstein:

[128] Ibid., p. 155.
[129] Glenberg, 'Embodiment as a Unifying Perspective for Psychology', p. 587.

> Think of this too: I can only see, not hear, red and green,—but sadness I can hear as much as I can see it.[130]

Here Wittgenstein is making a clear distinction between concepts that are recognised by the different sensory systems. (However, this needs to be distinguished from synaesthesia where a 'sensory experience normally associated with one modality occurs when another modality is stimulated.')[131] He states that we can see colours but that the concept of an emotion, in this case sadness, both can be seen and heard. In this example the emotion of sadness would be situated in a particular context. Similarly in the following remark Wittgenstein again refers to a sensation:

> What is the natural expression of an intention?—Look at a cat when it stalks a bird; or a beast when it wants to escape.
> ((Connexion with propositions about sensations.))[132]

Here he is drawing attention towards the connection between a proposition, a statement of fact, which is about a sensation. The intention of the individual, or in this example a cat or beast, is evident by their expression. This is a form of cognition as action, Wilson's first claim in the embodied cognition thesis.

Again the recurring theme of context and situated concepts is present when Wittgenstein remarks:

> I see a picture which represents a smiling face. What do I do if I take the smile now as a kind one, now as malicious? Don't I often imagine it with a spatial and temporal context which is one either of kindness or

[130] Wittgenstein, *Philosophical Investigations*, p. 178.
[131] Reber, p.732.
[132] Wittgenstein, *Philosophical Investigations*, #647.

> malice? […]. This is no way altered by the fact that I can also take the at first sight gracious situation and interpret it differently by putting it into a wider context.[133]

Wittgenstein's remarks on experience and understanding are also presented frequently though the *Investigations*. In particular he draws attention to how we can make a transition from one language-game to another, to move from one context of understanding to another, where, through experience, familiar paths are presented to the speaker. The inference here is that these paths lead us to another language-game where further contexts and concepts are presented.

> *Hearing* a word in a particular sense. How queer that there should be such a thing!
> Phrased *like this*, emphasized like this, heard in this way, this sentence is the first of a series in which a transition is made to *these* sentences, pictures, actions.
> ((A multitude of familiar paths lead off from these words in every direction.))[134]

And similarly in the following remark:

> We speak of understanding a sentence in the sense in which it can be replaced by another which says the same; but also in the sense in which it cannot be replaced by any other. (Any more than one musical theme can be replaced by another.)
> In the one case the thought in the sentence is something common to different sentences; in the other, something that is expressed only by these words in these positions. (Understanding a poem.)[135]

Barsalou proposed that:

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[133] Ibid., #539.
[134] Ibid., #534
[135] Ibid., #531.

> Concepts are not typically processed in isolation but are typically situated in background settings, events and introspections.[136]

While Barsalou's remarks presented here are clearly more empirical and resonate of contemporary cognitive psychology, such as the extended mind thesis, the embodiment thesis, situated cognition and embodied cognition, once again we can see similarities in Wittgenstein's remarks:

> Then has "understanding" two different meanings here?—I would rather say that these kinds of use of "understanding" make up its meaning, make up my *concept* of understanding.
> For I *want* to apply the word "understanding" to all this.[137]

In the *Investigations* Wittgenstein seldom focuses specifically on 'concepts of' yet his remarks illustrate his interest in concepts in general: 'We are not analysing a phenomenon (e.g. thought) but a concept (e.g. that of thinking), and therefore the use of a word.'[138] However, he consistently reminds us of how a concept, in general, is understood through its use in any language-game and the practical application of a concept in other situations: 'You learned the *concept* 'pain' when you learned language.'[139] What we need to be clear on here, however, is that nowhere in the *Investigations* does Wittgenstein offer explanations or definitions on concepts; he is remarking on what he urges us to observe and then understand so that they [concepts] may be used. For Wittgenstein it is important for us to understand concepts and their place, the context in which they [concepts] arise:

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[136] Laurence W. Barsalou, 'Simulation, Situated Conceptualization, and Prediction', *Philosophical Translations of The Royal Society*. B, 364 (2009), 1281-1289 (p. 1283).
[137] Wittgenstein, *Philosophical Investigations*, #532.
[138] Ibid., #383.
[139] Ibid., #384.

> It is almost as if 'seeing the sign in this context' were an echo of a thought.
> "The echo of a thought in sight"—one would like to say.[140]

It is in this focusing of the context for Wittgenstein that we learn what the concept is, and furthermore how to use it; the practical skill of acquiring the concept and the many and varied contexts to which it can belong is understood. For example:

> Different concepts touch here and coincide over a stretch. But you need not think that all lines are *circles*.[141]

Wittgenstein remarks: 'But how we group words into kinds will depend on the aim of the classification,—and on our own inclination […]'[142] while Barsalou claims that when objects and events are categorized 'conceptual knowledge about the respective categories becomes active to predict what is likely to happen next.'[143] (Classification and categorization were discussed in Chapter 4.) The following remark from Wittgenstein illustrates this point well:

> How does one teach a child (say in arithmetic) "Now take *these* things together!" or "Now *these* go together"? Clearly "taking together" and "going together" must originally have had another meaning for him than that of *seeing* in this way or that.—And this is a remark about concepts, not about teaching methods.[144]

In this remark we can imagine the child interacting with the environment and using both mind, in terms of cognition, and body, in terms of

[140] Ibid., pp. 180-181.
[141] Ibid., p. 164.
[142] Ibid., #17.
[143] Barsalou, 'Simulation, Situated Conceptualization, and Prediction', p. 1286.
[144] Wittgenstein, *Philosophical Investigations*, p. 177.

a social interaction, to learn arithmetic. Through language-games and repeated exposure to the concept, in this situation of arithmetic, the child has developed an ability to categorise the particular item. Furthermore, there is the probability that conceptual knowledge that has been associated with the particular category [of arithmetic] becomes active 'to predict relevant actions'.[145] It would appear that not only with situations, events or contexts that are repeated will the concept be learned, primarily through a practical application or skill as Wittgenstein advocates, but also inference (and inference that takes place in real time) and prediction are likely to take place too. Barsalou states that 'recognising the presence of certain objects is a powerful means of predicting the scene or situation likely to be present.'[146] Furthermore, it is noted that Barsalou claims that prediction also lies at the heart of language comprehension: 'a comprehender's task is to predict what the language means.'[147] Within the context of any given language-game, prediction and inference are likely to be apparent, although Wittgenstein advocates more for use and understanding. However, that is not to say that he overlooked prediction or inference:

> the prediction is a cause—and its fulfilment the effect. (Perhaps a physiological investigation could determine this.) So much, however, is true: we can often predict a man's actions from his expression of a decision. An important language-game. [148]

When this remark is examined, we can see that it refers to a physiological (bodily) state of an individual expression, in this instance, an

[145] Barsalou, 'Simulation, Situated Conceptualization, and Prediction', p. 1286.
[146] Ibid.
[147] Ibid.
[148] Wittgenstein, *Philosophical Investigations*, #632.

intention. Furthermore, reference to predicting an individual's behaviour from the expression of his intention, or decision within a given context [language-game], holds all the key aspects of situated or embodied cognition.

He further remarks:

> But this ought not to surprise us. Think of the fact that one can predict one's *own* future action by an expression of intention. [149]

And:

> This is how I think of it: Believing is a state of mind. It has duration; and that independently of the duration of its expression in a sentence, for example. So it is a kind of disposition of the believing person. This is shewn me in the case of someone else by his behaviour; and by his words.[150]

Similarly, Wittgenstein also remarks on inference and links this term to behaviour and disposition:

> That is an inference; but not one belonging to logic. An inference is a transition to an assertion; and so also to the behaviour that corresponds to the assertion. 'I draw the consequences' not only in words, but also in action.[151]

6.5 Empirical Domains for the Embodied Cognition Approach

There are several empirical domains in which embodied cognition has encouraged new insights and views about how the mind and cognition should be considered. I present just three of these claims here. They are not discussed

[149] Ibid., p. 163.
[150] Ibid.
[151] Ibid., #486.

in detail in this dissertation for reasons of scope and limitations;[152] however, the three domains are worth mentioning in the sense that they give a clearer idea as to why embodied cognition can be seen as empirical and ground-breaking.

'Visual consciousness is typically viewed as a process within the brain.'[153] However, the content of a visual experience can also be seen as experiential — 'that is, represented from a point of view, active and attentional'[154] — and it appears that none of these characteristics seem to be able to describe 'the content of a neural representational system'.[155] Noe also claims that an egocentric viewpoint of the world can be experienced by both animals and people, and to a point can phenomenologically can attend to parts of that experience that can then be explored through movements, albeit appropriate, of the head and the body while, simply put, neurons cannot.[156] For O'Regan and Noe, conscious visual experience is a skilful action that occurs in real time and in a specific environment or context. It is simply something that we can do.[157]

As this dissertation will show in the following chapter, Wittgenstein's concepts are participatory and always context-dependent. As discussed in

[152] For an extensive discussion on the empirical domains for the embodied cognition approach and its application see: R. W. Gibbs, *Embodiment and Cognitive Science* (Cambridge: Cambridge University Press, 2006).
[153] Wilson and Foglia, 'Embodied Cognition', [accessed 08 August 2012] (p. 21).
[154] Ibid., p. 22.
[155] Alva Noe and Evan Thompson, 'Are there Neural Correlates of Consciousness?', *Journal of Consciousness Studies*, 11 (2004), 3-28 (p. 3).
[156] Kevin J. O'Regan and Alva Noe, 'A Sensorimotor Account of Vision and Visual Consciousness', *Behavioral and Brain Sciences*, 25 (2001), 939-1031 (pp. 940-941).
[157] Ibid.

chapter five it has been a traditional approach to see concepts as 'context-independent amodal symbols'.[158] However, research strongly indicates that conceptual abilities include and are structured in terms of bodily activity. Evidence also suggests that people construct and use concepts differently depending on the context or situation which they are in, and conceptualization can be different across individuals and for the same individual in distinct environments.[159]

Memory has also been cited as one of the empirical domains of the embodied cognition approach. (Memory was also discussed in Chapter 4.) 'Traditional accounts would claim that information storage and retrieval should be featured as essentially independent from sensorimotor mechanisms';[160] however, empirical evidence could suggest that memory does not appeal to the 'semantic relatedness' of something. A location, if appropriate, for example, would aid memory combined with the imagined embodied actions within the location or environment which would help the individual to retrieve the information required.[161] Furthermore, it has also been shown that embodiment effects on memory have been found 'in accomplishing particular tasks, including reasoning and language understanding.'[162]

[158] Wilson and Foglia, 'Embodied Cognition', [accessed 08 August 2012] (p. 24).
[159] Ibid.
[160] Ibid.
[161] Ibid.
[162] Ibid.

6.6 CONCLUSIONS

In conclusion, we can see as Borghi and Cimatti state 'that human body is a social entity' and that 'the body is always considered as an acting body.'[163] It is also clear that distributed cognition, which is 'consistent with Wittgenstein's philosophy',[164] or situated cognition and extended minds incorporate two Wittgensteinian themes: first, 'some degree of opposition to the identification of cognition with representation';[165] and secondly, 'an apprehension of the metaphorical nature of conceiving of mind as inner.'[166]

As we have seen, while Clark provides an analysis of embodied and situated cognition,[167] Anderson suggests the following distinction:

> In my view, it is the centrality of the physical grounding project that differentiates research in *embodied* cognition from research in *situated* cognition, although it is obvious that these two research programs are complementary and closely related […]. Although related to and continuous with situated cognition, [embodied cognition] takes the physical grounding project as its central research focus.[168]

Similar claims and arguments are echoed by other researchers. Clancey states that mental representations have been considered as the essential to cognitive science,[169] while Clark draws attention back to the central thesis:

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[163] Borghi and Cimatti, p. 763.
[164] Susswein and Racine, p. 192.
[165] Ibid., p. 185.
[166] Ibid.
[167] Gallagher, p. 1.
[168] Anderson, 'Embodied Cognition: A Field Guide', p. 92.
[169] William J. Clancey, 'Scientific Antecedents of Situated Cognition', in *The Cambridge Handbook of Situated Cognition*, ed. by Philip Robbins and Murat Aydede (Cambridge: Cambridge University Press, 2009), pp. 11-34 (p. 12).

> Of biological cognition as profoundly 'action-oriented' – geared not to the creation of rich, passive inner models of the world, but to the cheap and efficient production of real-world action in real-world context.[170]

Clark's description here is echoed throughout Wittgenstein's descriptions of concepts and of forms of life, behaviour and cognition as action-oriented.

As discussed, there are many terms that can be used to describe cognition: embodied cognition, situated cognition, distributed cognition, the extended mind. This would support the suggestion that there is a 'growing interest in the idea that, to use a common vernacular, cognition is a not-just-in-the-head phenomenon.'[171] Furthermore, this is something that Wittgenstein had also suggested in *The Blue Book:*

Perhaps the main reason we are so strongly inclined to talk of the head as the locality of our thoughts is this: the existence of the words 'thinking' and 'thought' alongside of words denoting (bodily) activities, such as writing, speaking, etc., makes us look for an activity different from these but analogous to them, corresponding to the word 'thinking'.[172]

It is remarkable to see how insightful Wittgenstein was in 1933-1934 when referring to thoughts and bodily activities, or social practices combined with thinking. Wittgenstein's remarks as seen here are arguably the cornerstone of embodied cognition. In terms of contemporary psychology 'Wittgenstein's

[170] Andy Clark, 'Visual Awareness and Visuomotor Action', *Journal of Consciousness Studies*, 6 (1999), 1-18 (p. 1).
[171] Susswein and Racine, p. 185.
[172] Wittgenstein, *The Blue Book*, p. 7.

insistence that conceptual questions of identity are distinct from empirical issues of causation' has enabled a clear distinction in a very important issue: that the processes that generate cognition which are distributed, situated or extended is distinct from the suggestion that cognition itself can be considered as distributed, situated or extended.[173]

As we have seen, what Wittgenstein commenced as a rejection of mentalism and to see 'thinking' and 'thoughts', or as it is now referred to as 'cognition', in a new light, has developed into a discussion on how the mind should now be reconsidered, or as Nunez states: 'the time to develop a richer and deeper science of the mind has come.'[174] Testimony to the development and on-going research into the embodiment thesis is Glenberg's claim that the principles of embodiment can be applied to specific areas within psychology such as development, language and memory, emotion and social psychology, theory of mind, psychological disorders, and educational psychology.[175] While he agrees with Baumeister et al. that psychology has become 'the science of self-reports and finger movements'[176] he also cites that 'work on embodiment has a long way to go to unify psychology'[177] but is hopeful that embodiment will develop towards 'regrounding psychology in behaviour'[178] — a task that

[173] Susswein and Racine, p. 194.
[174] Nunez, (p. 59).
[175] Glenberg, 'Embodiment as a Unifying Perspective for Psychology', p. 589.
[176] R. F. Baumeister, K. D. Vohs and D. C. Funder, 'Psychology as the Science of Self-reports and Finger Movements: Whatever Happened to Actual Behaviour?', *Perspectives on Psychological Science*, 2 (2007), 396-403, in Glenberg, 'Embodiment as a Unifying Perspective for Psychology' p. 594.
[177] Glenberg, 'Embodiment as a Unifying Perspective for Psychology', p. 594.
[178] Ibid.

Wittgenstein began in several of his works, but most notably, as we have seen, in the *Investigations*.

In the following chapter I show how Wittgenstein's language-game is where concepts need to be seen as 'participatory', a phrase that Rosch[179] uses consistently, in order to understand how we make sense of the world. Concepts should be considered as engaging with cognition, which is action-oriented, and with the environment, rather than being considered as objective and in isolated terms. I will show how the language-game can situate concepts within a context, and through social, cultural and rule-governed activities how concepts are always participatory and, therefore, meaningful and useful.

[179] Rosch, 'Reclaiming Concepts', pp. 61-77.

CHAPTER VII

THE LANGUAGE-GAME: CONCEPTS AS PARTICIPATORY

'Language is an instrument. Its concepts are instruments.'[1]

The quote given above at the head of this chapter summarises, for me, what Wittgenstein means when he uses the term 'concept'. For him, concepts are part of the environment and context in which individuals engage, through mind and bodily activity, and where the concept is participatory and a form of action:

> 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.[2]

As I have stated previously, 'participatory' is Rosch's term to describe how concepts should be considered as part of the environment and where situations are 'the domain of actions'.[3] In this chapter I look at some of Wittgenstein's descriptions and remarks on and about concepts to show how they are not only situated within a context but also to illustrate how they [concepts] are participatory and a form of action.

Throughout this dissertation I have used the term context repeatedly to emphasise the importance of Wittgenstein's key element. As discussed in the previous chapter the term concept, or environment, is also key to understanding the embodied cognition thesis. It is clear at this point that it is the context that

[1] Wittgenstein, *Philosophical Investigations*, #569.
[2] Ibid., #43.
[3] Rosch, 'Reclaiming Concepts', p. 74.

gives the concept its meaning, and it is its use that identifies the term within a specific setting. Wittgenstein's rule-governing elements and his communal and social features are also all reliant on the context for any given language-game to develop.

As we know Wittgenstein is vague in his remarks and descriptions. As Monk states that 'for without having the moral pointed out, so to speak, it is often difficult to see the point of his remarks.'[4] Furthermore, his remarks are not explanations, and nor does Wittgenstein ever infer that they are, in fact quite the opposite; this, in some respects, makes the task of commenting on his investigations into language more difficult. The task, however, of showing how the language-game is the context for which we engage with concepts, that are also participatory, is not difficult, as we shall see.

I propose that there seem to be no limits on the accessibility of meaning within a language-game. It is infinite yet always context-dependent. Wittgenstein argues that meaning can only be found when it can be shared, thus the description of language as a communal and social system (and his rejection of a private language, as outlined in Chapter 3). Wittgenstein, however, is his own worse critic. Despite the terseness throughout his writings, his remarks show language from a new viewpoint; from this position it is obvious that this is a viewpoint, that for many, is still held today: these remarks show language as a natural discourse that evolves depending on the theme and

[4] Monk, *Ludwig Wittgenstein – The Duty of Genius*, p. 338.

context, as compared with other more theoretical accounts of language such as the developmental stages proposed in the Piagetian or Chomskyan viewpoint.

As discussed in Chapter 2, the term language-game is one that Wittgenstein introduces early in the *Investigations* and it is a term that is particularly prominent in his later work. Wittgenstein wants to teach us this term as we encounter his philosophy and his ideas on language and his immense interest in 'the natural history of human beings'.[5] He shows us how to use it [the language-game] as a tool to understand both his philosophical psychology, but more specifically, his views on language and psychology. For Wittgenstein there is always this connection between the two. He describes the language-game as an action; for him language is behaviour and its essence lies in the nature of its use (although this should never be confused with viewing Wittgenstein as a behaviourist, as I have argued in Chapter 3). He considers language always as a contextual and systematic process.

In this chapter I present a series of arguments to show that Wittgenstein's language-game is a theory of language. However, while I accept that Wittgenstein would reject the term 'theory' as a label I suggest that he would not reject my reasoning or my description of his language-game and how it can, in theoretical terms, explain the practice of language. I also show that his remarks on concepts and his investigations into the workings of language show that a language-game *is* the context, or environment, where

[5] Charles Travis, *Thought's Footing* (Oxford: Oxford University Press, 2006), Introduction.

concepts become participatory and part of the social interaction between mind, body and world.

Wittgenstein's remarks are shown to be 'about concepts' rather than definitions 'of' concepts. They show concepts not as isolated and objective 'things', 'concept' *qua* concept, but rather concepts as part of the environment. Wittgenstein neither regarded nor described concepts as an inner image or thought that was related to the external world. For him, this would separate the mind and body (a dualist position) which he was opposed to. This opposition is also seen in his rejection of mentalism and also in what he considered as the limitations of behaviourism. For him, meaning, that is, the use of the word, is an action, thus I use Rosch's term 'participatory'[6] to describe Wittgenstein's idea of language and, therefore, concepts and their use and meaning. For Rosch, as stated in Chapter 4, 'concepts have a participatory, not an identifying, function in situations'[7] (as opposed to the cognitivist's view of the classical approach[8] that 'concepts are definitions, by which is meant equivalent and substitutable string of symbols').[9]

7.1 The Language-Game as Theory of Language

In order to determine if the language-game complies with the essential characteristics of a theory, we must first look at this concept 'theory' and agree

[6] Rosch, 'Reclaiming Concepts', p. 73.
[7] Ibid.
[8] For further reading see: Jerry A. Fodor, *Concepts: Where Cognitive Science Went Wrong* (Oxford: Clarendon Press, 1998).
[9] Rosch, 'Reclaiming Concepts', p. 62.

a satisfactory definition. However, it is also worth mentioning that Rosch criticises the term 'theory' and states that:

> the word theory manages to evoke and give the impression of satisfying two problematically contradictory understandings of the world.[10]

She argues that life activities and experience do not occur as isolated units but rather within independent meaningful wholes which a laboratory experiment could never reflect.[11] Rosch's term 'meaningful wholes' refers to:

> world knowledge, beliefs (which are generally not organized into anything like coherent theories), expectations, desires, habits, skills, intuitions, the body, the functioning of the senses, tacit knowledge, everything that is un- or non-conscious, customs, values, the environment, and so on.[12]

Wittgenstein, without doubt, would endorse this description of 'meaningful wholes' and would use it as a description of how concepts are understood within contextual settings.

However, from a theoretical perspective, a theory is defined as:

> A set of propositions which provides principles of analysis or explanation of a subject-matter. Even a single proposition can be called a theory.[13]

(It is also interesting to note that since the 1980s, a 'theory' is used in some academic contexts (chiefly in literary and cultural studies) not as a general concept but for a particular kind of theory, inspired by thinkers like Lacan,

[10] Ibid., p. 70.
[11] Ibid.
[12] Ibid.
[13] Mautner, p.563.

Foucault and Derrida, usually with a tendency towards relativism in respect of knowledge and interpretation.)[14]

Harley, however, suggests a more linear definition: for him the term theory means 'to have a general explanation of how something works.'[15] Although simplistic in its explanation, in this case, it nonetheless describes effectively exactly what the reader is looking for in the term language-game.

Now, let us examine two scenarios: if we take the sentence 'even a single proposition can be called a theory'[16] it is without doubt that this can be applied to the language-game. Wittgenstein's description of the practice of language in use, and meaning as use, are logical unambiguous propositions. For him, the meaning of a word is always contextual, and this is why he describes the language-game process as one that is shared and social yet always rule-governed, as any 'game' is. Language for Wittgenstein is also about 'performance'; again I draw your attention to Wittgenstein's interest in 'behaviour' and 'action' where he sees language and its use as intrinsically linked to these concepts rather than him viewing language as a 'competence' for example, which is more akin to a Chomskyan view of language.

When the theoretical term 'theory' is applied in relation to the subject of 'language' it suggests that a theory of language would include a description of the process or processes involved and not just a description of the action.

[14] Ibid.
[15] Harley, p. 4.
[16] Mautner, p. 563.

However, I suggest that, for Wittgenstein, the process *is* the action. This process allows for language and, therefore, concepts to emerge depending on the frame of reference and the conditions of the context. It is possible that Wittgenstein lacks clarity, even though as Magee states his prose is 'distinctive and compelling'.[17] The process, for Wittgenstein, *is* the behaviour rather than a description of the cognitive process (or mental process) involved in the acquisition of a concept. However, similarly, we could apply Rosch's description of 'life activities' and 'meaningful wholes'[18] to Wittgenstein's language-game. Her descriptions of:

> world knowledge, beliefs […] expectations, desires, habits, skills, intuitions, the body, the functioning of the senses, tacit knowledge, everything that is un- or non-conscious, customs, values, the environment, and so on.[19]

is exactly how Wittgenstein would describe concepts; they are the action and they are participatory.

Wittgenstein does not deny that there is a mental process – 'To deny the mental process would mean to deny the remembering'[20] – rather, he remains limited in his remarks. We must remember that Wittgenstein is rejecting mentalism (now referred to as 'cognition' and 'cognitive processing' since the cognitive revolution). This can be seen clearly when he consistently refers to 'the mind' and 'the mental'. An example of where we see this reference to

[17] Magee, *Confessions of a Philosopher*, p. 149.
[18] Rosch, 'Reclaiming Concepts', p. 70.
[19] Ibid.
[20] Wittgenstein, *Philosophical Investigations*, #306.

some types of mental acts, processes and states can be seen in the following passages:

> Negation: a 'mental activity'. Negate something and observe what you are doing.—Do you perhaps inwardly shake your head? And if you do—is this process more deserving of our interest than, say, that of writing a sign of negation in a sentence? Do you now know the *essence* of negation?[21]

> But when you say 'I intend to go away', you surely mean it! Here again it just is the mental act of meaning that gives the sentence life. If you merely repeat the sentence after someone else, say in order to mock his way of speaking, then you say it without the act of meaning.[22]

Both of these quotations refer to Wittgenstein's descriptions of the mental act itself. While Wittgenstein does not elaborate or offer any theoretical explanations of this specific practice he is nonetheless acknowledging not just their ['the mind' and 'the mental'] existence but also that they have a specific function even if he does not comment on this function in-depth. When Wittgenstein refers to the mental process he states that:

> Is a sum in the head less real than a sum on paper?—Perhaps one is inclined to say some such thing; but one can get oneself to think the opposite as well by telling oneself: paper, ink, etc. are logical constructions out of our sense-data.[23]

Similarly he states that:

> How does the philosophical problem about mental processes and states and about behaviourism arise?—The first step is the one that altogether escapes notice. We talk of processes and states and leave their nature

[21] Ibid., #547.
[22] Ibid., #592.
[23] Ibid., #366.

> undecided. Sometime perhaps we shall know more about them—we think.[24]

Here Wittgenstein, for the first time, makes a connection between mental processes and states, and their possible relation to an individual's behaviour. While he is cautious, as always, to describe something he cannot fully support, he nonetheless infers that we ignore or overlook their nature, and rely on knowing more about them in the future. However, I suggest that Wittgenstein could already see that there was connection between the two, that both mind (for him 'mental process and states') and the body (again for him 'behaviourism') interact with one another. They are not separate and should therefore not be considered as such. Again, we see his rejection of dualism coming to the surface. He continues to state that:

> But that is just what commits us to a particular way of looking at the matter. For we have a definite concept of what it means to learn to know a process better. (The decisive movement in the conjuring trick has been made, and it was the very one that we thought quite innocent.)—And now the analogy which was to make us understand our thoughts falls to pieces.[25]

Here again Wittgenstein makes reference to an 'unexplored medium' even though he wants us to know that he is not denying 'mental processes'. Perhaps, for Wittgenstein, this is all that he can say but I would argue that this is not because he has not formed any ideas on what function mental processes serve, or what an unexplored medium may refer to, but because his interest, at that time, lay in human nature and the use of language. Furthermore, as we saw in

[24] Ibid., #308.
[25] Ibid.

Chapter 3 Wittgenstein could see the limitations of behaviourism; perhaps now also he is seeing how, when only we emphasise mental processes or cognitive processing, we fail to understand the individual and, thus, their interaction with the environment.

While exploring Wittgenstein's remarks about concepts in Part II of the *Investigations*, it is imperative to determine not only clarity around what he meant precisely but also to determine, in as far as possible, what exactly he did not say or pursue. It is only in light of this type of information that the real intent of his investigations into language will become apparent and understandable, particularly in relation to his descriptions on concepts and their role in the environment:

> After several unsuccessful attempts to weld my results together into such a whole, I realized that I should never success. The best that I could write would never be more that philosophical remarks; my thoughts were soon crippled if I tried to force them on in any single direction against their natural inclination.—And this was, of course, connected with the very nature of the investigation. For this compels us to travel over a wide field of thought criss-cross in every direction.—The philosophical remarks in this book are, as it were, a number of sketches of landscapes which were made in the course of these long and involved journeyings.[26]

The following are some further examples of the type of psychological concepts that Wittgenstein remarks on in part II of the *Investigations:*

> Can one keep hold of an understanding of meaning as one can keep hold of a mental image? That is, if one meaning of a word suddenly strikes me,—can it also stay there in my mind?[27]

[26] Ibid., Preface.
[27] Ibid., p. 149.

> What makes my image of him into an image of *him*? […]
> (But it is also possible for a face to come before my mind, and even for me to be able draw it, without my knowing whose it is or where I have seen it).[28]

> Then psychology treats of behaviour, not of the mind?
> What do psychologists record?—What do they observe? Isn't it the behaviour of human beings, in particular their utterances? But *these* are not about behaviour.[29]

This last quotation in particular shows how Wittgenstein observed how psychologist separated mind and behaviour and their [psychologists] interpretation of language (utterances) as *distinct* from behaviour. He reinforces this line of thinking when he further questions whether a man 'out of humour' is a 'report about his behaviour or his state of mind?'[30] Again, this statement also clearly reinforces the arguments presented in Chapter 3 that Wittgenstein is not a behaviourist but is interested in human behaviour and action to explain how concepts are understood and subsequently used.

Wittgenstein gives an excellent analogy when he explains how our language-game always rests on an implied presupposition:

> I describe a psychological experiment: the apparatus, the questions of the experimenter, the actions and replies of the subject—and then I say that it is a scene in a play.—Now everything is different. So it will be said: If this experiment were described in the same way in a book of psychology, then the behaviour described would be understood as the expression of something mental just because it is *presupposed* that the subject is not taking us in, hasn't learnt the replies by heart, and other things of the kind.—So we are making a presupposition?[31]

[28] Ibid., p. 151.
[29] Ibid., p. 153.
[30] Ibid.
[31] Ibid.

Again, in this statement Wittgenstein shows what he considers to be an association between 'the mental' and its relation to behaviourism in the sense that the subject 'hasn't learnt the replies by heart'.

> How should we counter someone who told us that with him understanding was an inner process? […] then we shall have to draw his attention to the criteria which would demonstrate his capacity, and on the other hand to the criteria for the 'inner states'.[32]

Similarly, Wittgenstein states:

> Are the words "I am afraid" a description of a state of mind?
>
> I say 'I am afraid'; someone else asks me: 'What was that? A cry of fear; or do you want to tell me how you feel; or is it a reflection on your present state?'—Could I always give him a clear answer? Could I never give him one?[33]

Here Wittgenstein is showing how a description of a state of mind cannot be separate or talked about independently from the behaviour, or action, of the individual: 'This is how I think of it: Believing is a state of mind.'[34] And again we see that 'believing' for Wittgenstein is an action.

> (The temptation to say 'I see it like *this*', pointing to the same thing for 'it' and 'this'.) Always get rid of the idea of the private object in this way: assume that it constantly changes, but that you do not notice the change because your memory constantly deceives you.[35]
>
> The *interest* of the experiences one has while speaking and of the intention is not the same. (The experiences might perhaps inform a psychologist about the 'unconscious' intention.).[36]

[32] Ibid., p. 155.
[33] Ibid., p. 160.
[34] Ibid., p. 163.
[35] Ibid., p. 177.
[36] Ibid., p. 185.

Wittgenstein's uses of terms in the above two quotations such as 'seeing', 'get rid', 'assume', 'change', 'deceives', 'experiences', 'speaking', and 'intention' are all action words. These are movements and activities that involve both the mind and body. Furthermore, for Wittgenstein, these types of actions are always context-dependent. *This* is how we engage and learn about the concept. The context, or the surrounding is not provided by particular 'mental accompaniments',[37] but, as Glock states:

> (a) the subject's abilities; (b) the 'whole history of the incident', by what went on before and after; (c) the social surroundings, that is, the existence of certain language-games in the subject's linguistic community.[38]

Wittgenstein's description of the use of language is the bedrock of any context; from here meaning and understanding can naturally take their place. Dummett, however, states that our problem is:

> What is it that a speaker knows when he knows a language, and what, in particular, does he thereby know about any given sentence of the language. Of course, what he has when he knows the language is practical knowledge, knowledge how to speak the language: but this is no objection to its representation as propositional knowledge; mastery of a procedure, of a conventional practice, can always be so represented […]. Thus what we seek is a theoretical representation of a practical ability. Such a theoretical representation of the mastery of an entire language is what is called by Davidson, and will be called here, 'a theory of meaning' for the language.[39]

Can Dummett's explanation here refer also to Wittgenstein's description of the practice of language? Of course not, for it is this calling for a theory of

[37] Glock, *A Wittgenstein Dictionary*, p. 129.
[38] Ibid.
[39] Michael Dummett, 'What is a Theory of Meaning? (II)', *Truth and Meaning*, ed. by G. Evans and J. McDowell (Oxford: Oxford University Press, 1976); repr. In *The Seas of Language* (Oxford: Oxford University Press, 1993); in Travis, *Thought's Footing*, p. 11.

meaning that he so vehemently rejects. Simply, for Wittgenstein, language and its use and, therefore, meaning, is an activity: we do not speak of words but rather of what the word means or words mean. Dummett continues to state, in Travis' *Thought's Footing (2009)*, that:

> A conception of meaning — that is, a choice of a central notion for the theory of meaning — is adequate only if there exists a general method of deriving, from the meaning of sentence as so given, every feature of its use, that is, everything that must be known by a speaker if he is to be able to use that sentence correctly.[40]

However, for Wittgenstein if a word is to be used significantly and with understanding, then it must adhere to certain rule-governing in terms of it meaning something rather than nothing, thus meaning and use are interdependent and integral to one another. The later Wittgenstein shifts the emphasis from 'naming' to 'how one uses language' which can be seen in the following remark: 'And the *meaning* of a name is sometimes explained by pointing to its *bearer*.'[41]

7.2 Concepts as Participatory

As discussed in Chapter 4 some of the approaches to concepts in cognitive psychology show traits of philosophical influences and possible philosophical presuppositions, such as Eleanor Rosch's prototype view and her use of Wittgenstein's term 'family resemblance'. Furthermore, Rosch refers to how a philosopher's view of categories entered psychology explicitly in the form of

[40] Ibid., p. 12.
[41] Wittgenstein, *Philosophical Investigations*, #43.

concept learning research in the 1950s. Led by the work of Jerome Bruner and his associates[42]

> subjects were asked to learn categories which were logical sets defined by explicit attributes, such as *red* and *square*, combined by logical rules, such as *and*. Theoretical interest was focused on how subjects learned which attributes were relevant and which rules combined them.[43]

For psychology, the task to determine whether a set of propositions constitutes a theory is easier because these logical propositions must be supported by empirical evidence. For example, in the case of the exemplar view research was carried out by Medin and Schaffer (1978) while Keil (1989) and Murphy and Medin (1985) carried out research on the knowledge approach.

'The study of concepts is only a part of the study of meaning'[44] which brings us back to Wittgenstein's distinction between 'concepts of' and 'concept' *qua* concept. Concepts can also be considered as 'the building blocks of thought'[45] and should always 'be studied in the context of a system of interrelated functions.'[46] The functions of classifying, understanding, explaining, predicting, reasoning and communicating are integral to 'being' in the world, to human nature and human behaviour. 'Concepts are influenced by what we already know, but a new concept can also effect a change in our

[42] J. S. Bruner, J. J. Goodnow and G. A. Austin, *A Study of Thinking* (New York: John Wiley, 1956); in Rosch, 'Reclaiming Concepts', p. 63.
[43] Rosch, 'Reclaiming Concepts', p. 64.
[44] Lloyd K. Komatsu, 'Recent Views of Conceptual Structure', *Psychological Bulletin*, 111 (1992), 500-526 (p. 504).
[45] Solomon, p. 99.
[46] Ibid.

general knowledge.'[47] As we have seen Rosch claims that concepts occur only in actual situations, that is real situations:

> in which they function as participating parts of the situation rather than as either representations or mechanism for identifying objects; concepts are open systems by which creatures can learn new things and can invent; and concepts exist in a larger context – they are not the only form in which living creatures know and act.[48]

Rosch explains how concepts 'participate in situations in innumerable flexible ways'.[49]

Furthermore, she states that:

> Concepts and categories do not represent the world in the mind; they are a *participating part* of the mind-world whole of which the sense of mind (of having a mind that is seeing or thinking) is one pole, and the objects of mind (such as visible objects, sounds, thoughts, emotions, and so on) are the other pole. Concepts — red, chair, afraid, yummy, armadillo, and all the rest — inextricably bind, in many different *functioning* ways, that sense of being or having a mind to the sense of the objects of mind.[50]

According to Rosch, '(W)e think of mind and world as separate things. We also think of bodies (or organisms) and environments as separate things.'[51] However, looked at from a different perspective, this is obviously wrong:[52]

> No matter how abstract and universal a concept may appear to be (*square root*, for example), that concept actually occurs only in

[47] Murphy, *The Big Book of Concepts*, p. 60.
[48] Rosch, 'Reclaiming Concepts', pp. 61-62.
[49] Ibid., p. 73.
[50] Ibid., p. 72.
[51] Ibid.
[52] Ibid.

> specific, concrete situations. Real situations are information rich complete events.[53]

This is also resonate of Wilson's description of embodied cognition when she refers to 'real-time' and 'real-world'.

> One does not stand in thin air gaping at a tree as one does in philosophical examples; there is always a rich context, so rich that it has been argued that it can never be fully specified (Searle, 1983). Situations/contexts are mind-world bonded parts of entire forms of life. Context effects tend to be studied in psychological research only as negative factors, artefacts that invalidate somebody's experiment or theory. But it may be that contexts or situations are the unit that categorization research really needs to study.[54]

When Rosch critiques the prototype view in her article *Reclaiming Concepts* she asks the reader to consider the colour red: is red hair as good an example of your idea or image of *red* as a red fire engine? Is a dentist's chair as good an example of *chair* as a dining-room chair? Such questions are nonsense within the classical view of categories where something either is a category member or it isn't, and all members are equivalent.[55] Similarly, Wittgenstein makes reference to memory and trying to recall the *exact* colour 'red':

> Something red can be destroyed, but red cannot be destroyed, and that is why the meaning of the word 'red' is independent of the existence of a red thing.—Certainly it makes no sense to say that the colour red is torn up or pounded to bits. But don't we say 'The red is vanishing'? And don't clutch at the idea of our always being able to bring red before our mind's eye even when there is nothing red anymore.[56]

[53] Ibid.
[54] Ibid.
[55] Ibid., p. 65.
[56] Wittgenstein, *Philosophical Investigations*, #57.

For Wittgenstein, 'a concept forces itself on one'[57], thus it is part of the situation an individual is engaged with. However, while mind and body are part of the interaction, Wittgenstein wants us to see simply that language is a tool. Wittgenstein refers to 'the mental' and 'the mind' as an object or something that exists rather than a process, unlike psychoanalysis which had by this time systematically declined as a prominent discipline, as behaviourism was soon to do. Also for Wittgenstein it is always the person that he is most interested in, and their humanity, rather than proposing explanations or theoretical accounts. Finally it is the late 1940s and behaviourism is still the more prominent tradition in psychology; the emphasis is still on overt and external reactions rather than any form of mental process or explanation of mental states. However, as we have seen in Chapter 4 the 'cognitive revolution' is imminent.

7.3 The Language-Game where Concepts are Participatory

Textbooks in psychology frequently refer to the language-game as a theory of language. This is because they consider a theory to be a set of principles that deduce a logical and sound conclusion or, as Harley claims, 'to present a general explanation of how something works.'[58] While Wittgenstein would vehemently reject the notion of his language-game as a theoretical tool, it is still nonetheless a 'tool' where we use the environment to engage with the concept that is participatory. His description of language as use, and language as a form of life, are the fundamental principles that lead to the theory.

[57] Ibid., p. 174.
[58] Harley, p. 4.

In the *Investigations,* Wittgenstein's remarks and investigations into concepts exemplifies his real interest in 'the mind' and 'the mental', despite his rejection of reservations about psychology as a science: 'For in psychology there are experimental methods and *conceptual confusion.*'[59] When he describes these concepts he exposes his understanding of what it is to have a concept and what it is to use a concept.

For any theory to work, to be used as a tool, it must earn its keep. It must be seen and used as a framework for statements or propositions to logically fit together. The question now becomes does the language-game, as the context where concepts are participatory, fulfil that representation?

Wittgenstein first introduces the term language-game at #7 in the *Investigations* after he has introduced us to what he refers to as 'primitive language' in #2 he comments that:

> A child uses such primitive language forms of language when it learns to talk. Here the teaching of language is not explanation, but training.[60]

.

Wittgenstein shows us the term primitive language in order to introduce us to the ideas that this is not how people construct or use language. Words and concepts do not have definite meanings and use, but multiple purposes where the context enables the interpretation of the word. There is also a notion of the mastery of language, a phrase that Travis uses frequently, to show the ease and proficiency of language use but without the regularities of each word having to

[59] Wittgensten, *Philosophical Investigations*, p. 197.
[60] Ibid., #5.

conform to a specific definition. It is this lack of structure, or this fuzziness, that allows the term context to be of essential value here.

Wittgenstein presents us with an interesting analogy where language can be seen as a tool, an instrument. In the *Tractatus,* he considered language as a picture theory of meaning, while in the *Investigations* he replaces the picture theory with a 'toolbox' theory of language: 'Language is an instrument. Its concepts are instruments.'[61] Instruments and tools, like any other concepts, can be categorised in accordance with their relevant characteristics and features and the various procedures and functions that can be performed with them. Similarly, in the toolbox analogy, the notion of the meaning of a linguistic expression is replaced by its utterance, the expression, and ultimately, by its use:

> Think of the tools in a toolbox: 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 function of these objects. (And in both cases there are similarities.)[62]

For Wittgenstein, 'naming' can also be considered a linguistic activity, even a language-game, and similar to speaking a language and using concepts, the emphasis is always on 'performance' rather than 'competence'. However, a significant aspect to consider in naming is the notion of a link between the speaker and the world: establishing this link *is* the very meaning of the word.[63] It is an act of recognition on the part of the speaker. What is in question here is

[61] Wittgenstein, *Philosophical Investigations,* #569.
[62] Ibid., #11.
[63] Roger Scruton, *Modern Philosophy – An Introduction and Survey* (London: Pimlico, 1994), p. 264.

how these words are connected to the world and how we understand the rules attached to understanding this said connection? This also highlights the notion of a theory of meaning.

The process of knowing as part of using language is based on the notion that we must know which object the name refers to, therefore we must be able to identify the object:

> We can therefore say that if naming something is to be more than just uttering a sound while pointing to something, there must also be, in some form or other, the knowledge of how in the particular case the sound is to be used.[64]

However, I argue that it may be possible that we may not have any particular thoughts about the object, specific beliefs or knowledge, at that stage. This of course does not mean that a concept cannot be understood and used. Indeed the exemplar view of concept development proposed by cognitive theorists could be used in this instance, as could the prototype and knowledge approach.

The *Investigations* opens with an Augustinian explanation of language. Here it is Wittgenstein's intention to draw attention to how Augustine portrays language as essentially a correlation between words (noun-naming objects) and meanings and how Wittgenstein can explicate, and perhaps in some ways as shown in the *Investigations,* deconstruct this picture.[65] It is his intention to

[64] Wittgenstein, *The Brown Book*, p. 173.

[65] Augustine, however, held a much more sophisticated theory of language that that as ascribed to him by Wittgenstein in this picture. See, Gerard Watson, 'St Augustine's Theory of Language', *Maynooth Review*, 6 (1982), 4-20. This, nonetheless, does not detract from Wittgenstein's critique of that picture of language, but as Watson concludes, 'Wittgenstein is a little bit unfair to Augustine here' (ibid., p. 20).

highlight the flaws of viewing language as thus presented through a Wittgensteinian explanation.

For Augustine, 'Every word has a meaning. The meaning is correlated with the word. It is the object for which the word stands.'[66] However, Wittgenstein later states that:

> Augustine, we might say, does describe a system of communication; only not everything that we call language is this system. And one has to say this in many cases where the question arises 'Is this an appropriate description or not?' The answer is: 'Yes, it is appropriate, but only for this narrowly circumscribed region, not for the whole of what you were claiming to describe.'[67]

Here Wittgenstein has successfully challenged Augustine's account of language and has subsequently proposed, by way of an argument, that not all uses of language can and do fit this Augustinian description.

I suggest that there is a significant difference in Wittgenstein and Augustine's conception of language. For Wittgenstein it is not sufficient to say that we understand language or can use language just because we can say words, either from ostensive learning or by repetition; for him the importance of understanding the use of word and its contextual meaning is immense. He illustrates the nonsense of language and its ineffective use when he again refers to the Augustinian picture and states:

> Imagine a script in which the letters were used to stand for sounds, and also as signs of emphasis and punctuation. (A script can be conceived

[66] Wittgenstein, *Philosophical Investigations*, #1. See previous note.
[67] Ibid., #3.

> as a language for describing sound-patterns.) Now imagine someone interpreting that script as if there were simple a correspondence of letters to sounds and as if the letters had not also completely different functions. Augustine's conception of language is like such an over-simple conception of script.[68]

For Wittgenstein the context and the speaker's use is of paramount importance if the essence of language and the meaning of the concept are to be fully understood:

> 'I set the brake up by connecting up rod and lever.'—Yes, given the whole of the rest of the mechanism. Only in conjunction with that is it a brake-lever, and separated from its support it is not even a lever; it may be anything, or nothing.[69]

There is a line of argument that would suggest that ostensive definition plays a central role in how we understand language. Ostension connects language and world. It provides a reference and in doing so eliminates any risk of misunderstanding or ambiguity. Essentially, it is the vehicle which allows us to learn and understand simple terms such as 'wet', 'car', 'yellow', 'bucket' and so on. However, although naming, ostension/ostensive definition, is like attaching a label to something such as an object, the process can also lead to variously interpretations and, therefore, misunderstanding in any situation or circumstance that is presented to the speaker.

The opening passage of the *Investigations* emphasises the notion of ostensive learning and the central role it plays in our acquisition of language. It does not, however, differentiate or distinguish between the different parts of

[68] Ibid., #4.
[69] Ibid., #6.

speech, although Wittgenstein does emphasise that he does not want to use the term 'ostensive definition':

> because the child cannot as yet *ask* what the name is: I will call it 'ostensive teaching of words'.—I say that it will form an important part of the training because it is so with human beings; not because it could not be imagined otherwise. This ostensive teaching of words can be said to establish an association between the word and the thing.[70]

However, Wittgenstein clearly rejects the role ostension plays in language learning. He states that ostension is fundamentally flawed and, therefore, fallible. For example, we can point towards the object 'bucket' but this can be misinterpreted as pointing to the object 'spade' which is lying alongside the bucket. Similarly, by pointing at the colour yellow and exhibiting a lemon, we might understand and interpret that the lemon is the yellow being referred to and not the colour. To avoid this ambiguity we could point to several items that are yellow, such as banana, a yellow marker or a yellow shirt but there is still the possibility that confusion can arise in terms of the actual referent.

Secondly, ostension is not viable when objects are not present. We use terms such as colours, e.g. purple, and adjectives, e.g. beauty, in situations such as these. Therefore, ostension is not central but limited to learning language and, therefore, use.

[70] Ibid.

Thirdly, ostension cannot tell us how we use words *contextually* which is key for Wittgenstein:

> how one may use words which spoke (in a given structured way) of given concepts and objects must genuinely depend on the circumstances in which they were spoken.[71]

For example, if someone were to say: 'I will tell you the truth', how do you point to 'I' or 'truth'. Words such as these are learned through contextual use, where the concept and the environment engage with the mind and the body. This *is* the embodied cognition thesis.

Wittgenstein argues against the role ostension plays by suggesting that:

> There is a variety of distinct things to be said (or thought) in saying (thinking) a word to name blue. For such a thought to confer mastery of a word on a child, the child must grasp the proper understanding of that thought; he must be prepared to react appropriately to the fact it represents as so.[72]

What cannot be in doubt is that ostension is concerned with providing meaning to a word or concept and, therefore, is integral to meaning and the use of language. It does, however, play a limited role in the use of words and concepts in natural language and is therefore by no means central, explanatory or key in the meaning of a word or concept, and also therefore to our naming, use, meaning and understanding of it. Wittgenstein's intention is not to actively separate naming and meaning, rather he wants to emphasize that:

[71] Travis, *Thought's Footing*, pp. 3-4.
[72] Charles Travis, *The Uses of Sense – Wittgenstein's Philosophy of Language*, (Oxford: Oxford University Press, 1989), p. 118.

> Neither what a word names nor what it means is sufficient by itself to determine by what standards of correctness it is governed on a use of it.[73]

If a term can be used in several contexts, for example the adjective 'cold' and the colour 'green', then the meaning of the word has been grasped. The learning of these words has taken place in not one, but I would argue, several situations where the context has been similar. It is this reinforcement that has invited the meaning and, therefore, the use of the word. These words and concepts now have a meaning for the speaker. Similarly, an argument in relation to the meaning of psychological terms should be highlighted. Terms such as 'I am in pain' do not describe a private inner state. However, the notion of psychological terms is more closely linked to Wittgenstein's arguments on private language which has been discussed in Chapter 3.

In primitive language, the use of the word is specific to a particular action as seen in #2 in the *Investigations*: "block", "pillar", "slab", "beam"[74] and here we see the worker may be unaware of the many other uses of the term 'slab', or even what the purpose of the slab is. There is no doubt that children learn language at an early age in a primitive way as seen in #2. They learn to 'say' a word and 'use' a word in a particular context without necessarily knowing what the concept represents in other contexts. For example, a child will say: 'There are nine holes on the grass over there' or 'try and catch the bus'. This form of primitive language is also a language-game: 'I shall also call

[73] Ibid.
[74] Wittgenstein, *Philosophical Investigations*, #2.

the whole, consisting of language and the actions into which it is woven, a "language-game".'[75] We now know that within the first 7 short paragraphs, or aphorisms as some refer to them, in the *Investigations* that Wittgenstein proposes that there are numerous related meanings to the term language-game.

Wittgenstein never explicitly defines, or says with exactness, anywhere in the *Investigations* what he means by his term language-game but uses descriptions and remarks. I suggest he is arguing for a more fluid and flexible activity involving human language, which will ultimately provide a more realistic and communal and shared experience of language itself. Kenny argues that:

> If we want to study the problems of truth and falsehood, of the agreement and disagreement of propositions and reality, of the nature of assertion, assumption, and question, we shall with great advantage look at primitive forms of language in which these forms of thinking appear without the confusing background of highly complicated processes of thought.[76]

What he is arguing for here is the ability to simplify our communication process through the use of language-games, simple forms of language. When we accept this as the process, we can then perceive human activities as transparent, unambiguous and understandable. When we are involved in a language-game, we are involved in an activity; the speaking of a language which is, for Wittgenstein, a form of life emerging.

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[75] Ibid., #7.
[76] Anthony Kenny, *The Wittgenstein Reader* (Oxford: Blackwell, 1994), p. 46.

One of Wittgenstein's most frequently cited examples of language-games appears in the *Investigations* #2 where he presents a list of what he considers to be a language-game:

> Let us imagine a language for which the description given by Augustine is right. The language is meant to serve for communication between a builder A and an assistant B. A is building with building-stones: these are blocks, pillars, slabs and beams. B has to pass the stones, and that in the order in which A needs them. For this purpose they use a language consisting of the words 'block', 'pillar', 'slab', 'beam'. A calls them out;—B brings the stone which he has learnt to bring at such-and-such a call.—Conceive this as a complete primitive language.[77]

Here Wittgenstein is showing that the Augustinian picture of language, which we must accept may very well be correct, is nonetheless limited. Although language-games are rule-governed, they still allow us to communicate more openly in the communal and shared experience of human activity. Language-games also present us with more opportunities to explore the diversity and complexity of language through use and meaning. Similarly, Travis states that the problem with Augustine's account of language learning is as follows:

> There is a variety of distinct things to be said (or thought) in saying (thinking) a word to name blue. For such a thought to confer mastery of a word on a child, the child must grasp the proper understanding of that thought; he must be prepared to react appropriately to the fact it represents as so. But which understanding of the thought would be depends (often enough) on the history of the word in the language the child is learning (or its career within the community in which the child is to speak).[78]

In the *Investigations* #23 Wittgenstein presents the reader with a list of what he refers to as 'regular' language-games:

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[77] Wittgenstein, *Philosophical Investigations,* #2.
[78] Travis, *The Uses of Sense – Wittgenstein's Philosophy of Language,* p. 118.

> Here the term 'language-*game*' is meant to bring into prominence the fact that *speaking* of language is part of an activity, or of a life-form. Review the multiplicity of language-games in the following examples, and in other:
>
> Giving orders, and obey them—
> Describing the appearance of an object, or giving its measurements—
> Constructing an object from a description (a drawing)—
> Reporting an event—
> Speculating about the event—
> Forming and testing a hypothesis—
> Presenting the results of an experiment in tables and diagrams—
> Making up a story; and reading it—
> Play-acting—
> Singing catches—
> Guessing riddles—
> Making a joke; telling it—
> Solving a problem in practical arithmetic—
> Translating from one language into another—
> Requesting, thanking, cursing, greeting, praying.[79]

We can see from this list of regular language-games that they are all 'actions' and 'behaviour'. Again he is drawing our attention to language-games as a 'performance' that occurs contextually, and with the interaction between mind, body and world. These language-games that Wittgenstein has presented us with all include concepts as participatory. Furthermore, from the examples presented here, we can see that there are two apparent properties to Wittgenstein's language-games: first, they belong to a broader context referred to by Wittgenstein as a form of life; and secondly, the concept behind language-games would suggest that there is a rule-governed element of language. I suggest that language comprises a complex network of language-games, each separate and distinct from one another and yet also undoubtedly all are inter-dependent and reliant on another. Furthermore, we can never

[79] Wittgenstein, *Philosophical Investigations*, #23.

escape a language-game. Similarly, to try and explain what the language-game is we find ourselves in a language-game of explanation. Wittgenstein, without doubt, has created a unique and clever concept. Fundamentally, any language-game invites us to use terms, words and sentences in different ways and contexts, thereby ultimately alternating meaning, and hence there are many different uses for the various terms, words and sentences, as he outlines in the *Investigations* #17:

> It will be possible to say: In language (8)) we have different *kinds of word.* For the functions of the word "slab" and the word "block" are more alike than those of "slab" and "d". But how we group words into kinds will depend on the aim of the classification,—and on our own inclination.
> Think of the different points of view from which one can classify tools or chess-men.[80]

'Concepts only occur as part of a web of meaning provided both by other concepts and by interrelated life activities.'[81] I suggest that when we refer to any object in the world we are participating within a language-game; therefore our concept of the world, which has gradually evolved, and how we categorise the world in order to make sense of it, is already determined by the structure of our language. This idea of us participating in a language-game, as the concept participates in a language-game, is where the structure of our language determines our view of the world. If we can accept that the use of a word in various contexts is central to meaning, then we can now move a step further to show that Wittgenstein's language-games are the contexts in which concepts are participatory. Wilson states that:

[80] Ibid., #17.
[81] Rosch, 'Reclaiming Concepts', p. 73.

> There is, strictly speaking, no such thing as 'the' meaning of a word, so there is no such thing as 'the' concept of a thing. When we talk, in a kind of shorthand, about 'the' meaning of a word, we refer to those significant elements in all the many and various usages of the word which make the word comprehensible, to the area of agreement among users of the word.[82]

For Wittgenstein, concepts are meaningless unless placed within a context. For example, if I speak of the measurements of lengths and widths of different timbers, materials and tools such as a bench saw and measuring tape, then I can participate in this specific language-game, and competently use the concepts relating to the subject of carpentry. Similarly, if I speak of recipes and blenders, weighing scales and ingredients, then I am competently using the concepts relating to the subject of cookery. Wittgenstein wants us to see that language-games allow us to distinguish between what makes sense and what does not, and to able to distinguish between what is logical and intelligible. However, it is important to understand that one language-game does not take precedence or importance over another; they are simply different. Similarly, no language-game is more basic than another.

Wilson states that:

> It is quite possible to have a concept of something, but for there to exist no single word — not even a word invented by the person who has the concept — which describes the thing.[83]

However, for Wittgenstein, concepts are the meaning, because the meaning arises from it use, and while there will always be multiple language-games

[82] John Wilson, *Thinking with Concepts* (Cambridge: Cambridge University Press, 1966), p. 54.
[83] Wilson, *Thinking with Concepts*, p. 56.

which are rule-governed, the different rules will determine how the concept is interpreted and to what language-game it belongs. For example, let us look at the following sentence:

> '*The vessel submerged within minutes, much faster than anyone could have anticipated*.'

When we look at this proposition in isolation, rather than interpreting the sentence within the context of the preceding or even proceeding statements, can we identify to which language-game it belongs? Looking at Wittgenstein's list of possible language-games at #23 in the *Investigations*, the language-game for this particular statement could belong to: 'describing the appearance of an object'; 'constructing an object from a description (a drawing)'; 'reporting an event'; 'making up a story'; 'play-acting'; 'singing catches'; 'making a joke; telling it'.[84] (Note that all these are 'action' 'behaviour' and 'participatory'.)The proposition could belong to all of the above; the point I am making is not which one it refers to but rather how the sentence must be interpreted based on the context and the event to which it belongs. However, I would also claim that some psychologists might argue that they are more interested in the contextualist approach than to the actual meaning. For example:

> While there is no fixed meaning associated with linguistic expression, and the best we can do is catalogue the contextual uses of expression,

[84] Wittgenstein, *Philosophical Investigations*, #23.

> the message conveyed by an expression is heavily influenced by one's understanding of the context.[85]

It is important to factor out the respective contributions to understanding made by linguistic expressions and by context; this cannot be done by focusing on context alone.[86] The expression must convey *something* with which the context can interact. Furthermore, Wittgenstein would argue that it is the context that gives the meaning of the word to the speaker and, therefore, knowledge and understanding follow with continuous reinforcement. Wittgenstein, for example, is not saying that when a child hears a word for the first time that the child will remember the context and how to apply that particular concept into all other contexts but with similar situations reinforcement of the use of the concept will occur. Gradually the child will identify the attributes of the concept and be able to assimilate them to use if the concept occurs in other situations, which we know is highly probable.[87] This is similar to the prototype view, knowledge and exemplar approach of concept development work.

[85] Dan Sperber and Deirdre Wilson, *Relevance* (Cambridge, Mass.: Harvard University Press, 1986); James Pustejovsky, *The Generative Lexicon* (Cambridge Mass.: MIT Press, 1995); in Ray Jackendoff, *Foundations of Language* (Oxford: Oxford University Press, 2002), p. 280.
[86] Ray Jackendoff, *Foundations of Language* (Oxford: Oxford University Press, 2002), p. 280.
[87] Wilson, *Thinking with Concepts*, p. 56.

7.4 CONCEPTS AS PARTICIPATORY AND FAMILY RESEMBLANCE

> Family resemblance is an idea meant to have application to all our concepts, so that there is at least some important sense in which it is wrong to speak of 'family resemblance concepts', as if those were concepts of some semantically special kind. (Note that Wittgenstein introduces family resemblance in #65, in response to a question about the essence of language. His conclusion about the 'essence of language' is stated in #92. All the sorts of concepts mentioned above are discussed in connection with this problem in the space between those two paragraphs.)[88]

Exploring a network of family resemblances can also be considered as exploring a 'cluster' of resemblances which is not about the meaning of a name in the way that, for example, the term family resemblance explains the meaning of the term 'game'. Furthermore, while Wittgenstein is not a cluster concept theorist his view of names does suggest that the semantics of a name might be specified correctly by means of descriptions; this might be where the 'descriptions are properly understood as imposing a condition on being the referent of the name.'[89] However, investigating a cluster of resemblances has become a theory about the shared nature of language, something common to a language/linguistic community, so the question becomes: how can we talk if we do not or cannot agree on everything about the words we use? Wittgenstein would argue that:

> We are unable clearly to circumscribe the concepts we use; not because we don't know their real definition, but because there is no real 'definition' to them […]. Our ordinary use of language conforms to this standard of exactness only in rare cases.[90]

[88] Travis, *The Uses of Sense – Wittgenstein's Philosophy of Language*, p. 250.
[89] Ibid., p. 278.
[90] Wittgenstein, *The Blue Book*, p. 25.

Again, we see here how it is the environment and the social interaction between the individual (mind and bodily activities) that determines the meaning of the concept. This notion of a shared nature of language is evident in the way that Wittgenstein describes language as a tool, and its use, and the cognitive approach that psychology takes to concepts.

> When concepts, categories and classifications are examined, it appears that many categories seem to be defined by a family resemblance between their members rather than the specification of defining features that all members must possess.[91]

However, this brings with it another problem: the wooliness or fuzziness within the boundaries of concepts. As discussed in Chapter 4 the classical category has clear and well defined common properties and boundaries, and it is from this type of category that Wittgenstein derives his notion of 'game' and how 'game' does not fit the classical view since there are no common properties shared by all games:

> The strength of the thread does not reside in the fact that some one fibre runs through its whole length, but in the overlapping of many fibres.[92]

Wittgenstein argues that just because we cannot give a definition of words such as 'game' or 'number' or 'family' that we do not know what they are:

> But this is not ignorance. We do not know the boundaries because none have been drawn.[93]

[91] Harvey, p. 288.
[92] Wittgenstein, *Philosophical Investigations*, #67.
[93] Ibid., #69.

A fuzziness or lack of definitiveness around a concept does not mean that the expression itself is meaningless. This is where he argues for the use of a word and how it is learned rather than searching for a precise and definitive meaning. Furthermore a sharp boundary can be chosen, to suit whatever purpose we might have to hand. In such cases, it is the way in which the term is employed, and how it is learned, that are pivotal, rather than any precise meaning. The *Investigations* rejects the assumption that the meaning of a word is the thing that it stands for. That involves the misuse of the word 'meaning'. Hacker argues that:

> There is no such thing as the name relation, and it is confused to suppose that words are connected with reality by semantic links. That supposition rests on a misconstrual of ostensive definition. Not all words are or need to be sharply defined, analysable by specification of necessary and sufficient conditions of application. The demand for determinacy of sense is incoherent.[94]

However, I argue that Wittgenstein is correct when he states that there are no real 'definitions' to the concepts that we use. However, by contrast cognitive theorists have shown that there are real definitions and that some are bound by specific rules, such as the defining attribute viewpoint would suggest, albeit that there are some limitations and weaknesses to this approach as I have outlined in Chapter 4. While Wittgenstein continually draws our attention to the connections between the words, both as they are used in specific examples that he draws out for us — such as 'block', 'pillar', 'slab', 'beam' —[95]and how we use them in our ordinary life, he is focusing on broader descriptions rather

[94] Peter Hacker, *The Philosophers – Introducing Great Western Thinkers*, ed. by Ted Honderich, (Oxford: Oxford University Press, 1999), pp. 228-229.
[95] Wittgenstein, *Philosophical Investigations*, #3.

than specific definitions. This is another sharp contrast in how philosophy and psychology explain certain phenomena. Wittgenstein is also highlighting the differences in our uses of language which is the fundamental basis of the language-game. However, as this dissertation shows, the meaning and use of a concept, both concrete and abstract, is found in the way that it participates in the environment.

In this regards, then, while, for Travis, Wittgenstein placed epistemology squarely at the centre of philosophy of language,[96] his purpose also was for us to grasp the notion that in order to understand the workings of language there was also a need to understand how this knowledge of language, and its many and varied uses, arose. He has done this by showing the distinction between the 'concept of' something and 'concept as concept'. For Wittgenstein, his remarks are often 'about' concepts rather than specific explanations of 'a concept'. The subtle distinction he makes between the conceptual and the meta-conceptual allows for us to see 'concept of' as action and participatory rather than static and objective.

Despite Wittgenstein's potential objections, I propose that the language-game can be seen as a theoretical tool, that is, it can also be considered as a theory of language (as many scholars and critics currently do). Similar to using Rosch's definition of a concept as non-representational and the 'bridge between mind and world',[97] I have also used her term 'participatory' to

[96] Travis, *The Uses of Sense – Wittgenstein's Philosophy of Language*, p. 129.
[97] Rosch, 'Reclaiming Concepts', p. 71.

show how concepts in any language-game are an ‘action’ and where they actively engage, become part of the environment and interact with mind and body.

CONCLUSION

'The aspects of things that are most important for us are hidden because of their simplicity and familiarity.'[1]

In conclusion to this dissertation I would like to look at how Wittgenstein is considered a key figure in the history of psychology and how his contributions, whether as a critic of behaviourism, or whether as a philosopher who foresaw how 'context, or the 'environment', would play a pivotal role in understanding concepts, have been immensely influential.

One of Wittgenstein's most famous remarks can be found on the last page of the *Investigations* where he writes:

> The confusion and barrenness of psychology is not to be explained by calling it a 'young science'; its state is not comparable with that of physics, for instance, in its beginnings. (Rather with that of certain branches of mathematics. Set theory.) For in psychology there are experimental methods and *conceptual confusion*. (As in the other case conceptual confusion and methods of proof.)
> The existence of the experimental method makes us think we have the means of solving the problems which trouble us; though problem and method pass one another by.[2]

I thought it appropriate that the conclusion of this dissertation should acknowledge Wittgenstein's immense contribution to cognitive psychology and how he should be considered a key figure, alongside other influential theorists such as B.F. Skinner and Sigmund Freud.

[1] Wittgenstein, *Philosophical Investigations*, #129.
[2] Ibid., p. 197.

This dissertation has examined Wittgenstein's move from a quasi-realist position in the *Tractatus* to an anti-realist position in the *Investigations*. As we have seen, the *Investigations*, in many ways, can be considered as a critique of his earlier work. His reflections on logical positivism invite him to question his propositions as explicated in the *Tractatus.* One of the reasons why Wittgenstein moves from this idea of a conception of language as a calculus to a language-game is because he could identify the dissimilarities between language and calculus, even though rules and their application would always have to apply.[3] Without doubt, he is a philosopher who understood the significance of language and its use.

Wittgenstein, by the early 1940s, had radically changed not only the way he had viewed language from 1926 as exposited in the *Tractatus,* but he had also changed the way language as a 'system' was being discussed by philosophers, psychologists and in the area of linguistics. Wittgenstein had posited a language system, through his central concepts of a language-game and family resemblance, where the meaning of words and concepts were solely derived from the practice of language itself; in other words, language was the use of the word as held in a particular context.

While Wittgenstein was working on the *Investigations* he witnessed the pendulum swing from the prominent paradigm of psychoanalysis to the now more important domain of behaviourism. His interest in behaviour, as a

[3] Glock, *A Wittgenstein Dictionary*, p. 67.

description of the practice of language, frequently and incorrectly labels him as a behaviourist; rather his descriptions and remarks in the *Investigations* show what he considers to be the limitations of behaviourism. While 'The emerging viewpoint of embodied cognition holds that cognitive processes are deeply rooted in the body's interactions with the world,'[4] Wittgenstein's interest in behaviourism was embedded in his view that concepts should always be seen as participatory within a context: 'Language is an instrument. Its concepts are instruments.'[5] Furthermore, Wittgenstein's rejection of mentalism is often considered an attack on psychology, particularly when he makes remarks such as 'The occult character of the mental processes.'[6] Wittgenstein wants us to see that mental processes and states ('the mind' and 'the mental'), are much more significant than something that is considered separate from the body: this can also be interpreted as Wittgenstein's rejection of cognitivism and dualism. However, as we have seen in his remarks, Wittgenstein is not denying that mental states exist: he is stating that these mental processes and states should never be described in abstract terms or as isolated objects. Wittgenstein wants us to see the connection between concepts participating as part of the context, with mind and body, thus the individual can make sense of their world.

The cognitive revolution brought mentalism to a new standing point. Terms such as 'cognition' and 'cognitivism' were introduced and the mind was now considered in terms of a computer and computational symbols. We also saw how the cognitive approach to concepts emerged. There was now an

[4] Wilson, 'Six Views of Embodied Cognition', p. 625.
[5] Wittgenstein, *Philosophical Investigations*, #569.
[6] Wittgenstein, *The Blue Book*, p. 5

emphasis on how concepts were developed and used from a cognitive perspective, such as the definitional view, and prototype, exemplar and knowledge approaches. However, contemporary cognitive psychology acknowledges and, thus emphasises, the role that the environment plays, hence the embodied cognition thesis, where, also notably, the notion of the 'abstract', which for Wittgenstein was a problem, is no longer a challenge. The embodied cognition thesis is Wittgenstein's legacy to cognitive psychology.

This study also examined the role that concepts play and how they are the bridge between mind and world,[7] the glue of our cognitive system,[8] and should always be considered as participatory within a context. What this study has established is that concepts are not isolated objects of reference, rather they are *part of* the context and a social construct, such as a language-game, where they are situated and where there is an engagement between the individual (mind and body) and the environment. Furthermore, concepts contain information that allow us to classify items according to the category to which they belong and, thus, enable us to make sense of our world. Concepts also allow us to make predictions and inferences about situations, reason out new and unfamiliar experiences, and facilitate communication so that we can share information.[9] For Wittgenstein, outside an environment there cannot be a precise meaning that any concept ascribes to:

[7] Rosch, 'Reclaiming Concepts', p. 71.
[8] Murphy, *The Big Book of Concepts*, p. 1.
[9] Solomon, p. 99.

> But if a person has not yet got the *concepts,* I shall teach him to use the words by means of *examples* and by *practice.*—And when I do this I do not communicate less to him than I know myself.[10]

Rosch's views on concepts were also examined and, hence, it is her term 'participatory' that I use to describe Wittgenstein's concepts within a language-game. Rosch states that 'because concepts are situation based and participatory rather than identification functions, definitions can be viewed in a new light.'[11] She explains that concepts are usually defined against a 'background of practices, understandings and explicit teachings' and that the explanation we give usually is the definitional view of a concept which we now know is incorrect. As Wittgenstein urges us to see, the explanation of the concept always lies in its use within a context. Rosch suggests that there is an alternative approach: a definition by means of prototypes:

> Prototypes with their rich non-criterial information and imagery can indicate, on many levels, possible ways of situating oneself and navigating in complex situations.[12]

Once again, the reader can identify a Wittgensteinian theme in Rosch's remarks.

This dissertation has also shown that Wittgenstein's central concept of a 'language-game' is more than a tool for establishing the meaning of words; it is indeed a theory of language. This would suggest that as a theory it presents language from a theoretical framework and, as such, adheres to the demands of

[10] Wittgenstein, *Philosophical Investigations*, #208.
[11] Rosch, 'Reclaiming Concepts', p. 73.
[12] Ibid.

its propositions. However, while Wittgenstein's language-game emerged as part of his critique of his earlier work, the *Tractatus,* it still nonetheless, conforms to a 'theory'. As I discussed in Chapter 6, Wittgenstein would undoubtedly reject the label 'theory', as he tends to rejects all labels, definitions and exactness, but would understand that what he describes in the context of a language-game can also be used to describe the practice of language and, therefore, language use from a theoretical viewpoint.

However, I contend, that there remain many unanswered questions for psychology and philosophy. I present these as follows:

As discussed in Chapter 4 cognitive psychology approaches concepts in various ways. While it is not the task of this study to evaluate whether these views are correct or how they need to be modified, if at all, there are, without doubt, significant philosophical influences which are apparent. However, when does an influence become a direct challenge in empirical research? Furthermore, did Wittgenstein's remarks, specifically in the *Investigations*, spur empirical research in psychology, particularly in the domains of cognitive and social psychology?

Similarly, I also ask are there any issues that the language-game does not address? If so, what are they? Are there any limitations to a language-game? If so, what are these limitations? Often cited as the most influential philosopher of the twentieth-century, is it possible that he also shaped the

development of cognitive psychology from its inception? For example, Rosch adapted the term family resemblance when developing the prototype view as discussed in Chapter 4. Did this, in turn, influence the development of the other approaches taken, such as the exemplar view and the knowledge approach, and perhaps even create biases in these viewpoints? Indeed the term family resemblance is also used in current theories of memory, such as propositional networks and connectionist frameworks, including parallel distributive processing, and given its significance within the domain of memory specifically, is it likely that Wittgenstein's family resemblance will also feature, at some point, in a semantic network model? If so, what does this mean for cognitive psychology?

One of the most contentious and yet interesting debates within the domain of cognitive psychology is whether our knowledge and, therefore, our concepts, are best supported by empiricism, where concepts are more data driven, or whether they are best supported by innate knowledge, where concepts are considered more conceptually mediated, thus a priori arguments arise. How can we prove that some concepts, such as maths for example, are not a priori and other concepts, such as dancing, are not formed culturally and, therefore, considered a posteriori?; why is it easier to learn concrete concepts such as 'chair' and 'apple', but more difficult to acquire abstract concepts such as 'university' and 'truth'? Was Wittgenstein's interest in concepts as part of the environment, and part of the interaction with the individual, fuelled by the dogmatism of psychoanalysis and behaviourism?; if we accept that meaning is

not a designated word, then is it the context that makes a difference to what happens cognitively? If so, how do we identify the cognitive processes involved?

Another issue to consider is whether cognitive theorists would accept that the language-game is a theory of language, from a psychological perspective as opposed to a philosophical explanation only, or could it be accepted as both? While there is no empirical evidence to support this theory would a theorist, such as Rosch, examine it and perhaps advocate for its efficacy considering that she had previously shown that 'what philosophers took as a matter for a priori speculation could be demonstrated empirically.'[13]

When a closer examination of Wittgenstein's remarks is undertaken, it is clear that some fundamental questions are not answered despite his comments (and in some cases presuppositions) on some of these areas. For example, why does he never develop an explanation on the meaning and the function of what it is to 'understand'? Is this because, for Wittgenstein, to address these issues would have meant entering into the domain of cognitivism, a paradigm that was yet to emerge? Furthermore, is it possible Wittgenstein withheld his extended comments and descriptions on the role of 'the mind' and 'the mental' and 'cognition' because he felt restrained by other less dominant themes, such as structuralism and functionalism, even though he could see the

[13] Lakoff, *Women, Fire and Dangerous Things – What Categories Reveal about the Mind*, p. 42.

limitations of behaviourism and the role that 'the mind' and 'the mental' could potentially play?

Finally, why is it that psychology books, with particular reference to the domains of cognitive and social paradigms, still find Wittgenstein so interesting? Did Wittgenstein change how language is viewed and utilised in a social and shared context? Is there a significant Wittgensteinian influence, in, for example, social constructionism?[14] Is there a place for social constructionists and their critics in psychology to engage with Wittgenstein's work, in particular again his later philosophy, and to examine the relationship between language, mind and world?[15]

I suggest that these are only some of a myriad of questions that can be raised in relation to Wittgenstein's contribution to contemporary psychology. As we have seen in this study, for Wittgenstein 'the most interesting psychological questions are conceptual.'[16] I propose that the present resurgence of interest in Wittgenstein is related to:

> growing concern in the philosophy and methodology of the behavioural sciences with the role played by conceptual frameworks, models and metaphors in the mediation of our experience of the world.[17]

[14] Gavin Brent Sullivan, 'Wittgenstein, Reflexivity and the Social Construction of Reality', in *Language and World. Papers of the 32nd International Wittgenstein Symposium Vol. XVII*, ed. by V. A. Munz, K. Puhl and J. Wang, J. (Department for Culture and Science of the Province of Lower Austria: Kirchberg am Wechsel, 2009).
[15] Ibid.
[16] Williams, p. 241.
[17] Van der Merwe and Voestermans, p. 27.

I suggest that this mediation is also embedded in the interaction between the environment, concept, mind and body, that is, the embodied cognition thesis. Furthermore, the framework emerging from experiments by Ambrosini et al. would support this claim and suggest that:

> Knowledge of the world is built online, via current information, implicitly through behaviour, and is not necessarily reflected in explicit estimates or conscious representations.[18]

Once again, we see a Wittgensteinian theme.

In conclusion, it would appear from this study that concepts are neither right nor wrong: they are simply the bridge we use between mind, body and world (environment or context) in order that we can make sense of our experiences. The purpose of this dissertation was to examine concepts as participatory, as exemplified through Wittgenstein's language-game, and as the embodied cognition thesis purports. However, similar to Rosch, I believe that the study of concepts must be an open discussion rather than a study that is based on logic or theoretical data only. If we can do this, then there will be a genuine rethinking of the interaction and reciprocity between mind, world and concepts, and where the rational method of philosophy can reveal more about the structure of language and its use.[19]

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[18] Ettore Ambrosini et al., 'Which Body for Embodied Cognition? Affordance and Language Within Actual and Perceived Reaching Space', *Consciousness and Cognition* (2012) < http://dx.doi.org/10.1016/j.concog.2012.06.010> [Accessed 18th July 2012].
[19] Rosch, 'Reclaiming Concepts', p. 76.

This dissertation on Wittgenstein's legacy to cognitive psychology has established three arguments: first, that the language-game can also be considered a theory of language; secondly, that the language-game is the context within which concepts are participatory and engage with the mind and body; this is the embodied cognition thesis. Thirdly, Wittgenstein's contribution to cognitive psychology has influenced current psychology paradigms in how psychology approaches concepts, namely situated and embodied cognition. Without exception, Wittgenstein's immense contribution makes him a key figure in the history of cognitive psychology, alongside other significant theorists such as B.F. Skinner and Sigmund Freud.

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