PHILOSOPHICAL ACCOUNTS OF MIND IN CLINICAL PSYCHOLOGY: RECONCILING THE SUBJECTIVE MIND AND THE OBJECTIVE BRAIN

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Abstract

The problem of reconciling the subjectively known mind with the objectively known brain has puzzled philosophers and scientists for centuries. When attempting to solve this problem in recent times, the focus has been on explaining how the mind is born from the brain, how the two are related, and how we can best understand them. This problem is of particular relevance to clinical psychology because it attempts to both understand and explain pathological presentations by appealing to both subjective personal experience and objective knowledge of the physicality of the brain. In this respect, clinical psychology straddles the gap between mind and brain. This thesis investigates the implications of the mind/brain problem for theory and practice in clinical psychology. Chapter one identifies the tension between knowing the world subjectively and knowing the world objectively and discusses the importance of understanding this tension when investigating the mind/brain problem. Chapter two sets out the foundational concepts of cognitive behavioural approaches in clinical psychology, looking in particular at how cognitive behavioural approaches conceptualise mental events like thoughts and beliefs. It is concluded that while cognitive behavioural approaches to clinical psychology regularly incorporate both mentalistic and physical concepts in its theory and practice, it does not address the inherent problems in their combined use, as revealed by the mind brain/problem. In order to improve the use of mentalistic concepts within the theory and practice of cognitive behaviourally based clinical psychology, chapter three explores the major conceptualisations of mind from the discipline of philosophy of mind. To achieve this improvement, chapter four, suggests that refining of mentalistic concepts in clinical psychology, through the application of philosophical concepts of mind, can be made possible through the use of a framework that captures the different explanatory levels at which the mind/brain operates. The levels-of-explanation framework is put forward for this purpose. Of particular relevance to clinical psychology is the ability to retain the importance of autonomous, subjectively experienced, and causally efficacious mental events, while at the same time, being able to give a realistic account of how these mental events are linked to the physical brain. The levels-of-explanation framework is judged to be a suitable approach with which to achieve this. In chapters five and six, the implications of clinical psychology's use of mentalistic concepts are explored in relation to evidence-based practice and case formulation. It is shown that through a greater understanding of

both the nature of mind and the relationship between the mind and the brain, improvements can be made to both the theory and practice of cognitive behaviourally base clinical practice. This is achieved through the application of philosophical concepts of mind, via a levels-of-explanation framework, while both researching and undertaking clinical practice in clinical psychology.

"Does the brain control you or are you controlling the brain? I don't know if I'm in charge of mine."

Karl Pilkington

One of the problems that confronts the psychotherapist is the basis on which he can justify his practice. As a bureaucrat, he will try to support it by results that can be succinctly formulated. This is an endeavour that can seem possible for those approaches which depend on technical measures with well defined limits and aims (e.g. cognitive therapy). For those of us who are less sure of our precise aims, but seek, yet question, the meaning of what might be a richer life for our patients, the public justification for what we do is a formidable task... Technique is, in a sense, too easy. It tempts us along known paths along which we can travel with confidence but turns our eyes away from the surrounding countryside.

Lomas, 1999 p. 65

Introduction

What is the mind? What is its nature? Where and how does it exist? What effect does it have on how we act, how we feel, and who we are? And how is it related to the mass of interconnected tissues and fibres that we refer to as the brain? These questions are inherently difficult, if not impossible, to answer empirically. They are difficult to answer because we are all, to an extent, prisoners in our own subjective world. One cannot know directly what another experiences. Despite this predicament, clinical psychology is concerned with understanding and improving people's subjective experience. As highlighted in the quote by Peter Lomas above, the ultimate goal of clinical psychology is an improved quality of life for our clients, which in the final analysis, is experienced subjectively.

Lomas (1999) refers to the meaning of a richer life for our clients in order to highlight the importance in clinical psychology of clients' subjective experience, and also to raise the point that an overemphasis on technique leads to the adoption of tacit, and therefore untested, assumptions about the nature of mind. In this thesis, it is argued that in relation to the nature of mind, cognitive behaviourally based clinical psychology does indeed travel a known path with confidence, but without seeing the countryside. Further, it is argued that the means are available with which to 'turn our heads' and see the 'countryside' of the mind. Stated plainly, while cognitive behaviourally based clinical psychology includes in its theories and practice a particular conceptualisation of what the mind is, it does not attempt to systematically develop and refine this conceptualisation of the mind. However, philosophy of mind does. Within the philosophy of mind, there are varying theories of mind which have been articulated and debated and refined in order to improve the understanding of mind, and how it fits ontologically within the natural world. These philosophical theories can be applied to inform and improve the untested conceptualisation of mind in clinical psychology, and as a result, improve both its theory and practice. To suggest that philosophy of mind be employed to improve our understanding of concepts of mind in clinical psychology is somewhat counter intuitive, because it requires the application of less empirical types of knowledge (e.g., metaphysics) to the science of clinical psychology in order to improve this understanding. It is important to do this for the two reasons discussed above. Firstly, because the subjective experience that constitutes mind is

of central importance to clinical psychology through the importance of mentalistic concepts like thoughts and beliefs. Secondly, because, despite the frequent use of mentalistic concepts that constitute the mind, the nature of such concepts is not well understood in clinical psychology due in good part to a heavy focus on technique.

In order to make suggestions as to how the understanding of mind can be improved in cognitive behaviourally based clinical psychology, certain important issues must be considered. The difficulty with knowing the mind, in other words the mind/brain problem, must be explored so that the problem is made clear enough that plausible solutions can be suggested. This needs to done with regard to how we as humans attain knowledge. Indeed the mind/brain problem is similar to, and must take into account, the tension between objectively knowing 'things' and subjectively knowing 'things'; a tension that is at the foundation of scientific inquiry. Knowing the mind has a further unique problem to overcome: While one can know all other 'things' as separate from oneself, and therefore can appreciate their objectivity, this cannot be done with the mind. These particular restrictions on knowing the mind must be taken into account when investigating the nature of mental events in clinical psychology.

The history and development of cognitive behavioural therapy, must also be explored to uncover what tacit assumptions are made about the nature of mind. Cognitive behavioural therapy makes particular assumptions about the nature of mind. Particularly, these are that thoughts and beliefs (mental events) exist in their own right, that they can be identified and monitored, and that they can be challenged and changed. Our knowledge of the nature of mental events in cognitive behaviourally based clinical psychology is assumed, but not well established. Moreover, while particular attention is paid to the effects of causally efficacious mental events, their nature and the way in which they are able to be causally efficacious, is not often considered.

In contrast to clinical psychology, the nature of mind is central to the philosophy of mind. Within the philosophy of mind, different theoretical positions are promulgated as to the nature of mind, some of which are consistent with clinical psychology and some of which are contrary. The process of theory development and refinement requires the consideration of contrasting and opposing positions in order to establish knowledge that is as close to the truth as possible. At the present time, cognitive conceptualisations of mind in clinical psychology are largely uncontested.

However, it is not enough to simply point out the weaknesses that exist in the way clinical psychology understands the mind. Suggestions must be made as to how this understanding may be improved. Further, the ability to retain the importance of subjective experience in the explanation of mood and behaviour, while at the same time adhering to a naturalistic world view, is required; in other words, an explanation of how the mind is produced by the physical brain. The best way to do this is by conceptualising the mind/brain as consisting of different explanatory levels which extend from its micro physicality, up to subjectively experienced, conscious, mental life. With a levels-of-explanation approach, it is possible both to include a variety of different types of knowledge of the mind/brain, thus retaining the importance of mentalistic and physical explanations of mind, and to explore the interrelationships between these different types of knowledge, thus providing a more comprehensive understanding of the mind. Of particular importance to cognitively based clinical psychology is whether the nature of mental events allows them to be causally efficacious in their relationship with behaviour and emotion. When conceptualising the mind as consisting of different explanatory levels, it is possible to hypothesise how subjectively experienced mental events can be causally efficacious because of their inherent properties.

If it were possible to develop a conceptualisation of mind that retains the importance of subjective experience and if we can establish the causal nature of mental events, while also being able explain how mental events are born from but not reducible to their physical substrates, then clinical psychology would be improved – in particular, evidence-based practice and case formulation. It is assumed that if a more comprehensive understanding of the mind and its relationship to behaviour and emotion can be established, then the validity of cognitive behaviourally based theories in clinical psychology will be improved. Furthermore, a more comprehensive understanding of the mind would improve the practice of clinical psychologists through possible improvements to the case formulation process. Because case formulation in cognitive behaviourally based clinical psychology is concerned with the explanation of an individual's problems by appeal to latent cognitive causal mechanisms, improving our understanding of these mechanisms and their possible strengths and limitations in the prediction of behaviour, will improve the reliability of case formulation and possibly increase the effectiveness of treatment.

The inclusion of subjectively experienced mental events in the theory and practice of clinical psychology is a necessity. However, there are certain limitations to knowing subjectively experienced mental events, which serves to reduce their utility in explaining behaviour and emotion. At present, clinical psychology, unlike philosophy of mind, arguably has little appreciation of either the nature of such mental events or the limits of their use in the explanation of behaviour and mood. However, the means are currently available to combine a comprehensive understanding of mind with theory and practice in clinical psychology. This would improve the way that cognitively based clinical psychology conceptualises the mind and how these concepts are used in clinical practice.

Chapter One

Epistemological considerations: The world knot and crossing the subjective-objective divide

Objective versus subjective knowledge of the world

Simply put, the attempt to gain knowledge of and make sense of the world has been hindered by the division between knowing things subjectively and knowing things objectively. This tension is inherent in the debate on the nature of mind, and permeates issues at the foundations of scientific knowledge. Prominent among these are the contrasts between a posterior versus a priori, and empiricist versus theoretical approaches to gaining knowledge about the natural world (Kukla, 1989). In a broad sense, a posteriori and empiricist approaches value direct observation and inductive reasoning in order to gain knowledge of the world, whereas a priori and theoretical processes value theorising and explanatory, or abductive, reasoning.

George Orwell, in his dystopian novel Nineteen Eighty Four (Orwell, 1954), successfully highlights the epistemological tension between knowing the world objectively versus knowing the world subjectively. Set in a future where technology has vastly increased the means for totalitarian control of the populace, the last refuge is the mind, and Big Brother is quickly establishing control of this final frontier. With such control, Big Brother is able to create 'objective' reality by controlling subjective thoughts: "Who controls the present controls the past, who controls the past controls the future" (p.199), in other words if the party says it's so (real) then it is so (real). The main character of the novel, Winston Smith, has trouble reconciling what he suspects to be the truth with what the party says to be the truth. In short he commits 'thought-crimes'. Winston is eventually caught and the book culminates in a passage in which he is tortured into accepting the argument for a subject reality. His torturer, the enigmatic O'Brian preaches: "Only the disciplined mind can see reality, Winston. You believe that reality is something objective, external existing in its own right. You also believe that the nature of reality is self evident. When you delude yourself into thinking that you see something, you assume that everyone else thinks the same thing as you. But I tell you Winston, that reality is not external. Reality exists in the human mind, and nowhere else." O'Brian, who argues for a subjective

reality asks: “How many fingers am I holding up Winston?”, “Four”, “And if the party says that it is not four but five, then how many”…“Four”. The torture ensues and Winston replies: “Four. I suppose there are four. I would see five if I could. I am trying to see five”. Eventually, Winston starts to succumb: “And he did see them for a fleeting instant… there had been a moment, he did not know how long, thirty seconds perhaps – of luminous certainty, when each new suggestion of O’Brian’s had filled up a patch of emptiness and become absolute truth, and when two and two could have been three as easily as five, if that were what was needed”.

Winston’s struggle highlights a central dilemma in philosophy of science. Winston believed there was an external reality; of course he did, after all it does seem self-evident. However his feelings of unease in accepting a completely subjective reality gradually recede: “The fallacy was obvious. It presupposed that somewhere or other, outside ones self there was a ‘real’ world where ‘real’ things happened. But how could there be such a world? What knowledge have we of anything save through our own minds? All happenings are in the mind” (p. 192-207).

The main issue raised in this excerpt centres on the fact that consciousness is self contained and is private. One will always be a subject to oneself and an object to others (Humphrey, 1992). Thus, as Winston points out, any knowledge we have of anything is through our own minds, and therefore subjectively experienced. Winston’s confusion is understandable, for the same problem has been pondered constantly by philosophers throughout the centuries.

Born from the different scientific approaches of Aristotle and Plato, the debate over whether it is better to rely on our observations or on our thoughts in our attempts to understand the natural world has been argued vigorously. Throughout the history of science, each position has enjoyed popularity at certain times. John Locke began the British empiricist tradition which included Hume and Berkeley. Emanuel Kant, on the other hand, stressed the importance of theoretically established knowledge, which is often referred to as the rationalist position in philosophy. Recent scientific history, which includes the rise of psychology as a discipline, has been dominated by empiricism. At the turn of the 20th century, several difficulties inherent within the empiricist position were addressed by the application of formal logic, a position referred to as logical positivism (Kukla, 1989). The dominance of empiricism lasted for most of the 20th century and was especially prevalent within psychology, so much so that theoretical

pursuits in psychology were seen in a derogatory light. However, the importance of theoretical research is now being increasingly acknowledged within psychology (Evans & Fitzgerald, 2007). Although it can be argued that there is a need for both types of inquiry to be equally developed, the legacy of strict empiricism is still prevalent in psychology.

Strict empiricism denies that knowledge can be gained from means other than the senses or direct measurement. Theoretical, or a priori investigation, on the other hand holds that there are phenomena that exist objectively, which we cannot know directly through the senses (subjective awareness), but whose characteristics we can gain knowledge of through making (albeit indirect), logical and scientifically sound inferences. Both approaches have their epistemological strengths and weaknesses, and value different methods and approaches to establishing knowledge claims. However, they can be complementary when used in tandem for the development of knowledge within a scientific discipline. However, as just stated, this has not always been the case, especially not in psychology (Kukla, 1989).

Should empirical or theoretical methods be dominant in science? Should Aristotle's reliance on the senses or Plato's insistence on the use of thought, be adopted as the preferred mode of inquiry? Ideally, neither approach should be dominant; rather, each should work to its strengths. This has not been the case in psychology, with empirical investigation dominating at the expense of theory construction (Kukla, 1989). The dominance of empirical investigation is seen throughout the sub-disciplines of psychology including clinical psychology. The emphasis has been largely based on experimental designs, in an all-too-often inductive approach to research.

The empirical dominance in clinical psychology is exemplified in the development of cognitive behavioural therapy. Noticing that the thoughts a person espoused seemed to have an effect on their mood, Aaron Beck developed cognitive behavioural therapy (Dobson, 1988). In this way, cognitive behavioural theory was developed from observation and clinician intuition rather than from theory, which raises certain epistemological issues (Westen & Bradley, 2005) that will be further explored in chapter two. Cognitive behavioural therapy has as a foundational premise that thoughts have a causal relationship with emotions and behaviour. Since its initial development, it could be argued that most of the time and resources have been devoted to the empirical investigation of the efficacy of cognitive behavioural therapy as a treatment for various

psychopathologies, as opposed to refinement of theory. The dominance of empirical investigation in psychology has both restricted the development of sophisticated theory (Kukla, 1989), and at the same time discouraged metaphysical debate in clinical psychology. While psychology is dominated by empiricism, the philosophy of the mind is in good part a metaphysical pursuit (in the broad sense of term), with the majority of the work being theoretical in nature. Clinical psychology, and psychology in general, cannot afford to distance themselves from, or ignore, the main metaphysical themes on the nature of mind because many of the mentalistic concepts central to the cognitive behavioural conceptualisation of mental disorders fit more naturally within the philosophy of mind than the science of the brain.

The distinction between objective and subjective knowledge is of central importance to human understanding. It arises in various forms, not only in how we understand the natural world, but also in our explanations of the minds and behaviours of others. This distinction is of central importance to cognitive behavioural theories in clinical psychology because they attempt to assign causal efficacy to subjectively experienced mental events in order to explain pathological presentations. But, in what way can we understand someone else's personal mental experiences? Can we have knowledge of causal mental mechanisms that cannot be directly measured in an empirical sense? Does an external reality exist? Is it the same for everyone? These questions highlight the unique problem with understanding the mind, when using the mind to do the understanding.

The World Knot

The tension between objective and subjective approaches to understanding of the mind gives rise to several issues. Namely, in what way are we to gain knowledge of, or understand, mental events? Do we achieve this subjectively, only trusting an understanding of mental events through experiencing them, for example, in the way that I experience thoughts, therefore take those thoughts to be real? Or can we establish a comprehensive, objective understanding of mind as it relates to all of humankind, classified within a taxonomy? The problem is that we are trying to use subjective awareness, or the mind, to attempt an objective understanding of the mind. This problem is commonly known as the World Knot (Edelman & Tononi, 2000): Given that all human experience is subjective, are we able to know that very subjectivity in an objective manner? Cognitive behavioural approaches in clinical psychology presume that we can do this,

without an appreciation of the precarious epistemological position this presumption creates. Personal mental events such as thoughts and beliefs are experienced subjectively, and cannot be experienced by anyone but their owner, and therefore cannot be measured directly. Therefore, cognitive behaviour theory makes implicit assumptions about the link between the subjective mind and the objective brain, but it does not address how this is accomplished. The solution to the problem of the world knot has been attempted by many and arguably has not been achieved.

Ultimately, the problem with the objective/subjective division of knowledge as it applies to the understanding of mind is this: we cannot debate the claim that mental phenomena exist; that we all have conscious experience is proof enough. However, how close to the truth is our current understanding of mental events? Our current understanding of the causes and nature of consciousness and mental events may be as far from the truth as Descartes' pineal gland link between body and soul. Indeed, serious doubts have been raised about the way that clinical psychology conceptualises the mind (Vanderwolf, 1998). Valid criticisms of concepts of mental events, such as those found in strong reductionist theories of mind, are not given sufficient attention in clinical psychology. However, while the particular difficulties and peculiarities of investigating the mind need to be understood, their presence do not provide good reasons to abandon the attempt (Edelman & Tononi, 2000). In actuality, they highlight the need to utilise different approaches in an attempt to understand the mind, both empirical and theoretical, both objective and subjective, and both direct measurement and inference.

Chapter Two

The History and development of cognitive behavioural therapy

The history and development of cognitive behavioural therapy

In New Zealand the predominant training model for clinical psychologists is one of: 1) general training across many areas of clinical practice; 2) the adoption of the scientist-practitioner model of practice; and, 3) basic training in cognitive behaviour therapy. Despite the increasing popularity of third wave therapies such as mindfulness, dialectical behavioural therapy, and schema based therapy, the scientist-practitioner model stresses the importance of using thoroughly researched and validated techniques. This means that cognitive behavioural therapy (CBT), which has by far the most extensive empirical evidence of efficacy (McGinn, 2000; Roth & Fonagy, 2005), is the default treatment approach within clinical practice in New Zealand.

An attempt to assess the tacit philosophical assumptions made in the practice of cognitive behaviourally based clinical psychology must necessarily examine the development of CBT and its main tenets. The evolution of CBT occurred roughly in three stages: 1) the emergence of behavioural therapy in the 1950s; 2) the emergence of cognitive psychology from the 1960's onwards; and, 3) the joining together of cognitive with behavioural therapies to form CBT (Clark & Fairburn, 1997). The merging of somewhat disparate schools of thought has provided CBT with an interesting, and at times, contradictory set of foundational principles.

An important clarification to make when examining the history and development of CBT is the use of the term 'behavioural', for its use in CBT is not the same as its use in behaviourism. The main difference between CBT and behaviour therapy is that CBT assumes behaviour is mediated by both emotion and thought in the development and maintenance of psychopathology. Behaviourism (in its radical behaviourist form) on the other hand conceptualises abnormal behaviour and psychopathology in behavioural terms only. Likewise, the cognitive component in CBT can be considered as born from, but slightly removed from, the discipline of cognitive psychology. In both cases, CBT in a loose sense, applies the principles of the two disciplines of psychology, but are not strictly governed by the theoretical developments within those

disciplines. Despite CBT not being equivalent to the separate cognitive and behavioural psychologies, an understanding of both is essential to understanding the underlying philosophical assumptions made in CBT.

Behaviourism, the dominant school of psychology during the middle of the 20th century, was applied to the treatment of psychopathology during the 1950's. The adaptation of behaviourist principles to therapy was in part a reaction to the dominance of Freudian psychoanalytic psychotherapy at the time. In this respect, behaviourism added an empiricist ethos to clinical psychology which it had lacked (E. Miller, 1999). Indeed, behaviourism provided clinical psychology with its own scientifically based clinical practices, where it had previously borrowed from psychiatry and social work (R. Miller, 1992). Behaviourism is principally based on a refined version of Thorndike's law of effect. B. F. Skinner refined the law of effect, viewing behaviour as the product of classical and operant conditioning whereby an organism interacts with its ecological and social environment. Although most behaviourist research was done on animals in controlled experiments, the assumed similarities between animal and human behaviour led to its adaptation to human populations. The most famous early example of behavioural techniques being applied clinically was when a young boy named Albert was conditioned to fear a previously neutral stimulus (white fluffy rabbit). Joseph Wolpe was the first to demonstrate that such conditioned neuroses could be reversed using reciprocal inhibition as used in a systematic desensitisation technique. Wolpe's work was important becasue it had a theoretical basis from which testable hypotheses could be derived (Barlow & Durand, 2005). Similarly, one of the first attempts at developing a behavioural account of the development and maintenance of psychopathology was Mowerer's two factor theory. Mowerer described the development of anxiety as occurring initially by the process of classical conditioning which is then maintained by operant conditioning, through negative reinforcement (Cox & Taylor, 1999).

With the application of the principles of behaviourism to areas of clinical psychology, both with therapeutic methods and theories of psychopathology, the underlying foundational assumptions of behaviourism were also adopted, albeit in a diluted manner. Behaviourism has a firmly empirical basis, in that it is committed to an objective, scientific account of psychological phenomena based on facts. This is in contrast with behaviourism's main therapeutic rival at the

time, psychoanalysis. The theories postulated by Freudian Psychoanalysis have been largely untestable, and the position quickly became unpopular in psychology (Grunbaum, 1991).

While it is true in a general sense that behaviourism adheres to certain foundational principles, differences exist in the extent to which behaviourists adhere to a positivist doctrine, both within clinical psychology and psychology in general. At the extreme end, radical behaviourists adhere to a positivist epistemological position that the only valid knowledge is derived from observation and experience as opposed to theorising about the nature of latent causal constructs (Clark & Fairburn, 1997). This position was prominent in the United States of America due to the influence of Skinner and other radical behaviourists. However, other more moderate behaviourist positions did exist. In the United Kingdom, for example, the development of behaviour therapy took a slightly different route. Here the early application of behaviour therapy was mainly on non severely affected, outpatient samples as opposed to the United States of America where behaviour therapy was mostly used on inpatients with more severe mental illness (Clark & Fairburn, 1997). As a result, behaviour therapy in the United Kingdom tended to be more moderate in its positivist position. It is important to understand that there are various behaviourist positions when considering the development of CBT because behaviourism is often labelled as 'positivistic' within clinical psychology as an intended insult (E. Miller, 1999). That radical behaviourism adheres to an arguably untenable positivist stance does not mean that the behavioural component within the practice of clinical psychology is characterised by a strongly positivist epistemology.

CBT is incompatible with the positivistic claims of the radical behaviourists, despite CBT retaining certain weakened foundation principles of behaviourism. The most substantial implication of the radical behaviourist position for CBT is that a persons 'thoughts' would be considered epiphenomenal, and therefore, unimportant and inconsequential to behaviour. From a radical behaviourist perspective thoughts cannot be directly observed or measured in an empirical sense and therefore are not an important avenue for investigation (Roth & Fonagy, 2005). Therefore, a causal relationship between thoughts or mental events and behaviour and emotion cannot be established. This is contrary to the main tenet of CBT: that maladaptive thoughts can lead to the development of psychopathology which include specific emotional and behavioural patterns. Thus, CBT has retained certain behaviourist principles, not least, the

insistence on the empirical validation of knowledge claims, but in a less stringent form. Whether this was deliberate, or a natural consequence of the introduction of the cognitive component to CBT, is unclear. The main legacy of behaviourism's contribution to CBT is that it provided clinical psychology with scientific credibility and a thorough empirical basis (Clark & Fairburn, 1997; E. Miller, 1999).

The limitations of behaviour therapy become obvious toward the later half of the 20th century. Work by Bandura (Bandura, 1986) on modelling and vicarious learning convinced many psychologists that behaviourism was not expansive enough to account for all human behaviour (Dobson, 1988). Although behaviour therapy was suited to treatment of phobia and anxiety, little progress was made in the treatment of other forms of psychopathology such as depression. Also, behaviour therapy drifted from its behavioural roots and as a result its theoretical foundation was less debated, and its research focussed more on technique. This signalled a move towards therapy as a technology rather than as a science (Clark & Fairburn, 1997).

The shortcomings of behavioural and psychoanalytic approaches to therapy encouraged alternatives with the rise of cognitive psychology providing a plausible alternative (Clark & Fairburn, 1997). The increasing popularity of cognitive psychology saw information processing models applied to clinical constructs (Dobson, 1988). Researchers like Aaron Beck (1967) pioneered a cognitive conceptualisation of psychopathology, for it had become obvious to many that the way a person thought about and perceived themselves, their environment and their position within it, had an effect on their subsequent behaviour and mood (Dobson, 1988).

The work of Aaron Beck (1967) , who adopted a more scientifically rigorous approach to research, was based on how depression is caused and maintained by faulty information processing and reasoning as well as the development of depressogenic schemas (Clark & Fairburn, 1997). Beck theorised that depressed people make false assumptions in three main areas, which he called the 'cognitive triad'. The cognitive triad includes faulty assumptions about the self, the world, and the future. Ideas about the relevance of cognition to psychopathology developed at about the same time that the discipline of cognitive psychology became popular within psychology, but the two should not be considered the same. While maintaining the same outlook, they differed in theory, terminology, and method. Cognitive therapy deals mainly with

correcting irrational thoughts whereas cognitive psychology deals mainly with information processing in general (Clark & Fairburn, 1997; McGinn, 2000; Roth & Fonagy, 2005).

With the limits of behaviour therapy and the rise of cognitive psychology, together providing the impetus for change, the two approaches were combined, with the cognitive approach providing relevant thought content to behaviour therapy (Clark & Fairburn, 1997). Clark & Fairburn (1997) regard this combination of the two approaches to therapy as confirmation of the connection of phenomenological psychopathology and behavioural therapy. To illustrate this view, consider obsessive compulsive disorder. Behaviour therapy acknowledges the presence of intrusive unwanted thoughts, but considers the content almost irrelevant. However, for the cognitive therapist the content of the intrusive thought is of the utmost importance. As a result, the cognitive approach allows for a greater understanding of the possible mechanisms that produce psychopathology. Therefore, CBT is not simply an amalgamation of behavioural and cognitive psychology. Although it draws on these two psychological traditions, it adopts its own particular approach to the research and treatment of psychopathology. Because of this a closer look at the basic premises upon which CBT rests is necessary.

Cognition Defined

At this point the term 'cognition' needs clarification. 'Cognition' is used in a number of different contexts. Generically, the term is used to describe any class of mental event where the underlying characteristics are of an abstract nature and involve symbolising, insight, complex rule use, imagery, belief, intentionality, problem solving, and so forth. For the purpose of the discussing 'cognition' from a philosophical viewpoint, the distinction between 'cognition' as it is used in clinical and cognitive psychology is important in order to avoid confusion. The use of the term 'cognition' as studied by cognitive psychologists tends to deal with automatic mental processes examined experimentally, and can be distinguished from those 'cognitions' synonymous with 'belief', 'thought' or 'propositional attitude'. The latter are employed within the domain of social/personality psychology, draw on principles from commonsense/folk psychology, and are harder to measure or know in an empirical way. For example, taking longer to declare the print colour of an incongruent colour word (the word red printed in blue) than declaring the colour of a coloured square, lets us make inferences about cognition that are quite different from the assumption that when depressed, one will make false attributions based around

ideas of the self, the world, and the future. Cognitions, as constructs referred to in CBT, are essentially of the latter type, but the evidence for these constructs is often given via cognitions of the former type. The debate around what cognitions or mental events are, remains one of the central debates in the philosophy of psychology – one which we will soon turn to. The main conceptual issues surrounding the nature and causal properties of cognitions as envisaged by CBT, are essentially the same as those of the philosophical mind-brain debate about the nature of mind

Cognitive behavioural therapy: The conceptualisation of mental events

The term 'CBT' covers a number of therapies that have a similar basic theoretical assumption: that which we know of as thinking or cognition occurs, and this thinking or cognition can cause changes in emotions and behaviour. CBT is based on three main premises: the first states that cognitive activity/mental events affect behaviour and that the cognitive appraisals one makes of an event can affect ones reaction to that event; secondly, that cognitive activity can be appraised, monitored, and changed (although access to cognitions is not perfect); and thirdly, that behaviour can be altered as the result of altering cognitive content (A. Beck, 1967; J. Beck, 1995; Dobson, 1988; McGinn, 2000; Scher, Segal, & Ingram, 2004).

According to cognitive behaviourally based therapy, distorted or maladaptive thought patterns contribute to and cause particular psychopathology. It is also held that these thoughts vary in kind from those that are fleeting and easily changed, to those that are deeply entrenched and deeply resistant to change. Although certain 'depressogenic' thoughts can be relatively common, a more pervasive pattern often leads to major pathology. Beck's (1967) model is a three-tiered model covering levels of imbedded cognitive functioning with the more ingrained levels influencing those of a more automatic nature. Beck outlined three broad types of beliefs or thoughts, each playing a different but related role in the development of psychopathology: automatic, intermediate, and core beliefs (J. Beck, 1995).

Automatic thoughts are those thoughts that we are not necessarily consciously aware of – the rapid ideas that come quickly to mind without conscious awareness of the processes by which they occur. The normal process of making sense of events or interpreting the environment, by way of automatic thoughts, is considered to be dysfunctional in those who experience

psychopathology (J. Beck, 1995). In contrast to automatic thoughts, which tend to be closer to conscious awareness and easily accessible, there are deeper, more ingrained beliefs about the self and the world. These more ingrained beliefs fall into two broad categories: core beliefs and intermediate beliefs.

Intermediate beliefs sit between the more transient negative automatic beliefs and the more ingrained and stable core beliefs. Intermediate beliefs often come in the form of underlying assumptions, rules, and attitudes that serve to modify the effect of core beliefs upon automatic thoughts. For example 'if I don't do the job perfectly then it's a failure' is an example of a negative automatic thought; this attitude may influence the formation of rules like 'I must do all things perfectly', and the assumption that 'I may become a good and worthwhile person if I do everything perfectly'. These types of rules and assumptions, or intermediate beliefs, often give negative automatic thoughts their flavour (J. Beck, 1995).

Both automatic and intermediate thoughts have their foundation in core beliefs. Core beliefs are central ideas about the self and are thought to cluster in schemas (cognitive structures of the mind) (J. Beck, 1995). Beck (1967) theorises that most negative core beliefs fall within two broad types: those associated with helplessness, and those associated with un-lovability. These fundamental beliefs tend to be acquired early on in development during childhood as an attempt to make sense of the world. Quite often negative core beliefs will lie dormant until a negative environmental event occurs that triggers the negative core beliefs. These negative core beliefs have certain characteristics: they are normally over generalised, global, and absolute. An example of a core belief would be, 'I am incompetent'. It is assumed that such beliefs form early in development, and often in relation to specific events or environmental stressors. An example of a stressor that may lead to the automatic belief that 'I am incompetent' would be an invalidating environment and overly critical primary caregiver. If a child is consistently told that they are useless, then they are at risk of believing what they are told and developing negative self concepts. In this way, the development of negative core beliefs can be regarded as an attempt by the child to make sense of their world so they can adapt to their environment and can attempt to obtain what they need from that environment.

This hierarchy of thoughts ultimately contributes to the development of psychopathology. Core beliefs about helplessness that are developed in childhood may become activated due to

some life stressor. Once activated, core beliefs influence intermediate and negative automatic thoughts. Therefore, a basic core belief that one is useless may be activated due to a relationship breakup. This triggers intermediate assumptions like 'when people are useless their partners leave them', or 'if I was capable, my partner would not want to leave'. The result of such thoughts being activated is that negative automatic thoughts occur. In this case, situations that are out of the person's control, and not reflective of their competence, may be interpreted as being due to personal inadequacies. For example, the inability to keep a tidy house, or stay in touch with friends, may be normal in the context of a relationship break up, but for someone suffering major depression may be interpreted as evidence of a core belief of inability. The result of experiencing constant negative automatic thoughts, activated by underlying intermediate and core beliefs, can be the development of pathological emotional and behavioural states as well as a self-perpetuating cycle where cognitions are developed and maintained through reinforcement (Roth & Fonagy, 2005). Cognitive behavioural claims about the causal relationship that links core, immediate, and negative automatic thoughts with behaviour and emotion, are of direct relevance to the metaphysical debate of philosophy of mind, because such claims are difficult to empirically verify.

Basic cognitive therapy of the Beckian type ultimately relies on a particular conceptualisation of mental events. Outside of the discipline of clinical psychology, this conceptualisation is possibly contentious, and has been criticised extensively (e.g.Churchland, 1981; Vanderwolf, 1998) Despite this, clinical psychology as a discipline largely ignores these areas of debate and focuses attention and consideration instead on refining therapeutic technology (Dawes, 1994; Westen, Thompson-Brenner, & Novotny, 2004, 2005). Therefore, an integration of the main concepts of cognitive behaviourally based clinical practice in the context of the metaphysical debate on the philosophy of mind may serve to improve theory development within the discipline of clinical psychology.

Given the conceptualisation of mental events in CBT, the philosophical debate surrounding the psychological understanding of 'mind' is of particular relevance. At issue is: 1) what constitutes a 'cognition' or 'belief,' and the like; 2) whether the properties of 'cognitions' are such that they have a causal relation with behaviour and emotion as CBT theorists claim; 3) what the limits of our understanding of these cognitions are, and finally; 4) where such

knowledge/understanding of ‘cognitions’ fit within the broader framework of the science of psychology.

Chapter Three

Philosophy of Mind

Philosophy of mind

The attempt to explain the mind has been of central concern to the efforts of philosophers for many centuries. Attempts to explain what conscious and unconscious mental events are have yielded many, often contrasting, views. With any academic discipline, certain ideas come into and out of popularity. Focusing on the possible metaphysical properties of the mind, the philosophy of mind continues to entertain lively debate as to the true nature of mental life. Although psychology attempts to understand the mind from a position closer to science than philosophy, philosophical positions on the nature of mind are still worth understanding. This is especially true for clinical psychology, whose theories often include metaphysical presuppositions. Due to the current limits of establishing a complete scientific understanding of the mind, brain and behaviour, issues such as whether or not thoughts have causal properties should include work from theoretical psychology and philosophy of mind. At the very least, psychology should remain aware of the current leading or central theories of what constitutes mind.

Within philosophy and psychology there are several hypotheses about the relationship between the mind as understood at the personal level (behavioural and mental manifestation of lower 'sub-personal' brain processes) and the brain understood at the sub-personal level (events that occur at the physiological level). There have been a number of theories within the philosophy of mind that attempt to find a plausible interface between higher level cognitive functioning and lower level brain processes. Often referred to as the interface problem, this is in essence, the mind-brain problem. Of particular relevance to the discipline of clinical psychology is the issue of mental causation. Specifically, to what extent do the various positions on the nature of mind allow for mental events like beliefs and desires to be causally efficacious? How one conceptualises the causal nature of mental events depends on how one attempts to solve the interface problem and reconcile mental events with their neuro-physiological substrates. Therefore, empirical research needs to be combined with philosophical and theoretical knowledge to gain a comprehensive account of how the brain gives rise to the mind.

There are two main fundamental philosophical positions used to explain the nature of mind. The first is referred to as dualism, the second, monism. Dualism, as was first systematically explained by Descartes, considers mind and brain as consisting of different types of 'stuff'. Essentially a spiritual/supernatural approach, dualism considers the brain to be a physical substance and the mind a thinking substance akin to the soul. However, there is no way to gain scientific knowledge of a soul/spirit which gives rise to mind, it follows that this is not a fruitful topic of scientific inquiry. This logical fact was explained by Campbell (1984, p. 14) in the four following propositions:

(1) The human body is a material thing.
(2) The human mind is a spiritual thing.
(3) Mind and body interact.
(4) Spirit and matter do not interact.

One of these propositions must necessarily be false. Which proposition to reject depends on ones conceptualization of the mind and where it fits ontologically within the world (Campbell, 1984; Robb, 2003). Given clinical psychology's commitment to a scientific, naturalist world view, proposition two must be rejected and a naturalist solution given for the interaction of mind and brain. Therefore, given that mental events arise from physical events in the brain, our focus must necessarily be on the nature of the mind/brain relationship and how we can know this relationship. This focus is essentially based on a monist/naturalist/physicalist premise. Monism, introduced by Spinoza, regards mind and brain to be made from the same 'stuff'. Monism is primarily concerned with the reconciliation of the mind and its physiological substrate, the physical brain. For dualism there need be no resolution, for the two remain separate. Here reference to the mind includes concepts such as thoughts, beliefs, and feelings, all of which are related to complex behaviour.

Understanding how the mind is related to complex behaviour is of particular relevance to a cognitively based clinical practice. The relationships between all mental events and behaviour occur on a number of different theoretical levels. Although, the concept of levels-of-explanation will be introduced later, a quick introduction is appropriate here. The mind can be conceptualised as being divided into 'explanatory levels'(Bem, 2001; Bermudez, 2005; de Jong, 2002). The personal level of explanation of behaviour appeals to mental events rather than the physicality of

the brain. An explanation at the personal level may be 'Jane put her coat on because she thought it was going to rain'. Sub-personal levels explain behaviour via the language of physiology of the brain and its processes. Thus, at the sub-personal level, this same action would be explained by reference to the physiological process by which Jane decided and then carried out the action of putting on her coat. The difference between, and relevance of, these different types of explanation of behaviour is a central issue for clinical psychology, a problem that can be informed by the relevant philosophical debate on the nature of mind.

Dualism

As just noted earlier, dualism holds that mind and brain are made of different stuff, and therefore are necessarily classified separately. There are three different dualist positions: interactionism, epiphenomenalism, and parallelism (Robinson, 2007). Interactionism states that while mental and physical events are made of different kinds of ontological substance, they do interact. That is, mental events made of mind stuff can causally interact with physical events through some type of connection. Epiphenomenalism states that mental events are merely a by-product of physical events. Therefore, for epiphenomenalism, physical events can have a causal relationship with both physical and mental events, but mental events are not causally related to either. Lastly parallelism, sometimes known as psycho parallelism, assumes no causal relationship between the different mental and physical events, but considers them to run in parallel (Robinson, 2007). Dualist positions, as has been noted, are necessarily ruled out as being applicable to clinical psychology and psychology in general due to their incompatibility with naturalism and therefore, scientific knowledge.

Monism

Monism takes mind and brain to consist of the same sort of stuff. Within the monist position there are different variations that range along a continuum from non reductive to eliminativist in nature (Schafer, 2005). At one end of the continuum lies a monism not dissimilar to dualism, which holds that mental events are born from, but not reducible to, their physiological substrates. This is the philosophical position most compatible with a scientist-practitioner approach to clinical psychology, and can be loosely titled 'explanatory dualism' (Bem, 2001) or 'autonomous mind' (AM) . The position of the 'autonomous mind' states that

mind is irreducible to any sub-personal structure (Bermudez, 2005). In other words, a mental event is not just physiological. Although, it is accepted that mental states arise from the brain in some way, AM holds that the central principles or laws governing explanation at the commonsense level (i.e., how mental events may influence behaviour as opposed to physical events) are irreducible to the type of explanation at lower levels. AM states that there is a relationship between the personal and sub-personal levels-of-explanation, but that explanation at the personal level is not entirely confined to that of the lower levels. That is, complex human behaviour, which is often causally linked to what we commonly to refer to as mind, stems from, but can not be completely explained through, appeal to the sub-personal level of brain physiology. In this sense, AM is a naturalist position and although it does not appeal to thought stuff as separate from physical stuff, it does regard mental events as being important in the causal explanation of behaviour over and above their physical cause. The AM position is compatible with clinical psychology because, while still adhering to the tenets of naturalism and scientific method, it allows mental events to have causal properties.

According to the AM position, any attempt to explain personal level phenomena strictly through sub-personal level explanation is necessarily descriptive as opposed to normative, and fails to capture the norm laden, rationality governed explanations at the personal level. For example, any explanation of decision making processes at the sub-personal level may explain how a person ought to reason but not how people actually go about reasoning (Bermudez, 2005). In other words, comparisons of the personal and sub-personal levels of mind are like comparing apples and oranges. Proponents of the non reductive AM claim that explanation at the personal level is hermeneutic, explaining intelligent behaviour by interpreting it as the behaviour of rational agents who follow normative principles rather than descriptive generalisations. Further, AM maintains that no type of explanation at the lower levels could capture the role of these normative ideals of rationality, consistency and, coherence (Bermudez, 2005). If following the AM thesis, propositional attitudes can feature causally in models of psychopathology, and are also irreducible to explanation at a sub-personal level. Therefore, they need to be understood in a normative as well as in a descriptive fashion. From this point of view, the understanding of disordered behaviour or problematic symptom clusters cannot be completely understood in terms of neurophysiology.

The main difficulty with the AM position is how it addresses the interface problem: in particular, how to find common ground between personal and sub-personal levels-of-explanation, and reconcile the mind with the brain, bearing in mind they are made of the same stuff. Everyone experiences what are referred to as thoughts, and from a naturalist position thoughts must somehow be born from the physical brain. But for the AM position, explanation at the personal level is concerned mainly with normative principles, as opposed to the descriptive principles that hold at sub-personal levels. Therefore, personal and sub-personal levels seem incompatible, weakening the explanatory worth of personal level explanation. However, within much of psychology, causal explanations are sought within the personal level (Bermudez, 2002). Of relevance to clinical psychology are those mental events often implicated in the aetiology of certain psychopathologies, for instance, depressogenic thinking. To be commensurable with most theory in clinical psychology, explanations of behaviour via mental events must include more than normative descriptions; they must also identify causal laws which allow them causal properties. Because AM regards mental events as non-reducible to their physical substrates, a solution needs to be found which allows for the mind to remain autonomous, while at the same time being linked to its physical substrate. Anomalous monism attempts to reconceptualise the autonomous mind in order to address this interface problem.

Anomalous Monism

Donald Davidson's (1980) anomalous monism attempts to solve the interface problem by setting it up in a different way. Davidson states that although mental events cannot be discussed in terms of causal laws when described as commonsense explanations, they are nevertheless identical to physical events that do cause the behaviour that is being explained. The generalisations of commonsense psychology are not law-like but they describe processes which are linked to sub-personal law governed processes (Bermudez, 2005). Therefore, anomalous monism is a form of the token identity theory, which regards personal level explanation as being an interpretive rather than theoretical (Botterill & Carruthers, 1999). If correct, anomalous monism would raise certain important problems for a scientific understanding at the commonsense/folk psychological level. It would affect knowledge claims of the causal power of mental events, which would be problematic for the way clinical psychology, social psychology, and personality psychology seek to explain (pathological) behaviour and emotion.

A major problem for anomalous monism is that it denies that nomological type causal laws hold at the personal level. Rather, it considers psychological states invoked at the personal level to be token identical, in the sense described immediately below, to the underlying physical structures that are themselves law governed (Bermudez, 2005). Therefore, anomalous monism appears at odds with explanatory approaches that seek to explain behaviour by appealing to causal laws operating at a non reducible personal level.

Identity Theory

The main difficulty with non reductive monist theories of the mind is the interface problem. Identity theory attempts to conceptualise the mind/brain split in a way that gets around the interface problem and overcomes anomalous monism's problem with accounting for causal laws at the personal level. It does so by regarding mind as identical to the physical substrate, rather than merely being correlated with it (Smart, 2007). Identity theory is a reductive form of monism because it takes the mind and brain to be the same ontologically. Specifically, identity theory states that mental states and processes of the mind are identical to the physical states and processes of the brain. Identity theory can be found in a number of forms. Type identity assumes that a relationship holds between types of mental events and types of physical events. Token identity theory is similar, but more specific, stating that the relationship holds between specific mental occurrences and specific physiological occurrences rather than broader categories or types. One way to explain the difference between 'type' and 'token' is by considering the quote "love and love and love": There are five occurrences (tokens) of words, but only two kinds (type) of word that are repeated (Smart, 2007). An acknowledged benefit of adopting the token identity approach is that it allows for the multiple realisability of mental events (Bermudez, 2005; Bickle, 2006; Smart, 2007). Multiple realisability refers to similar mental events being caused by different physiological substrates. For example, consider the mental event associated with feeling pain, and whether it is possible for other mammals or animals to experience pain. Type identity theory may assume a particular type of brain event to occur, such that if an animal did not have this type of brain structure, then that animal could not feel pain akin to humans. Alternatively token identity theory allows for the experience of the same mental event, through different brain occurrences (Smart, 2007). In this respect, token identity theory is similar to functionalism.

Overall the identity theory allows for the causality of mental events because the laws that govern events at the physiological level also govern events at the personal level. Identity theory, particularly the token variety, provides important advances in the concept of the mind by allowing mental events to be causally efficacious, while avoiding epiphenomenalism (Robb, 1997, 2003). Although not without its critics, the identity theory provides important advances in the attempt to prove the appropriate metaphysics for causality required in many theoretical approaches to psychopathology and treatment in clinical psychology.

The functional theory of mind

The functionalist theory of mind characterises mental events by their function, not their internal constitution (Levin, 2004). Functionalism is anti-reductionist (Carrier & Mittelstrass, 1991) and has little direct consequence for the mind/brain problem because of its ontological neutrality. This is because patterns of behaviour at the personal level are invisible at lower explanatory levels. Therefore, mental events are classified by their functional relationship to the physiological substrate that causes them (Bermudez, 2005).

Functionalism asserts that mental states differ from brain processes in their nature. Mental states are abstract functional states of the entire organism. They are specified by their causal potential, which is understood in terms of their ties to certain external stimuli, the reactions of the organism, and the interaction of the organism's other mental states. For example, pain is tied to external stimuli, causes a reaction in the organism, and is linked to other mental occurrences within that organism. Thus for functionalism, psychological concepts are conceived as functional types. Consider the distinction between the physical/material and functional properties of a mechanical water pump as an analogy for the relationship of neurophysiology to psychology. A physical/material description of the pump considers mechanical operations, for example, the turning of rods. A functional description describes the fulfilment of certain tasks, for example the pumping of water, without making assumptions about the mechanical realisations of this function (Bermudez, 2005).

Carrier and Mittelstrass (1991) conceptualise functionalism as consistent with a materialist world view, and regard it as being similar to token identity theory because of its multiple realisability. Functionalism insists on the non-reduction of mentalistic terminology.

Only psychological concepts can formulate the conditions to be met by the functionally equivalent, but anatomically heterogeneous, neural instantiations of psychological states. To use the water pump analogy, there may be different types of water pump with different mechanisms but the same functional purpose. In this way, psychological descriptions classify neuro-physiological phenomena into classes of functional equivalents (Carrier & Mittelstrass, 1991).

Functionalism contrasts with the autonomous theory of mind in two ways. First, no sharp distinction is made between the causal generalisations of commonsense psychology and ordinary causal generalisations. Functionalism denies that causal explanation at the commonsense level is qualitatively different from that at the sub-personal level, whereas the autonomous mind would take the type of causal law to be different. Second, the interface problem becomes irrelevant from a functionalist perspective. The main premise of the functionalist theory of mind is that mental states are defined in terms of how they feature in psychological causal laws (Bermudez, 2005).

Functionalists believe that commonsense psychological explanations are causally efficacious, that general causal laws must govern causal relationships, and that these commonsense psychological explanations hold at the personal level (Bermudez, 2005). However, there are two main criticisms that proponents of the functionalist mind must overcome. The first is that explanation at the personal level is less descriptive and more normative than explanation at the sub-personal levels and therefore has difficulty accounting for causal generalisations. The second is that the causal generalisations of commonsense psychology tend to be rules of thumb rather than scientific causal laws (Bermudez, 2005). Although these criticisms provide a challenge for the functionalist theory of mind, functionalism is reasonably commensurable with psychological theory.

A major benefit of functionalism for psychology is that mental states can be defined in terms of how they feature in psychological causal laws. This allows for commensurability between personal and sub-personal levels, as well as permitting the development of a distinctive characterisation of mental states (Bermudez, 2005). Therefore, functionalism provides an account of mind with greater salience to the theory and practice of clinical psychology, in which each mental state has an associated causal role directly relating to its governing causal law. Thus,

in this account of mind, functional roles are abstracted away from how physical events are implemented (Bermudez, 2005).

There are further distinctions to be made in an account of functionalism. The most prominent is between philosophical and psychological functionalism. While philosophical functionalism attempts to explain the occurrence of a mental event by citing the law-like generalisation under which it falls, known as the deductive nomological model of explanation, psychological functionalism is less trusting of our understanding of commonsense psychological explanation in terms of generalised laws. In other words, the philosophy of psychology does not consider the link between a particular propositional attitude and behaviour as indicative of a causal law. Generalised laws are things to explain, not things that do the explaining. That is, explanatory laws at the commonsense level can be identified and used to make predictions, but they do not explain the nature of the mental events that are implicated (Bermudez, 2005).

Understanding the interface problem from a functionalist position can be achieved through the functional analysis of different abilities, and by breaking down the processes involved. Consider the distinction between long-term and short-term memory. This serves as a functional decomposition of memory into distinct types. Establishing this distinction has been made by gathering experimental data on empirically tested phenomena, for example recency and primacy effects. However, one can achieve further functional decomposition than short-term versus long-term memory. In a functional decomposition one breaks down processes into components until one establishes the basic units, which comprise the higher level processes (Bermudez, 2005). At the neural level it is possible, through functional analysis, to anchor cognitive functions within their particular brain regions through the correlation of the location of brain damage with deficits in cognitive functioning (Bermudez, 2005). Therefore, functionalism is naturally compatible with the theory work in, and direction of, clinical psychology. While autonomy theorists hold that the information from cognitive and neuro-psychology has reduced importance in explaining behaviour at the personal level, functionalism makes integration of the personal and sub-personal levels easier. This is because it is far more sensitive to the complex, multi layered nature of psychological investigation (Bermudez, 2005). Further, functionalism allows for the existence of causal laws at the personal level.

The representational theory of mind

The representational theory of mind is based on the idea of intentionality in which mental states are representative of an object, whether real or not (Lycan, 2006). The representational theory of mind has been influenced by developments in artificial intelligence, and has enjoyed considerable attention in psychology. The representational mind has implications for the interface problem and provides a good account of mental causation at the personal level. Whereas the functionalist concept of mind states that there are causal laws governing commonsense explanation, the representational concept of mind requires knowledge of the mechanism rather than simply establishing the existence of causal laws (Bermudez, 2005). In other words, functionalism does not account well for the content of mental events.

How does a particular belief, or combination of beliefs, cause a particular set of behaviours? This is a question of direct relevance to cognitive behavioural theory. The representational theory of mind, unlike functionalism, declares that mental events are causally efficacious via their content (Bermudez, 2005). The representational theory of mind allows for mental events to have content independent of their functional role, and distinguishes between the content and attitude of a proposition (Bermudez, 2005). To illustrate this point consider the following sentence, 'Amy believes that the sky is particularly blue today'. In this sentence the content of the mental event is given by the words 'the sky is particularly blue today' and the attitude is represented by the verb 'believes'. This division, which is not made in functionalism, allows for more flexibility and complexity when explaining the causal relationship between mental events and behaviour.

The representational theory of mind accounts for the causal nature of mental events by considering the content of propositional attitudes to be analogous to the structure of sentences of an internal language of thought. Thus, the content of the mental event is used in a similar way to verbal reasoning and decision making (Bermudez 2002). The three basic tenets of the representational mind are:

1. The causal dimension of propositional attitudes must be understood in terms of causal interactions between physical states.

2. These physical states have the structure of sentences and their sentential structure governs both their composition and their combination.

3. The causal transitions between physical states respect the rational relations between the thoughts that those physical states represent, as a function of the intrinsic properties of those physical states.

While not uncontroversial, the representational mind provides a naturalistic explanation of the mind which allows for mental events to be causally efficacious via their inherent properties. If, in the representational theory of mind, a propositional attitude can be causally related to behaviour in virtue of its content, then the representational theory of mind is commensurable with the types of theory often generated to explain phenomena in clinical and related areas of psychology. This is because theories in clinical psychology often rely on the causal efficacy of mental events to explain phenomena.

The representational theory of mind, through introducing causal thought content in personal level explanations, provides a plausible explanation of how mental events can be causally efficacious. However, this poses certain difficulties, primarily, how to account for causation by appealing to the content of mental events. The inclusion of the content of mental events in causal explanation gives the representational theory of mind an explanatory edge over functionalism. Functionalism does not explain why mental events would interact in any rational manner with behaviour, assuming that this is part of the functional role (Lycan, 2006). The challenge for the representational theory of mind is, therefore, to explain the causal relationship between physical structures that occur by virtue of the rational relationships that hold between the propositional contents they realize (Bermudez 2002). The way it achieves this is to assume a relationship between the content of the propositional attitude and the vehicle of that propositional attitude. The vehicle of the propositional attitude is assumed to be like complex symbols in an 'internal language of thought'. The representational theory of mind holds that the relationship between a propositional attitude and its vehicle is similar to the relationship between syntax and semantics. The syntax provides the formulae or rules and the semantics provides meaning (Bermudez, 2005).

Consider the nature of the vehicle of the content of the propositional attitude. Within the vehicle of the belief that 'the sky is falling', it should be possible to recognise the basic elements of the propositional attitude. Here the propositional attitude is similar to the basic semantic content of a sentence (sky, falling, etc). The basic units are represented by symbols which are structural isomorphisms of the physical elements that occur on the algorithmic level of brain processing (basic sense data that is pieced together according to some cognitive algorithm). The physical elements (symbols) of the proposition vehicle are combined in a manner that maps onto the way concepts combine to make a sentence that represents a propositional attitude. In this way unlimited combinations of propositional attitudes are possible, because the basic units can be used in multiple combinations, as is the case with written language. Such combinations are thought to follow natural logical form (Bermudez, 2005).

By virtue of its focus on the importance of the content of mental events, the representational theory of mind is compatible with cognitive behavioural approaches in clinical psychology. Conceptualising the content of mental events as being expressed by a syntax-like vehicle, the representational theory of mind offers CBT the opportunity to justify its claim that cognitions can relate causally to feelings and behaviours by virtue of their inherent properties.

The eliminativist mind and radical behaviourism

Eliminative materialism is an extreme monist position that considers all human behavioural phenomena to be explainable by appeal to the micro-structure of the brain. Eliminativism rules out all but purely physical explanations of behavioural phenomena. Therefore, all mentalistic causal hypotheses are false. Therefore, the eliminative theory of mind regards commonsense mentalistic explanation as false. For example, explanations like "John hit Sam, because John believed that Sam broke the rules of the game, which made him angry" have no scientific worth in explaining behaviour, according to eliminativism. An eliminativist explanation would attempt to explain the same situation on a sub-personal, physical level. To put the explanation in eliminativist language, "The behaviour was executed after *x* cluster of neurons fired, subsequent to information *y* being received through the perceptual system". Eliminativism is a widely applied epistemological position within the 'pure sciences' like physics, but not necessarily within the biological sciences, and seeks to contain explanation of phenomena through the causal laws working at the lowest explanatory level (Ramsey, 2007).

The eliminative position can be divided into two factions, those that believe mental events do not exist, only brain states exist (the irony of this sentence has humoured many cognitive theorists), and those that believe that mental events do exist, but that we have misunderstood their nature, and that they will be explained, in the future, through appeal to their neuro-physiological substrate (Ramsey, 2007).

The case for a strong reductionism of mind, like eliminativism, poses a number of difficult questions for psychology. For example, Vanderwolf (1998) states that "the fundamental theoretical basis of the field remains rooted in ancient mentalistic concepts. Thus it is commonly accepted that Aristotelian subdivisions of the mind such as perception, emotion, cognition, and memory provide valid explanations of human behaviour" and that "in contrast to other scientific fields such as chemistry, biochemistry, molecular biology and physics, psychology has made very limited progress in the past century despite strong institutional support" (p. 135). Similar to the theories of eliminativism and strong reductionism, Vanderwolf regards the way that psychology conceptualises mentalistic phenomena to be false.

Eliminative materialism dictates that all behaviour which occurs on the personal level will ultimately be understood in the laws and language of the lowest level of explanation. While eliminativism challenges foundational psychological theory, it is not without criticism, with many considering it fundamentally flawed (Bermudez, 2005). The explanation of behavioural phenomena strictly by appeal to the lowest level of explanation, or the smallest unit of analysis, is not common in the biological sciences. For example, a tree could be described and explained through the laws and language of its physical properties but its 'tree' categorisation would still be useful (Smart, 2007). The main problem with an eliminativist position within the physical sciences is that the meaningful properties present at the higher levels-of-explanation are not captured.

Radical behaviourism, poses the same difficulties for professional psychology's use of mentalistic concepts in its theory and practice, as does eliminativism. According to radical behaviourism, what we think of as mental events are unable to be causally efficacious, because these 'mental events' are not considered causes of behaviour but behaviour in their own right, to be explained, not to do the explaining (Plaud, 2001). Radical behaviourism adopts its own frame of reference, as the science of behaviour and not the mind. Further, radical behaviourism

distinguishes itself from other related but separate disciplines such as neurophysiology. Both radical behaviourist and eliminative materialist positions directly question the usefulness and validity of the mentalistic concepts that feature heavily in the theory and practice of clinical psychology (Plaud, 2001). Such determined challenges to the validity of the foundational tenets of clinical psychology need to be addressed, both with respect to theory construction, as well as more generally within clinical, and other parts of psychology.

There exist a number of competing philosophies of mind, which differ in their commensurability with the theories and practices of clinical psychology. Given that an advanced physical understanding of the brain is currently unavailable, theorising about the nature of subjectively experienced mental events, above and beyond that which can be directly measured, is necessary. Both psychology and philosophy of mind are directly concerned with, and make assumptions about, the nature of mind. However, while some of the advances in psychology have had an influence on the philosophy of mind (for example, cognitive psychology) the influence of philosophy on psychology is less obvious. If the development of theory and practice in clinical psychology is to be firmly grounded in current knowledge of the brain and the mind, it must be aware of and be guided by not only current knowledge in wider psychology, but also other related disciplines. As demonstrated in this chapter, while there are philosophical theories of mind which challenge the plausibility of concepts and central theories adopted in clinical psychology, there are also philosophical perspectives that are congruent with these concepts and theories. Most importantly, from a metaphysical stance, it is possible to conceptualise causally efficacious mental events that are grounded within a naturalistic world view.

Chapter Four

Levels-of-explanation: A framework of reference

Exploring the mind: The combination of theory and data

The essence of the mind/brain problem can be described in the following way. Firstly, subjective experience exists for each individual alone; my experience of pain is not felt by you; I could not even really describe it to you. Secondly, when I experience pain, a physical event occurs in the brain that can be observed by others, that can be explained in the language of the natural sciences, and that exists in the world of physical material. Thirdly, the first point (subjective experience) depends wholly on the second point (physical brain event). This is referred to as the mind/brain problem (Humphrey, 1992). When stated this way, the solution to the mind/brain problem should include both theorising the metaphysics of mind as well as knowledge of the physicality of the brain. It is within the discipline of psychology that interest in the subjective experience of mind and physical events of the brain, naturally intersect.

When investigating the mind within the discipline of psychology, causal mysteries need to be avoided and naturalism must take precedence, because to appeal to any kind of spirit/body dualism would be to render the scientific investigation into clinical phenomena irrelevant. Given that Cartesian Dualism is firmly rejected in any attempt to understand the mind from a scientific point of view, the task at hand is "how do we conceptualise the mind?" To do this, an amalgamation of metaphysical theorising and empirical knowledge is needed. Integrating these different types of knowledge, about the nature of the mind now becomes the focus of inquiry. In order to develop a defendable theory on the mind it is important first to establish a general framework of understanding to account for the empirical basis for theorising about the nature of mind, and second, to successfully merge theoretical and empirical evidence.

Levels-of-explanation

Psychological theory is predominantly concerned with understanding the brain and its processes, whereas the philosophy of mind is predominantly concerned with metaphysics. To understand the mind in its entirety, an integration of the two must be achieved. A recently promulgated paradigm with which we can organise our conceptualisation of how the mind

produces complex behaviour is to consider the mind as working at different explanatory levels, extending from the molecular level up to higher cognitive functioning. This is known as a "levels-of-explanation" framework (Bem, 2001; Bermudez, 2005; de Jong, 2002).

Psychological theorists have established that these different explanatory levels form a clearly defined hierarchy (Bermudez, 2005). A significant benefit of this approach is that by conceptualising the mind as operating on different levels one is presented with a clear framework with which to piece together the different scientific and philosophical accounts of mind. To illustrate the utility of a levels-of-explanation framework, consider the example given by Marr (Marr, 1982). In his example Marr uses the visual system to describe how such a hierarchy of explanatory levels would work. He proposes three sub-personal levels: the computational level, the representational and algorithmic level, and the hardware implementation level. The computational explanatory level identifies the information that the cognitive system processes (in put) and that which it produces (out put). The algorithmic level contains information processing instructions or algorithms, and solves problems posed at the computational level. The implementation level is concerned with the neuro-physiological substrates of the algorithm. Evidence of cognitive dissociations in clinical neuropsychology are used to support the computational level of explanation, psychophysics is used at the algorithmic level, and physiology at the implementation level (Bermudez, 2005). These three levels-of-explanation are equivalent to what psychologists call modular cognitive processes. These processes are lower level cognitive processes that provide rapid solutions to highly determinate problems (Bermudez, 2005), unlike non-modular, higher level cognitive processes.

The distinction between modular and non-modular processes is analogous to the division between personal and sub-personal levels-of-explanation. The personal level of explanation seeks to explain and predict behaviour by assuming that humans have minds which allow them to behave as intelligent agents (Bermudez, 2005). The personal level of explanation is placed at the top of the hierarchical levels-of-explanation framework and is often referred to in psychology as 'folk', 'common sense', or 'naive psychology'. Empirical investigation at the personal level of mind is difficult due to the complexity of the subject matter.

Because of the limitations of knowing mental events empirically, the validity of explanation at the personal level is a source of continual debate. It can be argued that personal level explanation provides greater understanding of behaviour than eliminativist paradigms. Consider the following point as to the explanatory worth of personal level explanation, which will be covered in greater detail later in this chapter. While despairing of gaining any understanding of consciousness, Gottfried Leibniz (1714), compared the mind to an imagined tour of a flour mill. He stated that we could enter the mill and walk around and observe the motion of the machines, just as we may examine the physicality of the brain. However, the physical operation of the mill is but one aspect of its operation. An operating mill is more than the sum of its physical components. It is a place where grain is ground to make flour for bread. It is a place of employment and therefore fulfils a societal necessity. These concepts are integral to any explanation of a mill. One could miss these aspects if, in a visit, all one saw was a collection of moving metal parts (Humphrey, 1992). The same is true for the human mind. When investigating the mind, it is easy to fall into the trap of adopting an altogether too narrow conceptualisation of the brain and its processes. Ultimately, any comprehensive explanation of the mind must take into account all that the brain produces, from neuro-chemical impulses to the complex behaviour of intelligent beings which occurs within a social context.

Within a levels-of-explanation framework, explanation of behaviour can be achieved by appealing to causal factors within the same explanatory level or across levels, otherwise referred to as 'horizontal' and 'vertical' explanation. Consider the example of a ball breaking a window. When asking "why did the window break?" a horizontal explanation may be that the ball hit it. However, this still leaves unanswered a string of 'why' questions. Why did the window break when the ball hit it? With this question, an appeal is made to vertical explanation, which describes the physics involved (Bermudez, 2005). This analogy can be applied to psychological explanation. The division of the mind into a hierarchical structure allows different disciplines like neurophysiology and cognitive psychology to retain their academic integrity, while allowing for the commensurability of content. While horizontal explanation at the personal level appeals to the causal nature of mental events, the notion of a vertical explanation appeals to lower levels in order to provide the physiological basis of behaviour.

Presently, abnormal and clinical psychology primarily provide horizontal explanation of the aetiological role mental events play in development of psychopathology. For example, it is possible to observe and study the correlation between cognitive style and the presence or absence of depression, but the explanation of the causal role of mental events through the laws and language of the sub-personal is not seriously addressed in clinical psychology. Can mental events have a causal relationship with behaviour and emotion? And can this type of causal explanation ever be understood by the laws and language of sub-personal levels-of-explanation? The answers to these types of questions need to be better understood in clinical psychology. At stake is the validity of the knowledge base of cognitive approaches in clinical psychology. For example, is it possible, or even necessary, to scientifically understand, in psychological terms, 'depressogenic' thinking, which is often regarded as an aetiological factor in depression? Considering that claims made about the causal nature of cognitions in CBT theory are often manifest at the personal level, the domain of commonsense psychology and its ability to explain human behaviour needs to be considered in detail.

The adoption of a levels-of-explanation framework allows for the improvement of our understanding of the mind and provides reference points for clinical psychology to develop theories about the nature of mental events. Allowing for commonsense psychological explanation at the personal level, while at the same time uncovering causal relationships with sub-personal modular levels-of-explanation, is essential to the understanding pathological behaviour. Such an approach would not only identify relationships between the current knowledge we have of the mind and the brain, but also provide direction for research and provide the grounding for a wider unifying theory development within psychology.

The benefits of adopting a levels-of-explanation framework of mind

Clinical and abnormal psychology cover a wide variety of subject matter. To illustrate this point, consider the wide range of aetiological explanations given for the development of depressive disorders in a typical third year Abnormal Psychology text book. These cover: biological dimensions, including familial and genetic influences, neurotransmitter systems, the endocrine system, sleep and circadian rhythms, and brain wave activity; psychological dimensions, including stressful life events, learned helplessness, and negative cognitive styles; and social and cultural dimensions, including marital relations, gender issues, and social support.

These are all well established as causal factors in the development of depression, but do they have the same epistemological worth? In answering this question, it is prudent to consider the different research methods typically used to gather this information. The genetic contribution to depression is mainly established using research methods from the social sciences. These methods typically have large sample sizes and look to establish whether or not there is a higher likelihood of the co-occurrence of a specific disorder in relatives than in the general public. This type of study yields different knowledge than does experimental research, which typically involves the manipulation of an independent variable and the measurement of a dependent variable and can make stronger claims about causality. This differentiation between types of aetiological information may not be important within specific sub disciplines of psychology. A researcher interested in the neurophysiology of depression does not need to incorporate cognitive style into their research. However, a clinical psychologist necessarily handles a wide variety of epistemologically different information. They do so as part of professional practice, whereby an attempt is made to gather all relevant aetiological information in order to formulate clients' problems and inform effective treatment. For this reason, clinical psychology has a lot to gain from the establishment of an overarching theoretical framework for psychology.

A levels-of-explanation approach is consistent with the theory of autonomous mind for it allows the basis of behaviour to be physical, but it denies that explanation of behaviour can be reduced purely to the laws and language of the physicality of the brain. It also encompasses the different sub disciplines concerned with the mind in a coherent and useful manner, and allows a clinician to organise information in a way that makes sense when formulating cases. Importantly, such a levels-of-explanation model allows for commonsense explanation of behaviour to be included when explaining the behaviour of intelligent agents, while still adhering to a naturalist world view. Commonsense explanations of behaviour are often utilised in the profession of clinical psychology in establishing the importance of causal mental events.

The evolution, and importance, of the qualia of subjectively experienced mental events

When applying philosophies of mind to the explanation of behaviour, two broad and opposing positions emerge: eliminative materialism and the autonomous mind. Both theorise about causal antecedents of behaviour and whether mental events genuinely exist. Put simply, the issue at hand is whether one can rely on purely physical explanations of behaviour, or

whether one also needs to acknowledge an approach that employs meaningful, context driven personal level explanations. Although an eliminativist position would consider meaningful explanation redundant, because all behaviour should be explained in physical terms, certain phenomena cannot be explained from a purely physicalist position. Robert Maunder (1995) highlights the weaknesses of a purely physical approach to the explanation of behavioural phenomena. He cites studies investigating the social behaviour of Veret monkeys. When a male Veret monkey assumes a dominant role within their social group, neuro-physiological changes occur; principally, increased serotonin levels are observed. If one was attempting to understand why the monkey was acting more violently (a question of specific relevance to forensic psychology), a reductionist position would conclude that the aggression was caused by an increase in levels of serotonin. Although not incorrect, a physical explanation is insufficient to fully explain the observed phenomenon because the observed increase in serotonin levels occurred in response to the monkeys' experienced change in their social situation. An explanation of the workings of a social hierarchy and ones position in it cannot be done in the language of physiology alone. This highlights the problem of what, if any, importance should be given to the qualia of a mental event. If we had the ability to describe qualia in terms of the physical process underlying it, would that explanation capture the subjective experience of what it feels like to be 'top dog'? Can a blind neurologist, who knows everything about the physical process of seeing know what its like to see colour? (Edelman & Tononi, 2000). If not, then is a physical explanation enough? The answer seems to be no in the case of the Veret monkey because a non physical event caused the physical reaction by virtue of its content or meaning. Thus, an eliminativist approach seems inadequate.

Establishing a suitable account of why meaningful explanations, based on the qualia of subjectively experienced mental events, are an essential component of explaining the behaviour of intelligent agents is difficult because of the obstacles to knowing the qualia of mental events objectively. If subjectively experienced mental events cannot be measured or studied objectively, then how are they to be justified scientifically? One way in which it is possible to establish the grounds for including the qualia of mental events as necessary for a complete explanation of behaviour, is by considering the evolution of the mind. One of the main theorists of the evolution of mind is Daniel Dennett (1996) whose ideas on the nature of mind are set firmly within an evolutionary context. Although it is outside the limits of this thesis to cover Dennett's ideas in

thorough detail, there are certain insightful points he makes which inform our concept of mind. Of particular relevance is the importance, and evolution, of how humans represent the world in their subjective experience. There are several important tenets that form the basis of Dennett's argument, one of which states that evolutionary changes do not effect the discarding of previous adaptations (Dennett, 1996). The usefulness of this tenet is that the mind looses some of its mystique and allows us to look at our evolutionary past, close human relatives (primates), and other animals for knowledge of the nature of mind. This tenet states that it would not make sense for an organism to completely reconfigure an adaptation. Instead it would further mould what is already present. This is seen to some extent in the modular conceptualisation of the evolution of primate binocular vision. D Marr (1982) elaborated the principle of modular design, conceptualising the visual cortex as being made up of a series of separate representations in the mind rather than giving a single map of the whole visual field. In this respect, a small change/adaptation does not mean that the whole picture needs to change in its entirety. This allows for the breakdown of the visual field, and gives a more feasible platform from which we can contemplate the occurrence of evolutionary mutations (Gregory, 1987). Thus, a modular approach allows for the addition of adaptations without complete reconfiguration of the mechanism. Similarly, the 'minds' of our distant primate ancestors and their modern equivalents are the basis for the mind we now know. When considering the nature of mind and mental events we need to consider the evolutionary advantages facilitated by the primate mind as well as the way in which our mind differs from other mammals, primates in particular (Dennett, 1996). Herein may be the answer as to what makes the human mind what it is.

According to Dennett (1996), one of the main differences thought to exist between humans and their closest genetic relatives, is that humans have evolved with the ability, closely related the development of language, to produce meaningful mental representations of objects that occur in the natural world, and can manipulate these mental representations (Dennett 1996). Humans share with other mammals the ability to distinguish and therefore label important aspects of our environment. This is an essential skill for survival; consider, for example, the rabbit who has to distinguish its predator, the fox, from its surroundings. Further, vision, as opposed to the other senses, has played a unique role in the evolution of the human brain. The relatively large human neo-cortex, which facilitates greater cognitive capacities, is thought to have developed in our primate ancestors because of their increasing reliance on processing visual

information. Our early, prosimian-like primate ancestors, who developed forward facing eyes, displayed a related enlargement of the neo-cortex in the occipital and temporal lobes (Gregory, 1987). Further, the evolutionary path which lead the primates down from the trees, necessitated the development of visually based cognitive/memory skills in order to detect and track seasonal food sources over large tracts of land (Gregory, 1987). Therefore, visually based cognitive processes can be considered essential to the evolution of our current mind. Another important evolutionary milestone, which is related to the evolution of visual/spatial abilities, is the development of complex social groupings. Some important physiological differences between the two main primate groups, specifically in the rhinarium (the area between the upper lip and the nostrils), demonstrate the importance of, and link between, visual ability and social interaction for the evolution of the mind. An increasing social complexity, which contributed to the development of the proportionately larger necortex of Homo sapiens, is found in primates with a furry rhinarium as opposed to those with a rhinarium consisting of moist mucosal tissue. A furry rhinarium allows greater facial expression, and therefore, in social interaction, olfactory cues become much less important than facial and visual cues (Gregory, 1987). While at some stage in our evolutionary past we may have had a similar mind to the other mammals, our cognitive capacity, and the ability to discriminate important objects in the environment, has been superimposed over our mammalian proto-mind and has progressed and adapted. This is because of, among other factors, the increasing importance of visually based abilities and increased social complexity.

As a result, humans are able to voluntarily conjure up a thought/image/ mental event of the concepts our mental life consist of and manipulate them. These abilities are also mediated by the use of language (Dennett, 1996). In making this point, Dennett (1996) refers to those studies that have famously established that primates and other animals have the ability to problem solve and carry out tasks that rely on humanlike cognitive ability. For Dennett (1996), the difference is in the flexibility of representational thinking. One person could explain an absurd scenario to another, who would then be able to form a mental image of that scenario with relative ease. For example, picture a small dog dressed as a policeman, smoking a cigar while balancing on a beach ball. This type of mental flexibility is unlikely to occur in other mammals (Dennett 1996). Other animals more than likely have representations of the environment, but humans can form representations of representations. For example, one can draw a map of Paris, and thus, not only

see Paris, the capital of France, in its physicality, as other animals may do, but one can also make a map or draw a picture of what one sees and recognise it as a representation of Paris (Dennett, 1996). These abilities are likely to be the product of our unique evolutionary path; a path which has resulted in highly evolved cognitive capacities born from the importance of visual and social ability.

When considering the possible evolution of the mind, some of the mystery which has surrounded its nature is reduced. If we adopt a naturalist position on the nature of mind, then the phenomenon we know of as the mind is believed to have evolved from the 'precursor to mind' that our evolutionary ancestors experienced. This information helps to inform current conceptualisations of the mind and helps ground metaphysical debate in a naturalist context. Considering mind from an evolutionary perspective suggests the importance of the development of visual abilities and therefore, the ability to meaningfully represent the world via subjective experience. Furthermore, social interaction is also an important piece of the puzzle in the evolution of mind. The initial evolutionary benefits that progress in these areas provided set a platform from which increasingly complex cognitive abilities, and therefore, increasingly complex ways of interacting with and representing the world, developed. On this view, the way humans consciously, meaningfully, and subjectively represent the world is central to their functioning within that world.

Commonsense explanation of behaviour

The attempt to retain the importance of qualia in the explanatory process is one part of the mind/body problem and is a product of the specific difficulty of systematically understanding behaviour from a commonsense approach. This problem is of central importance to the field of clinical psychology, which is invested in the value of commonsense explanations of behaviour, separate from purely physical explanations. Further, as already stated, the explanation of complex behaviour in purely physiological terms is not possible given our current understanding of the brain. Given that a comprehensive physical explanation of behaviour will always elude us, is the employment of mentalistic concepts in commonsense explanation useful? What would such explanation look like? And, can such explanation be systematic and scientific when employed in understanding behaviour? These questions are of particular relevance to psychology in general and clinical psychology in particular.

The term ‘folk’ or ‘commonsense psychology’ refers to the natural human tendency to explain the behaviour of others. Explanations of this sort often appeal to particular mental states such as beliefs, desires, and thoughts as causes of behaviour, and are therefore, concerned with the qualia or nature of those mental events (Nichols, 2004). This type of commonsense explanation is similar to the Veret monkey example and is at odds with a reductionist, purely physical, explanation of human behaviour. Applied to the Veret monkeys’ social hierarchy, a commonsense explanation might look like this: ‘The monkey has become more aggressive, because through the death of the former alpha male, he finds himself in the dominant role. The reason that, as the alpha male, he now becomes more aggressive is that he believes he needs to protect his social position from other contenders for the dominant role’. There has been no appeal to neurophysiology here; rather, explanation is given in a particular and appropriate manner as to why the monkey is acting aggressively. Therefore, both commonsense and physically based explanations of behaviour provide important information as to what causes behaviour. Both need to be incorporated in a comprehensive explanatory model.

Commonsense psychological explanations rest on the idea of intentionality, the idea that behaviour can be explained by considering an entity acting as if it were a rational agent, choosing to behave a certain way caused by mental events. Importantly, if one can understand why an agent acts the way it does, one can predict further behaviour (Dennett, 1996). From an evolutionary perspective, the ability to hypothesise and explain why others carry out certain actions is of great value for animals that live in social groups (Smith & Mackie, 2000). But this type of explanation has a number of flaws which are often demonstrated in common misunderstandings. For example, your laughter at my jokes may simply be politeness, but I may misinterpret your laughter as genuine amusement. Humans have become highly adept at making social judgements (Smith & Mackie, 2000).The reason for the high likelihood of error is that commonsense psychological explanation attempts to explain the very complex phenomena of the behaviour of intelligent agents. To further examine commonsense explanation and why this kind of explanation is prone to error, it is helpful to look at the different explanatory stances described by Dennett (1996) and the reasons for adopting these stances.

If it is assumed that the goal of this commonsense explanation is to best understand human behaviour using the means at our disposal rather than appealing to the possibilities of

future knowledge, or discounting current knowledge because of its current epistemological failings, then a pragmatic approach should be taken, which takes into account the necessity of understanding the behaviour of intelligent agents in the present. It is possible to identify three basic approaches to the explanation of behaviour that vary in their usefulness according to the complexity of the phenomena they attempt to explain. These are the physical, the design, and the intentional explanatory approaches (Dennett, 1996). Firstly, the physical stance is consistent with eliminativism and attempts to describe phenomena in terms of physical properties. However, due to our limited knowledge of the functioning of the brain, the physical stance is currently unhelpful as a sufficient approach to understanding the behaviour of intelligent agents. This is not to say that there are entities which operate outside physical laws, but rather, that we cannot apply them in a complete explanation of behaviour – a point noted previously. When making a prediction from the physical stance we can be quite certain that the prediction is correct (Dennett, 1996).

A second approach is that of the design stance. The design stance is more flawed than the physical stance because it makes more assumptions when attempting to predict outcomes. This position is based on the assumption that things which are designed, are designed to work in a particular manner. Consider the example of an alarm clock. An alarm clock is a physical object whose 'behaviour' can be predicted via the physical stance but to do so would be time consuming, and for most, beyond the limited knowledge of the principles involved (physics, electronics, etc). Alternatively, one can predict the behaviour of an entity based on its design. Therefore, one can predict, due to the designed purpose of the alarm clock, that if you push certain buttons in the correct sequence then, after a certain period of time, the alarm will go off. With the design stance, one makes assumptions that the object will act in certain way. This provides a very attractive short cut in explaining the behaviour of the alarm clock, but increases the risk of making a mistake because faults occur. If you were in possession of a faulty alarm clock, your assumption about the behaviour of that alarm clock would change based on the physical stance but not on the design stance (and as a result you may be late for work). The design stance works well in predicting the behaviour of manufactured objects, but it also works well with things 'designed' by mother nature (Dennett, 1996)

Last is the intentional stance. The intentional stance treats the object-to-be-explained as an agent of sorts, and explains actions in terms of intentions. It is more swift than both the physical and the design stance but is less safe in terms of precise prediction (Dennett, 1996). Applied to the example of the alarm clock, we may explain its behaviour using the intentional stance in the following way: 'We have given the alarm clock a command which it understands; therefore, it will be able to perceive when the time has come to make noise. When it believes that that the time has come, it will be motivated to make the alarm noise and subsequently wake you up'. This type of explanation is utilised because of its practicality, and is used not only for inanimate objects but also living things (Dennett, 1996). Consider the behaviour of a honey bee. From an intentional stance, one could predict that any particular bee will spend the summer collecting pollen so that it can be made into honey to increase the survival chances of the hive over the winter. One could say that the bee is motivated to do this because it is worried about its chances of getting through the winter. You could also say that the bee is concerned about his fellow bees in the hive and therefore, does not hide its pollen away for itself but adds to the common store. The result is that you have predicted a behavioural outcome based on the supposed intentions of the bee, with the help of the knowledge you have about the behavioural patterns of honey bees. In this case you could be almost certain that your prediction would be correct, despite the fact that the bee may or may not have the conscious experience of subjective thought like 'I better collect some pollen or I will starve during the winter' or 'I will take this pollen to the hive and not be selfish myself because that will help out my bee friends'. The intentional stance can correctly predict the behaviour in this instance, whether or not the agent experiences those intentions. The alternative would be to explain the actions of the bee referring solely to physical laws – an eliminativist approach. As discussed, this is not possible given our limited knowledge of how the brain as a whole gives rise to behaviour.

It is the intentional stance shortcut that is used in commonsense psychological explanations of behaviour. The prediction of the actions of intelligent agents can be made using the intentional stance. This approach has its problems but it works and has proven a valuable tool during our evolution (Smith & Mackie, 2000). The intentional stance may provide an understanding of our environment that is easier to undertake than other, more rigorous forms of prediction. However, despite its usefulness, the question needs to be asked: can this natural

ability be used to gain knowledge analogous to scientific knowledge? In other words, can the harness of scientific method be applied to the horse of folk psychology?

This is a serious hurdle to the commonsense explanation of human behaviour, because as is evident in cognitive and social psychology, human reasoning is naturally fraught with many errors of logic, in part due to the vast amount of information we need to process at any given moment (Smith & Mackie, 2000). However, it has been established that commonsense explanations of behaviour by appeal to mental events is useful, if at times flawed. The question of whether our commonsense, intuitive process of understanding the behaviour others, can be made scientific needs to be answered for a number of reasons. Autonomous mind theories state that purely physical/reductionist explanations fail to address the important concepts of intentionality or phenomenality which are necessary to understand human behaviour. Thus it seems clear that a better understanding of behaviour than is provided by the purely physical stance is needed. Further, psychology, and clinical psychology in particular, have invested interest in explaining why behaviour occurs – psychology because it is the science of brain and behaviour and clinical psychology because, not only does it utilise the scientific knowledge gathered within the wider discipline of psychology, but also because it applies that information idiographically. Clinical psychology applies that knowledge to specific individuals in both explaining why a particular presentation has arisen but it also gives advice on how to change pathological patterns of behaviour (Brendel, 2000).

The answer to the question, can we use scientific methods to construct commonsense explanations of behaviour, or explanations from the intentional stance?, is most probably 'yes'. Social psychology, as a sub-discipline of psychology, has defended the causal relationship of beliefs, attitudes, and socially determined norms to behaviour in the face of the earlier behavioural/positivist dominance in psychology (Smith & Mackie, 2000). It continues to describe the rich complexity of human behaviour, within a social context through appeal to the effect of meaningful, subjective mental events on behaviour. Take as an example, one of the first phenomena to be labelled part of 'social psychology'. Norman Triplett, in 1898 found through experimentation that people tended to perform quicker when winding fishing line onto reels in the presence of others than alone (Smith & Mackie, 2000). Social psychologists attempt to explain such a phenomenon by appealing to the significance the participant placed on performing

in front of others, through the ideas and mental events they experienced at the time about the importance of giving a good impression.

To function effectively in a social world, people naturally study and hypothesise about the behaviour of others (Smith & Mackie, 2000). For example, we do this to gain promotion, to attract romantic partners, to establish standing in the social groups to which we belong, and to avoid injury from others. We also use it to navigate the social world, to work back from behaviour to decipher what people are thinking, and to predict how people will act in a given situation (Bermudez, 2005). Likewise, social psychology is also concerned with explaining social behaviour. Therefore, in this sense, commonsense explanations of behaviour and scientific social psychology are alike. The way they differ is found in the methods they use, not the goals they seek (Fletcher & Haig, 1989). In other words, social psychology attempts to apply scientific method to the observation of behaviour (commonsense psychology) in order to identify systematic patterns or phenomena that might be classified as scientific knowledge.

Social science research methods are employed to establish the validity of the constructs and processes evident within the different disciplines concerned with the explanation of behaviour. Because of the nature of the content under investigation in many sub-disciplines of psychology, research methods used to hypothesise and validate latent constructs have been developed. Although far from perfect, these research methods are employed to allow the development and testing of worthwhile theories. Therefore, it can be argued that there currently exists the means of testing commonsense mentalistic explanations in an empirically based scientific manner. The research methods employed in psychology do warrant criticism, but mainly for their inappropriate use and inability to contribute to unified theory (Trierweiler & Stricker, 1998). Psychological theory development and testing is fragmented and lacks a cohesive unifying framework (Ilardi & Feldman, 2001; Trierweiler & Stricker, 1998). This is particularly so within clinical psychology (Westen & Bradley, 2005), whose theory and practice would benefit from being more closely related to advances in other psychological sub-disciplines. A levels-of-explanation framework provides the ability to look for cohesion among these often disparate approaches. It has been established that commonsense explanation of behaviour via appeal to causally efficacious mental events is possible, useful, and can be known systematically and scientifically. The benefit of being able to systematically and scientifically

explain behaviour from the intentional stance is that ultimately, prediction of behaviour can be successful whether mental events are causally efficacious, and guided by causal laws, or not.

Given that psychology adopts a physicalist world view, what then is the relationship between mental causes at the commonsense level and the physical brain?

The adoption of philosophy of mind within a levels-of-explanation framework

There is an emerging body of evidence to support a levels-of-explanation approach to researching and understanding the nature of the mind and the physical brain. This approach assumes that relations hold between the different levels of knowledge offered by the different disciplines attempting to explain mind and behaviour such as neuroscience, cognitive psychology, and applied psychology (de Jong, 2002). The attempt to reconcile knowledge of the physicality of the brain with knowledge of its processes and output is similar to giving an explanation of a computer-displayed video clip. To do this we need to utilise knowledge of the physical hardware of the computer, the algorithms and information encoding by which information is processed by the software, and the actual visual presentation of the video clip itself. Certain theoretical approaches, for example Ilardi and Feldman's (2001) Cognitive Neuroscience Paradigm, have been proposed to provide unifying meta-theoretical frameworks of mind. The Cognitive-Neuroscience paradigm rests on several clear premises, and provides a framework in which consilience (linking facts and fact-based theories across disciplines) can be established between the knowledge of different disciplines. Huib Looren de Jong (2002) describes the benefits of understanding the mind using a levels-of-explanation, giving a credible example of how such an approach would be structured and function. Therefore, the levels-of-explanation approach can be considered a reasonably well established paradigm utilised to gain a more integrated understanding of the mind and its physicality.

Interestingly, both Ilardi and Feldman (2001) and de Jong (2002) tend to downplay the importance of knowledge offered by philosophy of mind in favour of knowledge from philosophy of psychology or philosophy of biology, which are less concerned with metaphysical matters and more with consilience between different levels of the physical brain and its processes. The philosophies of psychology and biology are applied by de Jong to assess consilience between different sub-personal levels. However, theorising about the nature of

mental events and their relationship to behaviour, while still grounded in empirical fact, relies more on theorising about the nature of mentalistic concepts, in other words, metaphysics. Ilardi and Feldman (2000) place little importance on the personal level of explanation, choosing instead to explain such phenomena via a token identity, mental state-equals-physical-state explanation. While this approach grounds the mental event in its physiological substrate, thus providing the possibility of mentalistic causation, it still does not explain what a thought is or illuminate the causal mechanism involved.

The attempt to understand the mind through a levels-of-explanation paradigm facilitates an improvement in our understanding of mind and provides a basis for further research. However, current attempts fail to sufficiently include personal level, commonsense explanation of behaviour. Namely, while great care is taken to reinvigorate approaches to knowledge in the sub-personal levels, links to mentalistic events and their causal properties are not as well covered. As has been argued previously, such information is embedded within the theory and practice of clinical psychology. Establishing strong links between mental events and their biological substrates, in an effort to increase the validity of our knowledge of complex human behaviour via commonsense explanations, is essential to increasing the scientific worth of clinical psychological theory. Philosophy of mind is able to inform our concept of mind at the personal level, and should be employed in such a manner. Within a wider frame work of mind, philosophy of mind can be applied to increase the validity of our concept of mental events and their causal properties at the personal level. Theories, like the representational theory of mind, can provide insight into the causal properties of mental events and provide possible links with physical substrates through a language-like structure analogous to a thought's lower physicality. Philosophy of mind needs to be woven into any levels-of-explanation frame work due to the insights it offers about mental events and their functioning at the level of commonsense explanation.

Metaphysical theorising focuses primarily on understanding a certain class of cognitive states that do not occur at the lower levels-of-explanation: principally, the intentional states of beliefs and desires. These intentional states guide commonsense explanation of behaviour because they have content, and are based on representations of the world. Explanations of behaviour at the personal level also identify regularities of behaviour that are not reducible to the

lower levels-of-explanation. Such explanations, as we have seen, are essential to the profession of clinical psychology, but they are not without their critics. However, they seem to be currently widely used, provide essential information over and above purely physical explanation, and provide an essential, albeit flawed shortcut to understanding behaviour in a clinical setting.

The mind/brain problem is centred on reconciling and explaining subjectively experienced mental events and the physical processes on which they are based. A levels-of-explanation framework allows for this reconciliation, while retaining the non-reducible nature of explanation at the different levels. The application of a levels-of-explanation framework would have two main benefits for the discipline of clinical psychology. It would allow for the reconciliation and organisation of different types of aetiological information necessarily handled by clinicians in every day practice. It would also allow the application of philosophy of mind to often used concepts of mentalistic causation at the personal level, thus improving our understanding of the possibility and limits of explanation at this level, while still holding a naturalist/physicalist view of the mental.

Chapter Five

Evidence-based Practice

Evidence-based practice

The training and practice of clinical psychologists in New Zealand is based on the scientist-practitioner model (Evans, Rucklidge, & O'Driscoll, 2007). Because this model maintains that empirical research is centrally important, the training and practice that results is primarily cognitive behaviourally focused. Further, there is an assumption that certain procedures and principles of practice are applied by all registered clinicians as outlined in the Code of Ethics for Psychologists Working in New Zealand/Aotearoa (Evans, Rucklidge, & O'Driscoll, 2007). The code of ethics includes four overarching principles, one of which is "Integrity of Practice". Under this principle, clinicians are expected to adhere to evidence-based practice and to integrate their practice with the body of literature available in psychology. To achieve this, a generic approach is adopted whereby certain assessment, case formulation, and treatment practices are utilized. The desired result is a uniformed standard of practice across the various psychological services. Because clinical practice has a cognitive behavioural foundation, it is directly concerned with the mind and predicting behaviour based on information about mental states.

The professional practice of clinical psychology in New Zealand is committed to grounding clinical practice on a base of scientific knowledge. However, this approach does not explicitly require attention to the inadequacies of the current knowledge base. As previously discussed in chapter one, empirical pursuits in psychology, and clinical psychology in particular, have dominated theoretical pursuits. Consequently, theoretical pursuits have not been fostered in the same way as empirical approaches when applying psychology to clinical settings. The opinion that theory and philosophy are too abstract, difficult to grasp, and largely irrelevant to clinical practice is often given as justification for this lack of application (Trierweiler & Stricker, 1998). However, because of the difficulties involved in knowing the mind empirically, theoretical and philosophical pursuits should be strongly encouraged. If theoretical and philosophical pursuits within clinical psychology were encouraged clinicians would arguably be better equipped to adhere to their ethical obligations of integrity in practice because the foundational concepts on which practice is based would be better understood.

Much relevant research, both theoretical and philosophical, is ignored in the discipline of clinical psychology. Given the argued importance of reconciling clinical knowledge with knowledge of the nature of mind as informed by philosophy and theoretical psychology, the major components of evidence-based practice and case formulation in clinical practice will be explored with a focus on the relevance of the philosophy of mind.

The scientist-practitioner model and evidence-based practice

The scientist-practitioner approach to clinical psychology is grounded in scientific evidence, through the application of basic scientific psychological knowledge to clinical settings (Evans & Fitzgerald, 2007). Indeed, this grounding in scientific research is what distinguishes clinical psychology from other helping professions (Evans & Fitzgerald, 2007). In accordance with the scientist-practitioner model, those qualifying with a postgraduate diploma or doctorate in clinical psychology in New Zealand must complete a research degree as part of their qualification. Clinicians are not only expected to be competent in the techniques of delivering a service; they are also expected to be able to contribute to research, and have the necessary skills to understand and critically appraise the current research literature. These skills guide an evidence-based clinical practice.

The basis of the modern scientist-practitioner model was established at the Boulder Conference in 1949. At the conclusion of the conference, it was decided that clinical psychologists should be active researchers as well as practitioners (Evans & Fitzgerald, 2007). The scientist-practitioner approach was initially proposed to improve on an apparent paucity of scientific knowledge in the clinical application of psychology. Much of clinical practice during the first half of the 20th century was heavily influenced by Freudian psychoanalysis, which is widely considered unscientific and therefore, unsuitable for application to psychological practice (Grunbaum, 1991). The scientist-practitioner model contrasts with the Freudian psychoanalytic approach, which dominated clinical psychology during the first half of the 20th century. The scientist-practitioner model is grounded in clinician-instigated, empirically validated research. As well as being grounded in empirical research, the scientist-practitioner model also requires clinicians to practice in a scientific manner, conducting clinical assessment, case formulation, and treatment in the same way that a researcher would formulate and test hypotheses (Evans & Fitzgerald, 2007).

To adhere to a scientist-practitioner model, clinicians must engage in evidence-based practice (EBP). For the past 40 years, the practice of clinical psychology has attempted evidence-based practice in accordance with the scientist-practitioner model (Evans & Fitzgerald, 2007). EBP is founded on the premises that: 1) patient care can be improved by the acquisition and use of up-to-date research information; 2) that it is difficult for a practicing clinician to keep up with new research in their area of practice; 3) that if they do not keep up with new research their practice quality will decline; and 3) that clinicians need the necessary skills to access information provided by experts (Chambless & Ollendick, 2001). Therefore, EBP provides a bridge between theory and practice because it demands clinicians base their practice on up-to-date evidence.

However, as the knowledge base in clinical psychology has expanded, expectations that clinicians be actively involved in research have been reduced in favour of an increased focus on professional training. The reduced expectation of clinicians' research output was recommended during the Vail Conference of 1974 (Evans & Fitzgerald, 2007). As a result, professional training in the USA now includes both the traditional combination of professional practice and research, as well as the doctorate in clinical psychology, which reduces the emphasis on original research (Evans & Fitzgerald, 2007). The tension between the practitioner as a scientifically minded professional, formulating and testing hypotheses, versus the practitioner as a technician, delivering manualised treatment as developed by academics, guides debate over how to best apply evidence to practice. At stake is the future direction, position, and professional credibility of clinical psychology as represented by professionals rather than paraprofessionals (Westen, Thompson-Brenner, & Novotny, 2005).

Is evidence-based practice achieved?

While EBP is a requirement for responsible clinical practice, a commitment to EBP requires more than the citing of an established precedent for a chosen approach to treatment. The increasing focus on empirically supported therapies (EST's) in clinical psychology as opposed to EBP in general, has lead to concerns over the delivery of EBP and fears that clinical psychologists may become paraprofessionals. Although a significant component of EBP is the understanding and use of empirically supported therapies, EBP is not the same as the use of EST's (Westen, Thompson-Brenner, & Novotny, 2005). While the EST literature guides treatment choice based on evidence of efficacy and effectiveness, EBP refers to the evidence on

which clinical psychology, as a whole, is based. Indeed, developing a greater understanding of foundational concepts, and the causal mechanisms on which therapeutic approaches are based, is arguably as important to the progress of clinical psychology as establishing effective treatments.

Empirically supported therapies are therapies classified as effective and/or efficacious according to certain criteria. Guidelines for what counts as empirically supported are given by The Task Force in Promotion and Dissemination of Psychological Procedures, Division 12 (Clinical Psychology) of the American Psychological Association (Chambless & Ollendick, 2001). This task force divided therapies into three types depending on the empirical support they have including, well established therapies, probably efficacious therapies, and experimental therapies. For a treatment approach to be a 'well established therapy' there needs to be: 1) at least two between-groups trials that demonstrate the superiority of the treatment in question over placebo or another treatment or equivalence to already established treatments; and 2) a large series of single case designs demonstrating efficacy with the use of good experimental design and comparison with other treatments. Treatments should also be clearly explained or include treatment manuals, and effects should be demonstrated by at least two independent research groups. 'Probably efficacious' treatments should be substantiated by at least two experiments, which demonstrate superiority over wait list control groups, or a series of single case design studies that meet well established treatment criteria. Lastly there are 'experimental treatments', which are treatments not yet tested in trials that meet certain method requirements. These criteria for the establishment of EST's are intended to ensure that therapeutic approaches used in clinical psychology are supported empirically in an adequate manner.

Recently there has been renewed debate about the deficiencies in the literature on EST's and, therefore, the knowledge claims that can be made from them. (Chambless & Ollendick, 2001; Weisz, Henggeler, & Weersing, 2005; Westen & Bradley, 2005; Westen, Thompson-Brenner, & Novotny, 2004, 2005). This criticism is focussed largely on the limitations of the EST literature, and how these limitations manifest in clinical practice. For example, the use of meta-analyses in the EST literature has been identified as being problematic. While meta-analyses provide a useful method by which evidence for treatment effects can be shown over a large number of studies, they also have weaknesses. Meta-analyses combine effect sizes from multiple published studies and yield an indication of the average strength of the treatment. Irregularities between study method, differences in outcome measurement, variations in

treatment delivery, differences in therapist training, use of unsuitable comparison groups, and publication bias, among other problems, all limit the worth of meta analyses as evidence of treatment effectiveness (Westen & Bradley, 2005).

The application of nomothetic information obtained from the EST literature, idiographically to clinical settings, also poses problems. The evidence from EST's is often reported as statistical averages, with results averaged over hundreds of participants, when in fact the 'average' person does not exist. The application of nomothetic information to individual clients limits the real world benefits of laboratory tested techniques. Further, EST's are often efficacious in controlled settings using participants who have no comorbid psychopathology, while clients who receive treatment in the community often have multiple diagnoses (Westen & Bradley, 2005). In an effort to isolate the dependent variable (psychopathology), possible extraneous variables normally present in real world situations are removed, thereby sacrificing external for internal validity in order to improve causal inferences. These inherent weaknesses suggest that clinicians should not simply deliver manualised treatment packages blindly because a treatment approach proven efficacious in the laboratory may not be effective in clinical practice. Instead, when engaging in EBP, clinicians need to be aware of the limitations of the EST literature and adapt their practice accordingly. This is not to say that empirically validated approaches should not be used, but that they should be used critically.

Although there are weaknesses in the EST literature, certain therapies, such as cognitive behavioural therapy, are efficacious in the treatment of psychopathology (Butler, Chapman, Forman, & Beck, 2006; McGinn, 2000; Roth & Fonagy, 2005). However, despite evidence for the therapeutic effectiveness of certain therapies, the mechanisms of change are often unclear. This is partly due to the inherent difficulties in gaining knowledge of latent causal mechanisms. It could also be argued that research into the nature of latent causal mechanisms has been overlooked in favour of research on treatment effects. While CBT treatments have proven efficacious, it is not necessarily clear why they are efficacious. For this reason, there may be causal variables other than the proposed treatment condition having an effect. Several alternative explanations have been put forward. One such explanation is that the treatment effect is caused by the therapeutic rapport established between clinician and client (Dawes, 1994). That is, the therapeutic change is caused by the positive interaction that occurs between the clinician and client. Cited in favour of this explanation is the evidence that therapist experience has little effect

on treatment outcome, that varying results are obtained from the same treatments, and that there is a similarity in therapeutic change found across treatment approaches (Dawes, 1994). Therefore, it is possible that despite the evidence for the efficacy of certain treatments, therapies may not be efficacious as a result of their proposed causes. The uncertainty over what is causing the modest therapeutic change evident in the EST literature suggests that greater effort should be applied to validating the underlying constructs and theory upon which those therapies are based.

Another problem with the over emphasis on developing scientifically stringent, efficacious treatments, is that clinical psychology has become removed from the basic science of psychology (Westen & Bradley, 2005). Again, this is not to say that the empirical support of therapies is not important to establish, but that investigation into their proposed causal mechanisms is equally important. Experiments that show depressed people tend to have reduced reaction times when primed with negatively themed words (Hedlund & Rude, 1995) do not sufficiently describe the nature of those mental events implicated as aetiologically important in cognitive theories of depression. The separation of clinical theory and practice from advances in the wider science of psychology is further exacerbated by the developmental origins of major therapeutic approaches. The majority of therapeutic approaches in clinical psychology have been founded on the therapeutic innovations of creative and intuitive clinicians, rather than being grounded in basic psychological theory (Ilardi & Feldman, 2001; Westen & Bradley, 2005). Further, there is a lack of application to clinical psychology of those innovations that occur in other related disciplines, for example, the biological sciences (Ilardi & Feldman, 2001; Westen & Bradley, 2005). The focus on establishing treatment effects in the EST literature has contributed to the current focus on efficacy rather than basic science and theory development. As a result, more emphasis is placed on researching whether or not CBT reduces depressive symptomatology, as opposed to researching evidence for the existence of depressogenic schema and their causal role in major depression, despite these two questions being of equal importance for evidence-based practice. The lack of a unifying theory in wider psychology further compromises the development of foundational theory in clinical psychology (Ilardi & Feldman, 2001; Trierweiler & Stricker, 1998). Consequently, multitudinous and disparate theoretical perspectives are often used in attempts to understand clinically relevant phenomena (Ilardi & Feldman, 2001; Trierweiler & Stricker, 1998).

To address these problems, a greater amount of research is needed to refine the foundational constructs that provide a basis for therapeutic approaches. Currently, little evidence exists to suggest that there will be any unifying theory developed to draw together these disparate perspectives in psychology at large (Trierweiler & Stricker, 1998). However, with the development of several such frameworks within clinical psychology, for example, the cognitive neuro-science paradigm, promulgated by Ilardi and Feldman (2001), there may be some reason for optimism.

A lack of unified theory, multitudinous theoretical perspectives, the lack of grounding in basic science, and the focus on EST's in evidence-based practice, have all contributed to an underdeveloped understanding of the causal mechanisms in clinical psychology. Similarly, questions about the nature of the mind and mental events directly relate to theory development in clinical psychology but they are rarely considered in the clinical literature. The ethical guidelines, by which clinicians are bound, require that clinicians practice EBP. Therefore, to meet this demand, greater efforts should be given to refining constructs within the discipline of clinical psychology.

The application of philosophical concepts of mind to cognitive behavioural models in clinical psychology

It has been argued that inherent weaknesses exist in the way clinical psychology develops and refines theory. As a result, the causal mechanisms implicated in the aetiology of psychopathology, especially the personal level of explanation, are not as well understood as current knowledge in other disciplines, including psychology and the biological sciences, would allow. It could be argued that such a lack of understanding compromises clinicians' ethical obligations to adhere to EBP. A case in point is the use of mentalistic concepts in theories of psychopathology without acknowledging the epistemological limits of such concepts. For example, the causal efficacy accorded to thoughts by CBT is rigorously denied by some philosophers (Churchland, 1981), and supported by others (Davidson, 1980). The application of the debate about the epistemological worth of concepts imbedded in clinical psychology, particularly those about latent causal mechanisms, would help theory development. Primarily, it would allow for the defence and development of those concepts central to much of the theory in clinical psychology. This would be possible, by adopting a levels-of-explanation approach,

which would allow the application of philosophy of mind to help explain phenomena in clinical psychology, particularly personal level explanation, and inter level relations. To outline how this might be accomplished, proposed causal mechanisms and empirical evidence for the cognitive models of psychopathology need to be applied across explanatory levels.

A levels-of-explanation approach to understanding the mind can incorporate cognitive models of depression for the purpose of refining concepts and theory. This can be done by considering current ways of conceptualising causal mechanisms as well as the evidence accumulated to support them and applying this evidence across explanatory levels. As discussed in chapter two, CBT is based on the premises that ones thoughts are causally related to ones feelings and behaviour. Furthermore, these thoughts can be monitored, challenged, and changed, causing a reduction in pathological symptoms (J. Beck, 1995). Beck's Cognitive Theory of Depression states that non endogenous depression is the result of the activation of negative self schema. Schemas are described as organised representations of ones prior experiences. When activated by life stressors, depressive schemas heavily influence both the content and process of ones thoughts. Affected thought content is manifested primarily in negative beliefs about the world, the self, and the future (the Cognitive Triad). Thought processes are primarily affected by distortions in the biased focus on, and interpretation of, information from the environment (Ingram, Scott, & Siegel, 1999). Cognitive aetiological models of depression are considered to be well established through a broad base of research (Ingram, Scott, & Siegel, 1999).

Empirical evidence of affected thought content via depressive schema activation, demonstrates that depressed people report more negative and less positive automatic self referent thinking than controls (Ingram, Slater, Atkinson, & Scott, 1990), as well as a greater tendency to evaluate other stimuli negatively (Hokanson, Hummer, & Butler, 1991; Siegel & Alloy, 1990). Indeed, the evidence for the existence of the negative Cognitive Triad is extensive and regarded as a central aspect of depression (Haaga, Dyck, & Ernst, 1991). Evidence for the presence of dysfunctional information processing in depressed individuals has also been well established (Ingram, Scott, & Siegel, 1999). Depressed people have been shown to display a biased direction of attention to internal rather than external information (Ingram, Slater, Atkinson, & Scott, 1990), to selectively encode negative information, and to recall more negative information than controls (Ingram, Scott, & Siegel, 1999). From this body of evidence it is reasoned there exist

latent cognitive schemas which act as causal mechanisms in the development of depression (Ingram, Scott, & Siegel, 1999).

Empirical evidence for the existence of schemas is primarily based on priming research paradigms. For example, Hedlund and Rude (1995) used a self-focusing procedure to show that currently and previously depressed people recalled more negative adjectives and constructed more negative sentences in a scrambled sentence task than those who had not been depressed. Priming paradigms are considered to support the presence of latent causal schemas by demonstrating that currently or previously depressed people show priming effects for negative information content when controls do not. The presence of priming effects suggests that the cognitive deficits, which are a well documented symptom of depression, are not just a symptom expression of the disorder, but are also indicative of a latent causal mechanism (Ingram, Scott, & Siegel, 1999).

The aforementioned research is part of the majority of evidence which supports aetiological cognitive approaches to psychopathology. In order to describe the causal mechanisms an inferential step is often made from the accumulated evidence cited (Ingram, Scott, & Siegel, 1999). A great deal of empirical evidence is focussed on the product of the inferred latent causal mechanisms, but little research is undertaken in order to describe the mechanisms themselves (Wenzel & Rubin, 2005). While evidence of the product of causal mechanisms is important, it is arguably not sufficient to meet the ethical obligations of EBP. Can a schema be understood only in terms of its function and effect on behaviour and mood via thinking process? What is the nature of a schema? Are we able to know schemas ontologically as they exist? How are cognitive processes and schemas mapped onto brain structures, considering that psychology is committed to a naturalist world view? How are mentalistic concepts, which are central to CBT, related to these schemas? While it is arguably impossible to answer these questions empirically, simply acknowledging these problems may engender a greater understanding of this complex area. Further, content from associated disciplines, for example, neurophysiology and philosophy of mind, could be drawn on, via a levels-of-explanation approach to increase our understanding of these latent causal mechanisms and thereby increase our understanding of the pathological processes in depression.

The application of a levels-of-explanation framework allows for the integration of information from different disciplines. Evidence for the aetiological influence of negative

schemas on the development of depression is located primarily within the sub-personal, algorithmic level of brain process. The cognitive processes and content that become dysfunctional in depression are assumed to be psychological processes working via cognitive affective networks, and which function at sub-personal levels of mind. These networks are made up of primitive emotion nodes which are linked both to the mechanisms of emotional physiological response and cognitive-associative networks. When activated by environmental stressors, spreading activation renders negative information within associated networks more accessible, accounting for priming effects and cognitive distortions. The subjective experience of sadness triggers and maintains this self perpetuating cycle (Ingram, Scott, & Siegel, 1999). However, other aetiological factors, occurring at lower sub-personal and personal levels-of-explanation, are also implicated in the development of depression. As well as cognitive processes, microbiological, neurotransmitter functioning and personal level mentalistic aetiological factors are all implicated in the development of depression (Arean & Chatav, 2003). A levels-of-explanation approach could provide a framework within which these disparate types of information can be reconciled and inter level relations explored. It could be argued that this integration is achieved with bio-psycho-social models. However, such models simply acknowledge that there are different areas of aetiological information, or they attempt to link information already at hand, rather than systematise a uniform approach that takes into account the relevant methodological and epistemological issues.

The evidence supporting cognitive contributions to the development of depression has primarily been concerned with unconscious information processing. However, subjectively experienced mental events are central to a cognitive conceptualisation of depression, and cannot be wholly captured within sub-personal levels. Mental events occur at the personal level of explanation and our knowledge of them is different and not known in the same way as with information processing.

It is evident from the assumptions made by cognitive models of depression that information from both personal (mental events) and lower levels-of-explanation (unconscious information processing) are necessary in explaining depressive phenomena. In a levels-of-explanation approach, mental events at the personal level and their causal relationships with behaviour and emotion can be assessed utilising philosophy of mind. Subjectively experienced ‘depressogenic’ mental events can be correlated with the presence of depression, and can be

linked to overall emotional and behavioural patterns present in those who experience such thoughts. These subjective mental events, which are characterised by their qualia in meaningful explanation, can be linked to the underlying unconscious cognitive processes, providing a largely untapped area of investigation. The subjective experience of the thought, "I couldn't even clean the house today, I'm completely useless," could be regarded as the experienced consequent of a perceptual bias toward negative information in the environment. When conceptualised as part of the same phenomena, occurring at different non reducible explanatory levels, a more complete and organised explanation of the phenomena could be achieved. In this way, claims about the causal properties of thoughts can be linked to a physiological substrate, while keeping explanation within the natural world. At the same time, and as noted in the previous chapter, the manifestation of the phenomena at the personal level (the mental event) can be assessed via the rules and knowledge that hold at that level. Personal level explanation involves normative, meaningful explanation as opposed to being mainly descriptive. Prediction by appeal to personal level mentalistic concepts is also more problematic than at sub-personal levels because it relies on predicting behaviour on the basis of the assumed intention of the intelligent agent. The types of explanation relevant to different levels-of-explanation could be applied in order to critique and therefore strengthen theory. The desired result would be a unified understanding of psychopathology that utilises current knowledge within and between different explanatory levels.

The application of a levels-of-explanation framework to the investigation of cognitive models of depression would allow the examination of evidence for cognitive models present at personal and sub-personal levels. As previously stated, mentalistic concepts operating at the personal level are central to CBT models of depression. Assessment of explanatory processes within the personal level allows for critical examination of causal cognitive models within the confines of personal level explanation. Explanatory theorising at the personal level is undertaken in the discipline of philosophy of mind, while aetiological models in clinical psychology often use, but have a poor understanding of, the limits of explanation in terms of mentalistic concepts. By critiquing mentalistic concepts in psychology using the philosophy of mind to establish as close an approximation of the true nature of such mental events as possible, clinical psychology will be strengthened.

Foundational constructs in clinical psychology could be refined by comparing supporting and contrary positions found within philosophy of mind. The philosophies of mind discussed in

chapter three were found to be either generally commensurable with, or incompatible with, concepts in clinical psychology. Those that were commensurable can be used to justify and refine foundational constructs in clinical psychology. Those that were not outline criticisms that clinical psychology must refute. When critiquing cognitive models of depression in this fashion, dualist explanations are ruled out. Eliminativist or strong reductive explanations deny the relevance of mental events in the explanation of behaviour, but are still useful because conceptions of causal mental events can be strengthened by the development of philosophical arguments in their defence. While the eliminativist theory of mind would not necessarily deny the existence of subjective experience, the premise that all mentalistic phenomena can only be described by the laws and language of the lowest explanatory level rules out the kind of explanation appealed to in cognitive behaviourally based clinical psychology. Similarly, radical behaviourist theory argues for the irrelevance of mentalistic concepts, instead appealing only to behaviour as the appropriate unit of analysis. These two theoretical positions, as outlined in chapter three, pose a challenge for mentalistic explanations at the personal level. In order to overcome this direct challenge, it must be shown that explanation by appeal to mental events is possible, and that such explanations provide a benefit, over and above reductive physical explanations. While retaining the importance of explanation at the personal level is essential for causal concepts in clinical psychology in order to construct sound scientific theory, the linking of personal level causally efficacious phenomena to their physical substrates is preferable.

From the perspective of a functionalist theory of mind, mental events are characterised in terms of the cognitive processes at the sub-personal level, rather than by the nature of their content. While the functionalist theory of mind does allow for the existence of personal level explanation as a result of causally efficacious mental events, it does not describe how these mental events are causally efficacious as a result of their content. Therefore, while a functionalist theory of mind would prove useful in justifying the causal efficacy of mental events, the link between mental event and the physiology of the brain, which is at the heart of the mind/brain problem, is not addressed in a substantive manner. Rather, the link is described by appealing to abstract functional properties.

Autonomous mind theories allow for the existence of causal mental events because they maintain the autonomy of personal level explanations. However, while the identity theory holds that the causal laws that govern the physical substrate would also govern the mental event, the

representational theory of mind gives an explanation of how mental events can be causally efficacious by appeal to the content of mental events themselves. In the representational theory of mind, the content of the propositional attitude, plus the vehicle of this content (an isomporphic physiological structure), is conceptualised as similar to the semantics and syntax of a sentence. This conceptualisation allows for the explanation of the cognitive model of depression across explanatory levels. At the personal level, the content of the depressogenic thought can be explained via current knowledge of personal level explanations. For example, experiencing the thought, "He did not seem excited that I passed my test, therefore, it must not be an achievement, and I must be a failure," is considered to have a causal effect on mood and behaviour in CBT theory. The content refers to the subjective experience or qualia of the thoughts and beliefs which cause depression. This aspect of depression can be explained in a meaningful manner at the personal level, though it is not possible at lower levels-of-explanation. The personal level of explanation can then be linked to lower level processes, in order to ground personal explanation in the physiology of the brain. In a representational theory of mind the content of the thought of being a failure is "I'm a failure" and contains the concepts of self and failure. The content of the propositional attitude or belief is 'carried' by the syntax-like vehicle, which possess a physicality that allows it to function at the sub-personal levels. Lower levels-of-explanation look to physiological substrates and unconscious processes at the algorithmic level as described in terms of their processes and physical nature. Therefore, while explanation at the personal level examines and describes content driven, subjectively experienced, mental events, the vehicle of this content functions at, and reconciles personal level explanation with, lower levels. This level of explanation encompasses the majority of the evidence given previously in this chapter for cognitive models of depression. Finally, at the lower levels-of-explanation, the physiology of the cognitive processes evident at the algorithmic level, is explored. The vehicle of the content of the propositional attitude is a likely area for exploring the interrelationships between brain processes and physiology. The representational mind, applied to cognitive behaviourally based concepts of mentalistic causation, allows for the autonomy of mental causation, explains how they are linked to the physicality of the brain, and can account for the importance of the qualia of subjectively experienced mental events. In doing so, the representational theory of mind is commensurable with the evolutionary account of mind as outlined in chapter four. The two are commensurable because the representational theory of mind accounts for the importance that subjectively

experienced visual representations of an increasingly complex world, had in the evolution of the modern mind

This account of how the philosophy of mind, the representational theory of mind in particular, can be applied to psychological concepts through the application of a levels-of-explanation framework, is a hypothetical example which demonstrates the possibility of using this approach to assess and refine the value of cognitive aetiological models within clinical psychology. Further, the example allows for the application of philosophy of mind to concepts of mind and brain within clinical psychology, primarily for the justification of the use of causal mentalistic concepts at the personal level in aetiological models of psychopathology.

Conclusion

Clinical psychologists are ethically bound to adhere to evidence-based-practice. To achieve this, clinicians must ensure that their practice is grounded in up-to-date knowledge of theory and practice in clinical and general psychology. There have been valid criticisms of the understanding of what constitutes evidence-based practice, – primarily that too much emphasis is placed on EST's. This heavy focus on ESTs has resulted in treatment effectiveness/efficacy being emphasised over construct development in clinical psychology. This overemphasis is further exacerbated by the development of clinical therapy being based more on intuition than theory as well as the separation of clinical psychology from wider psychology. In order to strengthen and refine theoretical constructs within clinical psychology, philosophical concepts of mind can be applied. Philosophy of mind is concerned with how mental events are related to the physiology of the brain, and whether or not mental events can be causally related to behaviour and mood. While much theory and practice in clinical psychology is concerned with similar content to the philosophy of mind, the nature and function of mentalistic concepts are neither as well understood nor as well explored in clinical psychology. The application of philosophical concepts of mind to theory in clinical psychology is possible by using a levels-of-explanation framework. It would improve theory construction and allow clinical psychologists to meet their obligation to carry out EBP.

Chapter Six

Psychological Case Formulation

What is case formulation?

Psychological case formulation is the process of hypothesising and identifying the causal factors that contribute to an individual's current difficulties. It is central to the discipline of clinical psychology (Persons & Tompkins, 2007). Case formulation involves the gathering and reviewing all relevant clinical information, comparing this information with knowledge from the relevant research literature and finally working it into a coherent story as to why a particular person has particular problems at a given time. The information gathered for the purpose of formulation usually includes particulars about the client which have predisposed, precipitated, maintained, and protected against the development of the client's current difficulties. Without being formulated as a case, this information would merely form a list of disparate facts with little utility (Persons & Tompkins, 2007). Case formulation is concerned with establishing the presence of causal mechanisms, and therefore informs treatment.

Case formulation is a systematic process which rests upon the gathering of data pertaining to a person's current life situation. The relevant information collected during assessment, also referred to as data, should be gathered from multiple sources in a systematic manner in order to increase the reliability of the case formulation (Vertue & Haig, 2008). The main source of information is the unstructured clinical interview in which the clinician guides and records a discussion about the client's current difficulties, presence of symptoms, relevant background information, competencies and weaknesses, and other pertinent information. Information is also gathered from standardised psychometric instruments including intelligence tests, personality inventories, and objective measurements of symptomatology.

The formulating clinician integrates the information gathered during the assessment phase and attempts to identify the presence of pathology from which to infer underlying causal mechanisms. For example, a client may report significant depressive symptomatology, and also score highly on the Beck Depression Inventory (A. Beck, Steer, & Brown, 1996). This demonstrates a pattern whereby the client's personal explanation of their symptoms is consistent with their score on an objective measure. Both verbal report and standardised measure

information, which form the symptom pattern, are informed by an accumulated body of literature. Therefore, the case formulation is the interface between the literature and the application of that knowledge idiographically in order to gain an understanding of the individual. An initial case formulation will indicate appropriate treatment approaches, and allow for the treatment approach to be tailored to the individual client. During the treatment phase, causal hypotheses that were made during the case formulation should be revised in light of any new evidence (Eells, 2007). In this respect, case formulation is an organic process, interwoven throughout the entire clinical process.

The distinction between reasoning and formulation

An important distinction needs to be made before discussing the application of philosophically informed concepts of mind to the case formulation process – the distinction between clinical reasoning and formulation. Clinical reasoning can be understood as the reasoning processes involved in describing health problems, whereas case formulation can be understood as the integration of the description of health problems with an explanation of those problems in terms of causal mechanisms (Vertue & Haig, 2008). To clarify this point, consider the question "What is depression?" in light of both the concepts of clinical reasoning and case formulation. Firstly, consider clinical reasoning as the process of descriptive reasoning whereby a clinician arrives at a diagnosis. Given that current DSM-IV-TR diagnoses are qualitatively differentiated from normal functioning, and are therefore conceptualised as symptom clusters with no implied aetiological markers, the reasoning process involves matching the client's presentation with a symptom list. Therefore, the truth value of the description is high; the symptoms described in the diagnostic criteria are either present or absent. If the client's symptomatology meets the diagnostic criteria, then by definition, they have the disorder. For example, in the diagnosis of Major Depressive Disorder, if the client exhibits the cognitive symptoms of feeling worthless and suicidal ideation (plus other criteria sufficient to warrant diagnosis), then those criteria constitute depression. Contrast this with the case formulation process. The question "What is depression?" in the context of case formulation refers to more than diagnostic criteria; it refers to underlying causes. Whereas the manifestation of depression is considered in the clinical reasoning process, the cause and its relationship to behavioural, cognitive, and physiological manifestations are considered in case formulation. Therefore, case

formulation is fundamental to clinical psychology because it includes causal hypotheses for aetiologically neutral mental disorder diagnoses, and therefore, explanation of psychological dysfunctional. This allows for a more complete understanding of psychopathology and identifies areas for therapeutic intervention.

Vertue and Haig (2008) elaborate on the distinction between clinical reasoning and clinical formulation by contrasting diagnosis in clinical psychology with diagnosis in medicine. In medicine, like clinical psychology, a diagnosis is warranted when a particular pattern of symptoms is present. However, in medicine, assumptions about causal mechanisms are linked strongly to diagnoses, and are relatively certain. In clinical psychology there is 'pervasive uncertainty about causal mechanisms', which are complex and multifaceted (Vertue & Haig, 2008, p. 7). In this way, the case formulation process allows for hypothesising about causal mechanisms, and therefore, unlike diagnosis, explains the client's current problems. For this reason, case formulation is more important than reasoning to diagnosis for the purposes of explaining phenomena and informing treatment in clinical psychology. Given the complexity and uncertainty of causal mechanisms in clinical psychology, the value of the hypothesised causal mechanisms underlying pathological presentations will depend on the quality of the process or methods by which the clinician carries out the case formulation. Certain biases have been identified as hindering the case formulation process and several systematic approaches have been proposed in order to overcome these biases.

Conceptual issues and biases in case formulation and clinical reasoning

Errors and biases in case formulation and clinical reasoning have been well documented. Due to the varied and different case formulation approaches, the large breadth of information handled, the constraints on time and human fallibility, a case formulation can appear to be at times haphazard, unsystematic, and biased by errors of reasoning (Dumont, 1993; Dumont & Lecomte, 1987; Eells, 2007; MacDonald, 1996; Nezu, Nezu, Peacock, & Girdwood, 2004). In this respect, the process of case formulation is similar to the pursuit for knowledge. Assumptions based on personal beliefs or prior experience are not the same as knowledge claims based on systematic and method based scientific inquiry. Similar to scientific inquiry, the case formulation process should be governed by the epistemological principles central to gaining knowledge of natural phenomena. This is done through the application of appropriate methods

when undertaking scientific inquiry. Case formulation is no different in this respect. Due to the importance of producing reliable formulations that are as close a representation of reality as possible, biases of the case formulation process and reasoning must be addressed through the application of appropriate methods.

Some of the relevant issues to consider when conducting a case formulation are now outlined. Firstly, there is a tension between delivering a case formulation that is simple enough to be useful but that can also convey the complexity common to human experience (Eells, 2007). Theory is improved when achieving parsimony; in other words, the simpler the explanation for the range of phenomena, the greater the worth of the explanation. Another inherent tension within the formulation process that is mirrored in the wider search for knowledge is between observation and inference (Eells, 2007). Although case formulation should be based on observable data, causal mechanisms are often latent and need to be inferred. Therefore, although clinicians should not limit themselves to description, they should invoke latent causal mechanisms with a caution that is based on their epistemic limitations in explaining pathological presentations. Lastly, there is a tension when balancing information on the individual with nomothetic information from the research literature (Eells, 2007). By including too much idiographic theorising, the case formulation may not be suitably grounded in the literature. On the other hand, too much nomothetic theorising and the treatment approach will fail to address the client's particular presentation. Considering these common pitfalls, the process of case formulation involves finding a balance between competing obligations. The process of case formulation should be undertaken in a systematic and thorough manner to overcome these difficulties.

The process of clinical formulation needs to be monitored, as does the way in which the clinician reasons or thinks about a particular case. As noted above, human reasoning is prone to errors. Therefore, clinicians need to be aware of and avoid the reasoning biases common to the case formulation process. There are well documented errors in clinician reasoning and judgement in case formulation (Nezu, Nezu, Peacock, & Girdwood, 2004). Common reasoning biases include relying too much on easily available evidence, focussing on the information first at hand, not considering base rates especially when conditions are rare, being over eager to diagnose the 'en vogue' disorder, adjusting information to confirm an initial diagnosis, not giving enough

weight to situational factors compared with intrapersonal factors, jumping to conclusions, and inferring a causal relationship merely from temporal sequence. These well documented biases highlight the increasing need for a systematic approach to case formulation (Nezu, Nezu, Peacock, & Girdwood, 2004; Vertue & Haig, 2008).

Different approaches to case formulation

Although it is possible to describe a generic case formulation process, there is no standard approach to case formulation. A case formulation is often influenced by the theoretical approach favoured by the clinician. Psychodynamic case formulation focuses on unconscious processes, whereas behavioural case formulation focuses on observable, objectively measured patterns of behaviour. Cognitive behavioural formulation appeals both to behavioural manifestations and subjective experience (Eells, 2007). Each of these approaches focuses on the proposed causal mechanisms favoured by the particular theoretical approach. Just as each formulating clinician's theoretical approach to practice influences the case formulation process, so does their beliefs on how to conceptualise and classify psychopathology. Some of the overarching issues that influence case formulation are whether psychopathology is viewed as being defined by its aetiology, or description of symptom clusters; whether psychopathological states are considered qualitatively or quantitatively different from non-disordered states; and, how one regards abnormality (Eells, 2007).

The cognitive behavioural case formulation approach

As mentioned previously in this chapter, there are different approaches to case formulation, many of which are based on different theoretical approaches to psychotherapy. The cognitive behavioural approach to case formulation is prominent because a large body of evidence supports its efficacy. The focus and direction of the cognitive behavioural formulation is influenced by cognitive behavioural theory. In this respect, the client's problems are understood in terms of a cognitive conceptualisation (J. Beck, 1995). Within the cognitive conceptualisation of case formulation, particular importance is given to the thoughts and beliefs associated with the client's identified problems. While the cognitive conceptualisation is primarily derived from the work of Aaron Beck (see J. Beck, 1995), other important concepts from cognitive and behavioural theorists are included in cognitive-behavioural case

formulations, for example, Seligman's theory of learned helplessness (Seligman, 1975). Despite the range of cognitive theories, the basic premises stay the same – namely that subjectively experienced dysfunctional cognitions and cognitive processes give rise to psychopathology.

The use and limits of mental events in explanation of phenomena is of central concern to this thesis. To illustrate the way the cognitive behavioural case formulation relies on the use of mentalistic concepts, an example from Persons and Tompkins (2007) will be used. This example includes the hypothetical case study of 'John'. Persons and Tompkins (2007) include 7 steps in their model of a case formulation, including: 1) obtaining a comprehensive problem list; 2) assigning a five axis DSM diagnosis; 3) selecting an anchoring diagnosis; 4) selecting a nomothetic formulation of the anchoring diagnosis to use as a template for the hypothesised psychological mechanisms that are part of the formulation; (5) individualising the template so that the formulation accounts for the details of the case at hand, for all the problems on the problem list and their relationships; (6) proposing hypotheses about the origins of the psychological mechanisms; and, (7) describing precipitants of the current episode of illness or symptom exacerbation. The problem list will include any problems identified, usually during the interview, and includes not only possible psychopathology but any emotional, personal, environmental, social, financial, and legal problems. Problems can also be identified through structured measures. In their case example, Parsons and Tompkins (2007) identify a number of problems that are affecting John's life (step 1). These include suicidal ideation, hepatitis C, poor medical adherence, depressive symptoms, social anxiety and isolation, alcohol abuse, and unassertive behaviour. John is then assigned the following DSM diagnoses (step 2):

Axis I	Social anxiety disorder, major depressive disorder, dysthymic disorder, alcohol abuse
Axis II	Avoidant personality disorder
Axis III	Hepatitis C
Axis IV	Inadequate social support, financial difficulties
Axis V	45 (global assessment of functioning (0-100))

The anchoring diagnosis is considered to be social anxiety disorder, of a generalised type, indicating that the clinician considers John's anxiety to be of primary importance and causally

related to his other problems (step 3). In step four, the clinician appeals to the research literature in order to gather nomothetic information. This literature indicates that social anxiety results from the interplay of an individual's biological and psychological vulnerabilities triggered by social, familial, cultural, and biological stressors. Theory on the cognitive causes of social anxiety, as evidenced in the accumulated literature, leads the clinician to identify similar occurrences in John's presentation. When the nomothetic formulation has been individualised, hypotheses can be proposed about causal mechanisms. The assignment of causal mechanisms is the central component of the formulation process because the citing of causal mechanisms provides an explanation of the client's problems (Vertue & Haig, 2007), and determines the approach to treatment. The effect of the assigned treatment is therefore dependent on the validity of the hypotheses about the causal mechanism.

In their case example, Persons and Tompkins (2007) identify the following as the causal cognitive aspects of John's problems (step 5): cognitive schemas, for example, "I'm a loser, whiner, geek, wimp, helpless," "others are critical and rejecting," "the world is bleak," and "the future is uncontrollable and hopeless"; conditional assumptions, for example, "If I ask for what I want, people will put me down"; and automatic thoughts that lead to unassertive behaviour and suicidal urges. Therefore, it is argued that John's schemas, conditional assumptions, and automatic thoughts cause his social anxiety disorder. The next step (step 6) in the cognitive behavioural case formulation process is to hypothesise about the origins of the mechanisms. In their case formulation about John, Persons and Tompkins (2007) cite the following origins of the aforementioned causal mechanisms: a biological vulnerability to anxiety from his mother; a developmental/environmental vulnerability regarding his lack of examples of normal social interaction; and, an often absent and overly critical father.

In this case example, specific cognitive aetiological factors have been inferred and their origins hypothesised. However, given the previously stated limits on personal level explanation, certain questions are raised about the utility and application of such concepts. Obviously John displayed, at some stage of the assessment, thoughts congruent with the negative cognitive triad. He also described a childhood, which could intuitively lead to the types of presenting problems he now displays. However, is the physiology and ontological nature of a schema, or causal thought, known to the extent that we would cite them as important aetiological factors? This is

not to question whether schemas, or causal thoughts exist; rather, it is to ask about the extent to which we know them, and how our limited understanding of them affects their utility in the case formulation process. Specifically, when John's causal mechanisms are inferred, with what degree of confidence can we say that: 1) schemas exist in the way conceptualised by CBT theory; 2) John has developed certain schemas about his worthlessness, the hopelessness of the future, and the guaranteed derision from others; 3) these schemas give rise to automatic thoughts, which have a causal effect on his day to day mood and behaviour; and, 4) these schema developed as a direct result of his mother's social isolation and his father's critical nature and continued absence? Or more fundamentally, do we even consider these questions when formulating the case? It has been argued in this thesis that within clinical psychology these important questions are not asked, and furthermore, that little effort is expended in their answering, despite the available means.

The discussion so far has been centred on cognitive behavioural case formulation and the importance of the case formulation in uncovering causal mechanisms. It has been claimed that the understanding of causal mechanisms in psychological explanation is more complex and difficult to know than in medicine. It has also been argued, in the previous chapter, that cognitive behavioural case formulations rely on concepts of causal mechanisms which have been inferred from their effects, for example, the existence of schemas is assumed from the presence of negative priming phenomena. Because of the complexity of, and lack of knowledge about, the nature of latent causal mechanisms in clinical psychology, reasonable doubt is raised about their uncritical use in case formulation. However, the intention is not to argue against the use of cognitive concepts in the formulation of aetiological causes of psychopathology. Indeed, in the previous two chapters, the possible causal efficacy of mental events has been argued for. Therefore, it is suggested that clinicians should be aware of, and influenced by, the particular limits of using mentalistic concepts in psychological case formulation.

The position of cognitive causality

It was argued in previous chapters that mentalistic concepts, such as thoughts, beliefs and propositional attitudes, are often referred to in theories in clinical psychology, but that they are not well researched or understood. Although there is evidence in support of the effectiveness of CBT (J. Beck, 1995; Butler, Chapman, Forman, & Beck, 2006; Chambless & Ollendick, 2001;

Dobson, 1988; Roth & Fonagy, 2005), most of this evidence does not address the proposed latent mechanisms (Wenzel & Rubin, 2005). Possible reasons for the lack of understanding of cognitive causal mechanism were also outlined in the previous chapter. They included the over emphasis on treatment effectiveness research, the separation of applied clinical theory from basic science, treatments being founded on clinician intuition rather than theory, and the fragmented nature of psychological disciplines. This lack of knowledge of foundational constructs may impede a clinician's ability to meet the obligation of undertaking evidence-based practice. It was also argued in the previous chapter, that due to the lack of understanding of foundational concepts in CBT, treatment effects may not be due to the effects of the proposed causal mechanisms but to other variables, such as the clinician-client relationship. The lack of understanding of cognitive latent causal mechanisms has a direct implication for case formulation and clinical reasoning within clinical psychology. One of the most important aspects of the case formulation is the explanation of clients' problems by appealing to latent causal mechanisms. Therefore, the reliability of the case formulation and subsequent treatment relies on the validity of the construct about the causal mechanism cited. Within the cognitive behavioural case formulation, predominant causal mechanisms are schemas and causally efficacious thoughts and beliefs.

It has been argued that explanation through appeal to cognitive causal mechanisms has its limitations. It has also been argued in chapter four that subjectively experienced, meaningful, and causally efficacious, mental events are important in the explanation of pathological presentations. Indeed, the limits of purely physical explanations, including the failure to capture the qualia of mental events, highlights the importance of personal level explanations. While the autonomy of personal level explanations is retained, as explained in chapter four, prediction at this level is less certain and more prone to error than physically based prediction because it is based on intentionality.

Given that appeal to mentalistic concepts is necessary in clinical case formulation, how can the handling of cognitive concepts be refined in order to make more reliable causal claims? It is proposed that this can be done two ways. Firstly, it is important to control the significant uncertainty and complexity of explanation in case formulation. The methodological requirements of case formulation can be met using an appropriate systematised case formulation process, such

as the abductive account of case formulation (Vertue & Haig, 2008). Secondly, refinement can be approved by gaining and fostering a greater understanding of mentalistic concepts, their properties and function, their causal efficacy, and the limits of using them as the basis of explanation in case formulation. As previously stated, there are reasonable grounds to suggest that mental events can be causally efficacious, but the nature of mentalistic events needs to be understood in greater depth when using them in the kind of personal level explanation, which occurs in clinical psychology. The foundations for meeting this proposition were laid in the previous two chapters. There it was suggested that the understanding of mind and personal level explanation via mental events is improved when the relevant subject content from philosophy of mind is considered. Although less empirically known, metaphysical theorising can be grounded in empirical knowledge (Bermudez, 2005) and allow for a greater understanding of personal level phenomena. Further, the commitment to keep explanation within the natural world is satisfied by the application of the conceptual levels-of-explanation framework. This occurs because such a framework allows for inter-level relationships to be explored, and therefore, allows links to be made between the observed phenomena such as depressogenic thoughts, and their proposed causes, such as schemas via the cognitive processes that carry them. It also provides a more complete conceptualisation of personal level phenomena often cited in cognitive causal models, and it allows for an explanation of the phenomena as opposed to simply describing them. In this way, the understanding of mental events as proposed by cognitive theory can be improved, as can the application of such ideas in the process of case formulation. As argued in chapter four, clinical psychology deals with a range of information, which varies in epistemological worth. The confidence with which we can assume a causal relationship between a mechanism and its consequents depends on a number of methodological issues. For example, a possible causal relationship between two variables established by conducting a double blind randomised controlled trial is more certain than the claim made on the basis of a correlational research design. Similarly, causal mechanisms in medicine are often better known than in clinical psychology (Vertue & Haig, 2008). Clinical psychology deals with a myriad of causal mechanisms, which are known with differing degrees of epistemological confidence. Therefore, in the formulation process, the explanatory worth of differing causal mechanisms, as established in general research settings, needs to be taken into account when the mechanism is applied idiographically. The epistemological confidence granted to causal mechanisms could be included

in the case formulation process if the clinician assigned an 'explanatory strength' to each causal mechanism, either formally or informally. Targeting more epistemologically sound causal mechanisms is likely to improve treatment effects.

The idea of applying explanatory strength to causal mechanisms has been proposed by Haynes and Williams (2001), using their Functional Analytic Clinical Case Model method of formulation. In the Functional Analytic Clinical Case Model, each causal mechanism is assigned a different strength in order to guide treatment. As stated by Haynes and Williams (2001), the *relative magnitude of effect* of the mechanism is determined by a number of clinician-estimated values including: 1) the estimated importance of the behaviour problems and their sequelae; 2) the causal relations among behaviour problems; 3) the estimated strength of relations between causal variables and behavioural problems, and between causal variables; 4) the estimated modifiability of the causal variables; 5) the presence of multiple causal paths; and, 6) the existence of moderator variables. These factors are all taken into account to assign a relative magnitude of effect to each causal mechanism. An assessment of the causal strength of a proposed mechanism based on the epistemological understanding, and explanatory limitations of that mechanism would fit naturally within this relative-magnitude-of-effect approach. In this way, an allowance is made for the limitations of personal level explanations, outlined in chapters three and four, to be factored into the case formulation process. For example, consider again the case of John. The identified avoidance behaviours displayed by John arguably have a stronger causal link to anxiety than do the negative automatic thoughts he displayed. This is because observable behaviours are easier to conceptualise, to measure, and to know in a comprehensive manner than are negative automatic thoughts. Indeed, treatment for social anxiety normally includes exposure, and the treatment literature has struggled to demonstrate any additional benefit of adding a cognitive component to treatment (Roth & Fonagy, 2005). Therefore, the behavioural cause in this case can be seen as having a stronger link to the pathological presentation than the cognitive component. Furthermore, the origins of the causal mechanism are important in a case formulation. In John's case, information about the origins of the cognitive causal mechanism was obtained through a narrative of his early life experiences, including his family's immigration, his mother's failure to adapt to life in a foreign country, to learn English and to socialise, John's subsequent isolation, and his father's long absence and overly critical nature. These experiences were assumed to lead to the development of cognitive schemas, which

in turn caused negative automatic thoughts: Questions such as how? By what process? And what is the epistemic value of the links made between experiences, development of schema, and the pathological cognitive profile? are important to answer, in order to get an idea of the explanatory worth of these commonly used concepts in case formulation.

Because of the limits of giving personal level explanations, it is proposed that the explanatory value of negative automatic thoughts is possibly less than avoidance behaviour due to the extent to which we know or understand mental events. This is not to say that mental events are of no explanatory value. Rather, like all causal explanations in case formulation, they have limitations. It is important that clinicians understand these limitations. The benefit of applying relative-magnitude-of-effect measures to causal mental events is an increased understanding of psychological constructs, and the improved hypothesising about, and, identification of, causal mechanisms. If case formulation skills are improved in this way then treatment is likely to be more successful because the most fruitful avenues of inquiry would be adopted first. However, for this to be done, a generic case formulation model, with no vested theoretical interest, should be employed. As stated previously, the worth of the case formulation depends on the validity of the concepts utilised within it, as well as the methods used within the case formulation process.

Conclusion

Case formulation is of central importance to the practice of clinical psychology. It is the process whereby a clinician not only describes a client's current difficulties, but also explains them through appeal to latent causal mechanisms. The processes of formulation and clinical reasoning are prone to bias, and therefore, attention needs to be paid to the way that information is collected and the way the formulation process is carried out, as well as the inferences that are made about underlying causal mechanisms. The focus of this thesis has been on the nature of mental events and personal level explanations that feature heavily in cognitive conceptualisations of psychopathology. Due to the importance of cognitive concepts in clinical psychology, cognitive causal mechanisms are often cited in case formulation and clinical reasoning. Therefore, the problems inherent in the use of mentalistic concepts in clinical psychology theory are considered to apply also to case formulation. It has been shown that although there is a place for personal explanation in terms of causally efficacious mental events, such explanations have differential worth, which should be taken into account when formulating cases. Employing a

relative-magnitude-of-effect strategy to causal mechanisms based on their epistemological value could help address this problem.

Conclusion

The theory and practice of cognitive behaviourally based clinical psychology relies on personal level explanation by appeal to the causal efficacy of mental events. This reliance is highlighted in the foundational claims of cognitive behavioural therapy: these include the claims that the way one interprets the world through subjective experience effects the way one feels and behaves; that these causal mental events, such as thoughts and beliefs can be objectively known and measured; and that they can be challenged and altered during the course of therapy, therefore improving mood and behaviour. The particular claims that CBT makes in relation to mental events are uncritically adhered to within clinical psychology, despite the existence of several convincing arguments that deny the causal efficacy of mental events. However, while mental events, as they feature in CBT, are not well understood, it is not suggested here that personal level explanation be eliminated from clinical psychology. On the contrary, this thesis has argued for their importance in the explanation of pathological behavioural and emotion states. Instead, it is contended that the foundational cognitive constructs which feature in cognitive behaviourally based clinical psychology need to be better understood. While there is extensive research on the effects of proposed cognitive latent causal mechanisms on cognitive processes like memory and attention, an ontological understanding of the nature of these mechanisms is almost nonexistent. Although the idea that thoughts and schemas exist is intuitively acceptable, this does not amount to acceptable scientific knowledge. When directly challenged, our understanding of mental events as found in cognitive behaviourally based clinical psychology start to appear rather flimsy. Consider the following question: what is the nature of a thought? Where does it come from? How does it exist? And what are its relationship with other aspects of human functioning like emotion and behaviour? Furthermore; what is a schema? What is the nature of its physicality? And how does it cause intermediate and negative automatic thoughts? While relatively few questions of this sort have been posed here, they are very difficult to answer based on the literature cited as ‘evidence’ for cognitive behavioural conceptualisations of psychopathology. This draws into question those foundation concepts found in CBT. However, while it is concluded that certain foundation constructs contained in cognitive behaviourally based clinical psychology are not well understood, this is not to suggest that they cannot be known in a more systematic and complete manner. Indeed, one only need look to philosophy of

mind to find rigorous debate that addresses the very questions that clinical psychology fails to ask, let alone attempts to answer.

In order to attempt refining of concepts in cognitive behaviourally based clinical psychology using theories of mind found in the discipline of philosophy of mind, several issues needed to be address and clarifications made. Firstly, because cognitive behaviourally based clinical psychology invokes explanations at the personal level via appeal to causally efficacious mental events, while at the same time adhering to a scientific/naturalistic world view, the mind/brain problem is of direct relevance. The mind/brain problem is concerned with trying to link the mind to the brain. We all experience the world subjectively, but knowledge of the physical brain is objective. Given that all scientific explanations of natural phenomena must appeal to natural causes, what we know as the mind must come from the brain. Attempting to understand how they are linked is the referred to as the mind/brain problem. The mind/brain problem is of direct concern to cognitive behaviourally based clinical psychology because CBT, in its causal models, appeals directly to subjectively experienced mental events. Therefore, cognitive behaviourally based clinical psychology needs to be able to explain how these subjective experiences are liked to the processes and physicality of the brain.

The tension between objectively and subjectively knowing the mind/brain is also found in scientific inquiry as a whole. There is a tension between empirical investigation, which attempts to gain knowledge by measurement and observation, and theoretical inquiry, which attempts to theorise about the phenomena that cannot be directly observed and measured. While empirical inquiry has been favoured in psychology, theoretical pursuits are arguably equally important. It is, in part, because of the lack of theoretical inquiry that the nature of mental events are not well understood in clinical psychology. Because the mind is not directly observable, theoretical, a priori, and philosophical inquiry can expand knowledge of the mind where empirical investigation cannot.

Another issue which needed clarification before suggestions were made on how to apply philosophical theories of mind to cognitive behaviourally based clinical psychology was how, in light of the development and history of CBT, mental events are conceptualised in clinical psychology. Cognitive behavioural therapy was developed in a clinical setting and was based on clinician intuition rather than on theory. This is one of the reasons why mentalistic concepts in CBT are not well understood, because it led to an emphasis being placed on treatment

effectiveness rather than the understanding of the nature of mental events. From an examination of CBT, it is established: that mental events are of central importance given the foundational claims of CBT listed at the beginning of this conclusion; that the way one interprets the world through subjective experience effects the way one feels and behaves; that these thoughts are measureable, and can be challenged; and that in doing so, mood and behaviour can be changed. In other words, subjectively experienced mental events can be causally efficacious.

However, because the nature of mental events as espoused in cognitive behaviourally based clinical psychology are not well understood, it is not clear on what grounds they are causally efficacious. This is not to say that mental events cannot be causally efficacious. In order to establish the possibility of causally efficacious mental events, the main theories of mind were investigated to ascertain whether the conceptualisation of causal mental events in CBT can be defended metaphysically, given this cannot be done through empirical investigation. An investigation into the philosophy of mind established that it is possible to defend the causal nature of mental events. While Cartesian dualist, eliminativist, and radical behaviourist theories of mind deny the causal efficacy of mental events, autonomous mind theories of mind allow for the retention of personal level, meaningful, causal explanations. The representational theory of mind in particular, was found to be commensurable with the conceptualisation of mental events in CBT. They are commensurable because the representational theory of mind considers mental events to be causally efficacious due to the content of the mental event. Furthermore, the representational theory of mind gives an account of how causality is possible by appealing to the physicality and processes of the brain. It does so while retaining the importance of the qualia of mental events, which is consistent with the proposed evolution of the mind.

In order to integrate the metaphysical concepts found in philosophy of mind with concepts found in the physical based discipline of clinical psychology, it was suggested that a levels-of-explanation framework be adopted in which the mind/brain is conceptualised as existing across levels from the micro physicality of the brain, up to personal level explanation, which includes higher cognitive phenomena such as thoughts and beliefs. In doing so it is possible both to explain how mental events can be causally related to both behaviour and emotion, and also to ground such explanation in the physicality of the brain. The adoption of a levels-of-explanation approach also allows for the integration of the wide range of different types of information that is handled in clinical psychology.

It is a natural progression from establishing the need and the means for refining mentalistic concepts in cognitive behaviourally based clinical psychology to suggest ways in which this refinement of theory can be applied to the practice clinical psychology. Firstly, the concept of evidence-based practice was considered. Clinicians are ethically bound to ground their practice on the available research literature. Criticisms have been made of the way this ethical obligation is currently carried out. Principally, an overemphasis on ESTs has led to the primacy of proving treatments as effective and efficacious at the expense of developing foundational constructs. While it is worthwhile to establish the effectiveness and efficacy of therapeutic approaches, establishing the nature of the foundational concepts of those therapies, such as mental events, is of equal importance, but is not being achieved. Therefore, the improvement of foundational constructs in cognitive behaviourally based clinical psychology can be regarded as an ethical obligation of clinical psychologists who strive to attain an evidence-based practice.

Lastly, psychological case formulation is the area of clinical psychology where theory and foundational constructs are applied directly to individual clients. Considering that case formulation is directly concerned with explaining pathological presentations through appeal to latent causal mechanisms, the weaknesses of foundational concepts used in case formulation have a direct implication for clinical practice, and therefore, for clients. If it is unclear what the nature of a mental event is, let alone how it is possible for a mental event to be causally efficacious, then how can clinicians claim in their formulations that certain mental events are causing certain pathological states? However, while there are limits to personal level explanation via causally efficacious mental events, it has been shown that such explanations are justifiable. The caveat to their use, however, is that explanation at the personal level, through appeal to causal mental events, should include the consideration of the limits of undertaking such explanation. To this end, it is possible to apply a relative magnitude of effect judgement to proposed causal mechanisms that reflects the inherent epistemic worth of that construct. In this way, case formulation can be improved because causal mechanisms can be targeted based on the extent to which they are scientifically understood.

At the beginning of this thesis the mind/body problem was posed. This problem was then demonstrated to be problematic for clinical psychology because of the way it conceptualises foundational constructs. The solution to this problem was considered to follow a logical

progression. Firstly, the foundational constructs of cognitive behaviourally based clinical psychology were explored. Then philosophical theories of mind that may help to refine and improve those foundational constructs were explored, and a way to apply them to theory in clinical psychology was suggested. Next, this application was modelled within the context of the importance of theory development in clinical psychology, and lastly, it was suggested how the refined theory could be utilised within the day-to-day practice of the clinical psychologist.

The understanding of mind is a difficult task, but a task to which clinical psychology is committed. The importance of an individual's subjective experience of the world cannot be ignored when attempting to explain psychopathological phenomena. However, clinical psychology also has a commitment to scientific inquiry when establishing knowledge claims. With regard to knowing the mind, these two commitments cause a number of specific and perplexing problems. Despite their difficulty, it is not impossible to gain a greater understanding of the foundational concepts on which cognitive behaviourally based clinical psychology rely. To achieve this, metaphysical theorising needs to be undertaken in order to improve important foundational constructs in clinical psychology, where empirical investigation cannot. In doing so, clinicians may find themselves better able to appreciate the 'countryside' of the mind rather than simply travelling with confidence along the known path of technique.

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