

**Trinity College
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Level 9 M.Phil in Psychoanalytic Studies

Module

Mind-Body Question in Psychoanalysis

Title

Discuss how psychoanalytic theory maps on to the neuroscience of memory, and how this may help to inform our understanding of mind from a psychoanalytic perspective

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Introduction

The discourse between psychoanalysis and neuroscience is as old as the two disciplines themselves. This exploration had already been initiated by Sigmund Freud. Kandel (1999) advanced the topic further following his declaration that psychoanalysis is by far the most intellectually fulfilling and articulate perceptions of the mind. Further, Kandel viewed psychoanalysis as being useful in terms of assisting neurobiologists to plan their work. Cieri and Esposito (2018) have suggested that psychoanalysis relies on research methodology of an association of the various components of the mind and an analysis of the same, to offer expressive clarification of the psychic phenomena. Like psychoanalysis, cognitive neuroscience is also concerned with the study of the human mind. It does this by identifying functional units associated with the various aspects of the psychic apparatus and in this way, gain a deeper insight into the structure of the mind. The focus of this essay is to situate the psychoanalytic-neuroscience discourse and to explain how this relationship in informing our understanding of mind form a psychoanalytic perspective.

Important aspects in the Psychoanalysis-neuroscience relationship

Psychoanalysis refers to psychological theories and therapeutic approaches rooted in the theories and works of Sigmund Freud. Psychoanalysis hinges on the underlying beliefs and assumptions that all individuals possess unconscious desires, thoughts and memories (Paris, 2017). Psychoanalysis suggests that the unconscious drives as experienced by an individual impact their behaviour. Moreover, such psychological and emotional problems like anxiety and depressions are usually due to conflict between the unconscious and conscious mind. To this end, psychoanalysis endeavours to create conscious awareness of any troubling unconscious forces being experienced by an individual. Thanks to insights that a client obtains during analysis, they are better placed to improve how they relate with others.

Moreover, such insights allow the client to interrupt self-destructive or self-defeating patterns that might be in the process of getting formed (Shedler, 2010).

Neuroscience is an interdisciplinary field of science that is concerned with the study of the structure and development of the nervous system. Neuroscience also entails a study of psychiatric, neurodevelopmental, as well as neurological disorders. Examples of ailments that are of significant interest to neuroscientists include Alzheimer's disease and Parkinson's disease. Experimental studies involving patients diagnosed with such diseases aid in the development of novel medications. According to Diamond and Amso (2008), neuroscience research has greatly influenced our understanding of cognitive development and with it, the underlying mechanisms on human behaviour. Through increased understanding of cognitive development, it has become increasingly clear that experience and behaviour play a critical role in shaping the human brain.

Neuroscience encompasses a diverse range of interrelated disciplines. Each of these disciplines entails its individual special techniques which in turn finds use in the study of various components of the human nervous systems (for example, neurophysiology, clinical neurology, and neuroanatomy, among others). According to Solms and Kaplanm-Solms (2000), the discipline of neuropsychology acts as the point of contact between neuroscience and psychoanalysis. Neuropsychology seeks to study the nervous systems from a functional organisation perspective, courtesy of psychological techniques. The goal is to shed more light on the how the human mental functions are represented from a neurological context. Once the basic components of the functional system have been identified, it becomes easier to connect neurological and psychological science. Consequently, the analyst gets to move effortlessly between psychoanalytical concepts and the neurophysical correlates associated with them. The earliest correlations between these two disciplines was evident in 1953, through the works of Aserinsky and Kleitman in the rapid eye movement (REM). In this case, the REM

state was interpreted as an indicator of the subjective dream state. Based on animal studies, it emerged that the pons, a small part of the brain, was responsible for the production of REM.

Greenman (2007) identifies a possible point of connection between psychoanalysis and neuroscience by noting that both focus on unconscious mechanisms. Neuroscience is based on the premise that the processing of emotions occurs independent of conscious awareness. This happens in a biological unconsciousness in line with the constraints and rules of neuropsychology and neural circuitry, as opposed to Freud's dynamic unconscious theory. Neuroscience, just like psychoanalysis, identifies conscious feelings as depicting underlying unconscious thoughts. Behavioural, physiological and technological findings in neuroscience as evidenced by MRI and PET scans, among others experiments, are clear symbolism of brain circuitry. Pally (2000) reports that neuroscience findings are a clear testament that attachment theory as evidence by the mother-infant feedback loop, not only depicts nonverbal emotional communication, but also that such attachment helps to regulate body and mind between individuals.

Neuroscience is a natural science seeing as it relies on empirical evidence from experiments and observations. In contrast, psychoanalysis is mainly focused on a subjective analysis of human experience. The goal is to interrogate the relationship between a subject and something of interest to them.

Viewing the mind from a psychoanalytic perspective

Sigmund Freud first tried to establish a connection between psychoanalysis and neuroscience in his 1895 paper titled, "Project for a Scientific Psychology". This publication has since elicited a heated debate on whether there is a connection between psychoanalysis and neuroscience (Peled, 2008; Northoff, 2011). However, the recent work seems to offer evidence in support of a link between psychoanalysis and neuroscience (Kandel 1998; Solms & Turnbull, 2002). This was the genesis of a new technique of psychological investigation.

This technique hinges on free association and interpretation. By setting the framework for the psychoanalysis disciplines, Freud was in effect teaching his students to find new ways of listening to their patients in a completely different manner from what was being practiced.

The creative and intelligent approach to psychoanalysis that Freud demanded of his students would in due course, offer an ideal platform for scientific inquiry. However, Northoff (2012) is of the view that such a methodology no longer retains the investigative power it once possessed. This is evidenced by the fact that more than a century following its instructions, not much can be gained by a psychoanalyst by just carefully listening to a patient.

Seeing as a psychoanalytic situation of this nature is highly prone to observer bias, Northoff (2012) states that such a technique may not, after all, offer adequate ground for studying the mind. Similar sentiments have also been echoed by Eissler who writes: “The decrease in momentum of psychoanalytic research is due not to subjective factors amongst the analysts, but rather to historical facts of wider significance: the psychoanalysis situation has already given forth everything it contains. It is depleted with regard to research possibilities, at least as far as the possibility of new paradigms is concerned” (Eissler, 1969). Additionally, while the aim of psychoanalysis is historically anchored in science, its methods are anything but. This is evidenced by the fact that psychoanalysis has not been successful in the development of assumptions while testing hypotheses. As a matter of fact, psychoanalysis seems to have been successful in the past with regards to idea generation, as opposed to testing of these. Such failure has played a pivotal role in influencing the stalling of psychoanalysis even as other fields in psychology seem to have progressed.

The psychoanalytical perspective of neuroscience

There appears to be an intricate relationship between psychoanalysis and neuroscience. This has prompted Kandel to state thus: “.... Psychoanalysis revolutionised our

understanding of mental life. It provided a remarkable set of new insights about unconscious mental processes, psychic determinism, infantile sexuality, and perhaps, most important of all, about the irrationality of human motivation” (Kandel, 1999, p. 505). However, Kandel does not hesitate to register his disappointment, due to what he describes as failure by the field of psychoanalysis to evolve scientifically. Kandel seems to be very passionate about the role of psychoanalysis in informing our understanding of the mind.

According to Kandel (1999), “psychoanalysis still represents the most coherent and intellectually satisfying view of the mind” (p. 505). According to Thomas and Segal (2006), this failed scientific progress could possibly explain why most of the vast majority of clinical psychology training programs no longer find psychoanalysis to be fashionable. The establishment of a strong bond between psychoanalysis and cognitive neuroscience will in Kandel’s perspective, go a long way in reenergising such a relationship. This perceptive mirrors resemblance with Freud’s vision of psychology and what he perceived as its organic substructure. However, Altounian and Gabbard (2012) contend that the neuroscience-psychoanalysis relationship might be of limited benefits to the former. However, such an integration of the two disciplines would be a step forward in the right direction, in terms of assessing the role played by neuroscience in our understanding of them mind. On this, Kandel (1989) states that psychiatry, psychoanalysis and cognitive psychology “can define for biology the mental function that needs to be studied for a meaningful and sophisticated understanding of the biology of the human mind” (p. 459). The implication made from this statement is that there is a need for a novel methodological model which tries to combine the psychoanalysis with the ‘subjective’ view of the mind as represented by psychoanalysis and the ‘objective’ view as represented by neuroscience. Specifically, advances in modern techniques in neuroscience, such as in the areas of cerebral imaging has vividly indicated the need to embrace a dynamic perspective to our understanding of how the brain functions.

Kandel suggests that certain linkages are associated with the element of the unconscious that is, in turn, linked to a section of the ego responsible for motor skill development, perceptions and habits. This section tends to remain unconscious, prompting Kandel to describe it as the “procedural unconscious”. Procedural unconscious and procedural memory constitute types of learning in the absence of awareness. These forms of learning are characterized by an independent function far removed from the activity of specific inhibitory processes. Habits and skills come about owing to a progressive learning process associated with practice and repetition.

The fundamental procedural learning is evident via Pavlov’s classical conditioning perspective (Pavlov, 1927), in that it depicts the recurrent association of two stimuli. These are: unconditioned stimulus and conditioned stimulus. Subjects under this experiment learn that the unconditioned stimulus comes before the conditioned ones. Additionally, they also learn that the occurrence of unconditioned stimulus may be predicted by the manner in which the conditioned stimulus is presented (Kandel, 1999). Consequently, procedural unconscious and procedural memory is understood as the implicit regulation of inner responses as well as environmental demands. Such regulation applies a constant action on the psychic activity.

Kandel’s work has contributed significantly to our analysis of the relationship between psychoanalysis and neuroscience. He offers an in-depth assessment of the interactions between the implicit memory theory as defined by cognitive psychology and certain elements of the unconscious under the field of psychoanalysis. Memory is a system of numerous components mainly categorized into two sub-systems (Solms & Turnbull, 2002). These are: implicit memory and explicit memory. Implicit memory refers to the memory processes taking place in the absence of deliberate, conscious information recollection. Examples of implicit memory include emotional learning and the development of novel

perceptual and motor skills. In contrast, explicit memory describes the activated processes to permit in the conscious recall of events and facts.

Scholars in the field of psychoanalysts and neuroscience seem to be in agreement that implicit and explicit memory are promoted by different cerebral pathways (Watt, 2000). The hippocampus houses explicit memory and its associated structures. On the other hand, implicit memory is associated with the cerebral activities taking place external to the medial temporal lobe (Westen & Gabbard, 2002). The structural model under psychoanalysis perceives the unconscious as being dynamic. Further it views the unconscious as encompassing the psychic conflicts of the id as well as the ego and its associated defenses. Repression and other defense mechanisms act as a hindrance to the unconscious, ensuring it remains empty of awareness.

Conclusion

Cognitive neuroscience seems to share the same topic of study with psychoanalysis, that is, the human mind. The two disciplines also share in the same objective concerning the possibility of acquiring a deeper understanding of the structure of the mind by singling out functional units related to different components of the psychic apparatus. This is an important area of inclusion in the field of psychoanalysis because the integration of affective and cognitive components of psychological functioning along with the neural associated neural networks, will help shed light on elements of psychoanalytic theory that are based on empirical findings. Consequently, it will add insights into our understanding of neuroscience and how memory works. These insights are very relevant if we consider on one hand the early affective experience in the growth of the individual, in a period in which the declarative memory system is not yet developed, and, on the other hand those changes occurring during psychoanalytic therapy that are not directly related to interpretation or to any conscious process.

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