

Debating the *subject*: Is there a Lacanian neuropsychanalysis?

Mathematical formalisation is our goal, our ideal? Why? Because it alone is *matheme*, in other words, it alone is capable of being integrally transmitted. Mathematical formalization consists of what is written, but it only subsists if I employ, in presenting it, the language (*langue*) I make use of it. Therein lies the objection: no formalization of language is transmissible without the use of language itself

Jacques Lacan, *Encore*.

Introduction

Neuropsychanalysis aims to bridge psychoanalytic theory with neuroscience through integrating the psychoanalytic theory of mind with the neuroscientific understanding of the brain. Through drawing on the methodologies of the brain sciences such as imaging technologies and techniques for measuring implicit cognitive processes researchers claim they are able to make direct observation and study of neurodynamic processes under changing psychological conditions (Solms & Turnbull, 2011). Thus, research aims to study the dynamic nature of unconscious mentation and its underlying neural organisation (Solms & Turnbull, 2011). Through this process, theorists hope to verify or challenge existing psychoanalytic hypotheses regarding psychological mechanisms, develop new psychoanalytic theories and, provide new theoretical insights (driven by psychoanalytic ideas about mental functions) concerning brain processes and problems in fields such as neurophysiology, neuropsychology and psychiatry (Neuropsychanalysis, 2013, April 15th). An important feature of neuropsychanalytic research is the empirical investigation of Freud's theory of unconscious mental processes. Using an array of techniques, researchers seek to empirically test and verify his theory of the unconscious including primary process thinking and the drives.

Neuropsychanalysis raises the question of whether a specifically *Lacanian neuropsychanalysis* constitutes a coherent project. The neuropsychanalysis

movement is comprised of two main groups. An organisation with links to the *International Psychoanalytic Association* (IPA) presents their work in the journal *Neuropsychoanalysis* which features luminaries such as Kandel, Solms, Damasio, Sacks, Ledoux, Kernberg and Fonagy (Neuropsychoanalysis, 2013, April 15th). The second group is more eclectic; it is not represented by a specific organisation or journal and has stronger ties to Lacanian theory and philosophy. In this paper I pose the question - “Is there a Lacanian neuropsychoanalysis?” - by examining neuropsychoanalytic research on Freud’s theory of the unconscious in lieu of Lacan’s idea of the *subject of the unconscious*. I maintain that Lacan’s theory of the subject, which is characterised by a void or gap, creates *inherent difficulties* for a Lacanian neuropsychoanalysis and may also provide the basis for a critique of neuropsychoanalysis. By comparing underlying assumptions of neuropsychoanalytic investigations of the unconscious with Lacan’s theory of the subject I demonstrate the differences and agonism evident between these theoretical approaches to the unconscious. This tension is developed by showing that neuropsychoanalytic attempts to verify the unconscious in cognitive and brain mechanisms differs radically from Lacan’s idea of the “divided” and “insubstantial” subject of the unconscious, that may only be *supposed* and conceptualised via mathematical formalisation. As such, I claim that a Lacanian neuropsychoanalysis is untenable.

Neuropsychoanalytic investigations of the unconscious

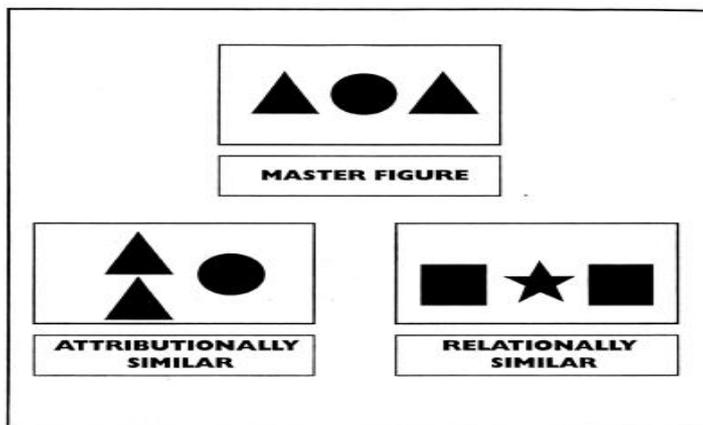
Attempts to integrate psychoanalytic theory with neuroscience have been a feature of psychoanalytic inquiry since its inception (Sulloway, 1992). Freud’s scientific training in biology and neurology informed the basis of his earliest clinical work and subsequent development of psychoanalysis. As commentators note (Solms &

Turnbull, 2011), Freud's initial attempts to ground psychoanalysis in biology were abandoned due to the technical and conceptual limitations evident in the biological science of the time. Although Freud developed a psychological theory of the mind he never abandoned the idea that psychoanalysis might be ground in biology and the workings of the central nervous system. Moreover, the history of psychoanalysis indicates theorists have continued to explore the nexus between psychoanalysis, biology and in particular, neuroscience (Suloway, 1992; Shevrin, 2003). The recent emergence of neuropsychanalysis as a specific area of enquiry in psychoanalysis is, in some way, a culmination of past attempts to fulfill Freud's original attempts to ground psychoanalysis in a biologically based model of the mind.

Neuropsychanalytic research attempts to substantiate Freud's hypothesis of unconscious primary process thinking using experimental methods. Theorists assume that empirical validation of the unconscious will not only substantiate pivotal Freudian ideas but that this research may have clinical applications, such as an increased understanding of psychopathology and treatment efficacy (Brakel & Shevrin, 2005). Freud's theory of the unconscious was groundbreaking, in part, because he identified mental processes influencing both normal and abnormal behaviour operating below the threshold of conscious awareness. He claimed that unconscious thinking, known as the *primary process*, has its own set of "rules" that differ significantly from ego functions and conscious thought (Freud, 2003). For example, primary process thinking allows contradictions in logic, is associational and is governed by the "pleasure-principle" (Brakel, Kleinsorge, Snodgrass, & Shevrin, 2000). While Freud's theory of unconscious mental process was developed through his clinical work contemporary psychoanalytic theorists have sought to verify his ideas on the primary process using experimental methods (Bazan, 2006, 2011; Bazan,

Shevrin, Brakel, & Snodgrass, 2007; Bazan et al., 2011; Brakel & Shevrin, 2005). For example, Brakel and Shevrin (2005) have investigated primary process thinking by examining different types of similarity judgements. In Figure 1 below, subjects are asked to decide what configurations of shapes are most similar to a master figure.

Figure 1: Attributional similarity and relational similarity



Theorists claim that two kinds of similarity judgements can be made: attributional similarity and relational similarity. Attributional similarity judgements are made according to *shared attributes* existing between two objects. In Figure 1, the attributional cell contains geometric objects with the same shape as the master figure. In contrast, relational similarity exists when the two objects share compositional elements. In Figure 1, the master figure and the relational comparison share the same linear spatial sequence and pattern between geometric objects - although the shapes are different the “pattern” in the two cells are similar. According to Brakel and Shevrin (2005) attributional thinking corresponds with an aspect of Freud’s theory of

primary process thinking while relational thinking is linked to a higher order ego function.¹

Through a series of experiments researchers have found that attributional thinking, and therefore primary process thinking, is evident in array of populations. For example, children between the age of 3-5 show a prominent and significant use of attributional thinking (Brakel, Shevrin, & Villa, 2002), as do individuals with heightened anxiety (Brakel & Shevrin, 2005) and those experiencing acute psychotic states (Bazan et al., 2011). From a psychoanalytic perspective these findings confirm clinical experience. Primary process thinking has long been considered evident in the life of children as evident in play therapy (Esman, 1994). Moreover, a tendency of primary process thinking of subjects in a clinical population can be linked to the theory that unconscious conflict is linked to higher levels of anxiety (Brakel & Shevrin, 2005); in addition, the correlation between higher levels of attributional thinking in acute psychosis appears to verify Freud's premise that symptoms are formations of the unconscious.² This research appears to verify one aspect of Freud's theory of the conscious, namely, the existence of primary process thinking.

Integrating psychoanalytic theory with science, and particularly neuroscience, has important philosophical implications. Although Freud was adamant that

¹ Brakel and Shevrin's (2005) broader discussion of attributional and relational thinking is also linked to research by Smith and Medin (1981) and Murphy and Medin (1985) in cognitive psychology.

² Here Freud states:

every time we come upon a symptom we can infer that there are certain definite unconscious processes in the patient which contain the sense of the symptom. But it is also necessary for that sense to be unconscious in order that the symptom can come about. Symptoms are never constructed from conscious processes; as soon as the unconscious processes concerned have become conscious, the symptom must disappear. Here you will at once perceive a means of approach to therapy, a way of making symptoms disappear (1916-17, p. 279).

psychoanalysis was a science his justification for these views are both difficult to sustain and potentially undesirable to maintain (Grigg, 2008). In neuropsychology, theorists differ in their response to this problem. For example, Shevrin (2003) aims to distance himself from theorists such as Rubenstein who insist that psychoanalytic theory be *grounded* and *verified* in neuroscience. In contrast, Shevrin is reluctant to view psychoanalysis as a science despite some “overlap”. He does not seek to ground psychoanalysis exclusively in neuroscience and maintains that psychoanalysis remain a praxis, that is, a theoretically driven clinical therapeutics. He presents a twofold approach to neuropsychology: scientific empirical research methods can be used to test psychoanalytic hypotheses; and second, findings from neuroscience can provide “convergent” evidence in support of psychoanalytic theories. Thus, when comparing psychoanalysis and neuroscience he uses the term “convergence” and “convergent validity” – this entails that neuroscience findings may independently verify psychoanalytic hypothesis through developing theories in distinct disciplines that converge on the same construct. He states:

But as I will try to show, my approach is initially grounded in psychoanalytic theory that provides the springboard for examining potentially related neuroscience findings and theories. It is more akin to discovering a convergence than to seeking a foundation elsewhere for one’s theorizing. Out of this convergence may arise independent support for important psychoanalytic assumptions and theories that link mental events to their neurophysiological counterparts (Shevrin, 2003, pg. 2).

Despite these claims, his discussion of Freudian drive theory and affective neuroscience shifts from convergence to neuroscience *grounding* psychoanalytic theory. Shevrin claims that the discovery of a mammalian motivation system linked to the neurotransmitter dopamine by researchers in affective neuroscience grounds Freud's drive theory. On the one hand, his discussion of drive theory is focused on the "classical" aspects of Freud's theory such as the somatic source, object, aim and pressure (Shevrin, 2003). However, in outlining his main findings, Shevrin contradicts his earlier views on the independence of the neuroscience and psychoanalysis. He states:

The classical view of motivation embodied in Freud's drive theory is supported independently by substantial neuroscience evidence. This independent evidence based on non-clinical methods demonstrates that two key presuppositions of clinical motivation theory, motive pressure and functional equivalence, have *convergent validity*. A clinical theory of motivation based on these assumptions acquires greater cogency. Based on this convergence, a theory of agency is presented as well as implications for our understanding of the primary process...*Finally, the neuroscience evidence provides a neurophysiological and neuroanatomical grounding of drives* (Shevrin, 2003, pg. 18, emphasis added).

Hence two kinds of comparisons are made between the unconscious and neuroscience – convergence validity and a "grounding" of drive theory in neuroscience. While the claim that aspects of drive theory and neuroscience have convergent validity is clear his statement that Freud's drive theory can be grounded in neuroanatomy and neurophysiology indicates a different relation. *Grounding* evokes the idea that drive

theory can be directly linked to a neurophysiological and neuroanatomical substrate. Consequently, this moves well beyond a convergence between two distinct fields and appears to contradict his earlier views that psychoanalytic theory should remain distinct from neuroscience.

In summary, neuropsychanalytic research aims to provide empirical support for Freud's theory of the unconscious, such as primary process thinking and the drives, by providing evidence as to their underlying cognitive processes or neural substrate. These overarching assumptions and aims lie in tension with Lacan's theory of the subject of the unconscious, and thus calls into question the possibility of a Lacanian neuropsychanalysis.

The subject of the unconscious

Lacan's idea of the *subject of the unconscious* contains assumptions that are significantly different to the neuropsychanalytic counterpart. Lacan's theory of the subject is derived in Freud's idea of the unconscious. Although Freud never used the term "subject", Lacan uses this term when theorising the unconscious; he first introduced the term subject in 1953, in part, to crystalise the Freudian distinction between the unconscious and the ego. The phrase the *subject of the unconscious* designates a formal category that has far reaching implications for the theory and practice of Lacanian psychoanalysis. For Lacan, the subject of the unconscious is central to what psychoanalysis is: the subject of the unconscious is a locus distinct from the ego and consciousness that emerges from becoming a "speaking being". It also constitutes the primary focus of clinical intervention. Lacan's translation of Freud's dictum "Wo Es war, soll Ich werden" to the injunction "where (it) was itself it is my duty to come into being" (Lacan, 1955, p. 348) highlights how the Freudian

idea of the id and the unconscious are reframed in terms of the subject of the unconscious. In addition, it also indicates an ethical imperative: Lacan maintains that an individual must take responsibility for their subject position despite the unconscious nature of such identifications.

Lacan's theory of the subject is complex; although the subject is included in the definition of the unconscious it is *not* synonymous with unconscious thought processes, such as "primary process" thinking. Rather, the subject is characterised by a formal gap, a void that emerges due to the effects of language, and as such is opposed to a substantial form or essential identity. Lacan's comments on subject of the unconscious makes the *incompatibility* with neuropsychanalysis self evident:

The unconscious is the sum of the effects of speech on a subject, at the level at which the *subject constitutes himself out of the effects of the signifier*. This makes it clear that, in the term *subject*—this is why I referred it back to its origin—I am *not designating the living substratum needed by this phenomenon of the subject, nor any sort of substance, nor any being possessing knowledge* in his pathos, his suffering, whether primal or secondary, *nor even some incarnated logos*, but the *Cartesian subject*, who *appears at the moment when doubt is recognized as certainty*—except that, through my approach, the *bases of this subject prove to be wider*, but, at the same time much more amenable to the certainty that eludes it. *This is what the unconscious is* (1979, pg. 126, emphasis added).

Two points should be made here: first, the subject is "insubstantial" and second, it linked to Descartes' cogito - I return to this second point later.

Lacan's idea of the subject, and hence the unconscious, are at odds with the assumptions underlying neuropsychanalysis. That is, the underlying aims and assumptions of neuropsychanalysis are incompatible with Lacan's theory of the subject. For example, Lacan's statement that the unconscious cannot be identified with any concrete abstraction, psychological entity, material substance or living substrate entails that Shevrin's aim of "grounding" Freudian drive theory in neurophysiology and neuroanatomy are in contradiction. In addition, while Brakel and Shevrin's (2005) findings on attributional thinking and the primary process should be commended for verifying important tenants of Freud's description of the unconscious, from a Lacanian point of view, this verification is only *partial*. That is, primary process thinking, although unconscious, is *not equivalent* to the subject of the unconscious. This point is evident if we consider Lacan's comments about the unconscious as *structured like a language*. In fact, Lacan's statement that the unconscious is structured like a language and his theory of the "signifying chain" are derived from Freud's theory of primary process thinking. By conceptualising Freud's ideas of "condensation" and "displacement" - the two poles of primary process thinking - with more contemporary linguistic ideas of metaphor and metonymy, he provided an original and illuminating reading of Freud's theory of the unconscious.³

³ He states:

This is why an exhaustion of the defense mechanisms...turns out to be the other side of unconscious mechanisms... Periphrasis, hyperbaton, ellipsis, suspension, anticipation, retraction, negation, digression, and irony, these are the figures of style...just as catachresis, litotes, antonomasia, and hypotyposis are the tropes, whose names strike me as the most appropriate ones with which to label these mechanisms. Can one see here mere manners of speaking, when it is the figures themselves that are at work in the rhetoric of the discourse the analysand actually utters? (Lacan, 1957, pg. 433).

This emphasis on language and the rhetorical tropes evident in primary process thinking differ from the subject of the unconscious. What makes Lacan's theory of the subject of the unconscious distinct from the assumptions underlying neuropsychanalysis is that the *categorical* definition of the unconscious is maintained. It is easy to forget that the idea of the unconscious refers to something *impossible* – to assume that the unconscious can be “made conscious” or “unveiled” through experimental methods shy's away from the “negative” definition of the unconscious. That is, the unconscious, in the most elementary sense of the term is something that cannot be thought or represented. Thus, I claim that Freud's description of primary process thinking and its subsequent verification by researchers maps the mechanisms underlying *formations of the unconscious* as opposed to the subject of the unconscious.⁴ Moreover, Lacan's work develops the paradox lying at center of psychoanalysis namely, that the unconscious is by definition, “outside of thought” but draws on the fields of linguistics, logic and mathematics to develop this idea.

As Lacan's earlier statement indicated, the subject emerges from the effects of the signifier and language. However, although the subject is posed in relation to the signifier it is not irreducible to it. Hence, while the primary processes are linked to the rhetorical mechanisms of language the subject of the unconscious is not equivalent to this. Lacan's statement, that his idea of the subject is to be found via Descartes' cogito, points instead to the idea of *division*. For Lacan, the subject “appears” at the moment in the cogito when doubt and certainty emerge simultaneously; the idea of the divided subject, which is the subject of the unconscious, is found at this point. On the one hand, the subject of the unconscious is a *supposition* - it can never be

⁴ Freud describes five formations of the unconscious that emerge via primary process thinking: dreams, symptoms, jokes, forgetting, and bungled actions.

identified in any substantive or empirical sense and remains at the level of supposition.⁵ On the other, Lacan also claims that the subject exists in a “topological space” and that this can be formalised using linguistics, mathematics and logic (Grigg, 2008).

For Lacan the subject of the unconscious occupies a topological space where discourse, language and the corporeal drives have continuity.⁶ The subject designates a gap or a void and as such is “radically” unconscious; it has no actual existence, it cannot be identified with any substantive or material entity or with a psychological process or mechanism. Despite this difficulty, the subject is central to Lacan’s understanding of psychoanalysis and specifically the unconscious. For example, the subject *is* linked to the drives and as such remains pivotal for conceptualising the problems encountered in clinical practice. Thus, when Lacan states “the drive is precisely that montage by which sexuality participates in psychical life, in a way that must conform to the gap-like structure that is the structure of the unconscious” (1979, pg. 176) he alludes to the idea that the unconscious is a “gap” and that this gap is the place where the subject and its drives are situated. Moreover, for Lacan this gap marking the place of the subject of the unconscious and its drives should be conceptualised as a topological space, that is, a place that can be supposed and then

⁵ In logic, a supposition is made when an utterance refers to a specific thing or object without explicitly naming it. For example, there is a supposition of truth in everyday discourse; that is, when I speak to another person there is an implicit agreement that each person is speaking the truth. Without this supposition of truth, the social relation would be radically different. Lacan’s idea of the subject emerges from a similar operation. That is to say, the subject, although unstated, is supposed through speech acts and more specifically, with reference to the *formations of the unconscious*.

⁶ Hence the title of Fink’s (1995) book *The Lacanian subject: between language and jouissance* provides a nice characterization of this thesis.

conceptualised by drawing on mathematical disciplines such as set theory and topology.⁷ He alludes to this by stating that:

This articulation leads us to make of the manifestation of the drive the mode of a headless subject, for everything is articulated in it in terms of tension, and has no relation to the subject other than one of *topological community*. I have been able to articulate the *unconscious for you as being situated in the gaps* that the distribution of the signifying investments sets up in the subject...which I place at the centre of any relation of the unconscious between reality and the subject. Well! It is in so far as something in the apparatus of the body is structured in the same way, it is because of the *topological unity of the gaps in play, that the drive assumes its role in the functioning of the unconscious* (Lacan, 1979, pg. 181, emphasis added).

Consequently, Lacan's idea of the unconscious is conceptualised as a topological space: this "gap" constitutes a locus from which the subject, its drives, and language are situated in "community" with each other.⁸ Consequently, although his idea of the subject is insubstantial the conceptual problems of psychoanalysis are articulated

⁷ In mathematics there are many kinds of topological spaces. For example, Euclidian geometry provides a 3-dimensional picture of space via the x, y, z-axes. Lacan's interest in set theory and topology is central to his attempts to conceptualise the problem of the unconscious

⁸ This is a topological term, usually referred to as *neighborhood*, and refers to the idea of proximity insomuch as different elements have contiguity by belonging to the same set (Wolfram Mathworld, 2013).

using the formal language of mathematics as opposed to the paradigm of biological neuroscience.

Conclusion

It is quite clear that Lacan's ideas on the unconscious is not easily integrated with current neuropsychanalytic research on the unconscious. The most obvious reason for this is that Lacan's theory of the unconscious cannot be equated with a substantial, material or psychological entity. Lacan's insistence on this point entails that his views on the unconscious lie in contrast with current neuropsychanalytic research. As I have shown, neuropsychanalytic research aims, in part, to verify Freud's theory of the unconscious - such as the primary processes and the drives - through identifying the cognitive mechanisms and brain substructures that *converge* with or *ground* classical Freudian hypotheses. However, this explicit aim of verifying psychoanalytic hypothesis using the methodologies and constructs of neuroscience becomes nonsensical when viewed from a Lacanian vantage point. Lacan's mathematical approach to conceptualising the unconscious produces a radically different object of investigation when compared to the assumptions underlying neuropsychanalytic research. Consequently, it is clear that a Lacanian neuropsychanalysis cannot proceed along the path used by fellow neuropsychanalytic researchers. In addition, given the conceptual discrepancies relating to how Freud is understood, a more detailed Lacanian critique of neuropsychanalytic research may begin with questioning a fundamental aim of this field: "What does it mean to *verify* the Freudian hypotheses of the unconscious?"

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