

Psychoanalytic Diagnosis:
A Quantitative Lexical Analysis of Rorschach Responses

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Abstract

An important part of psychological diagnosis involves determining the patient's level of personality functioning. In part, psychoanalytic clinicians accomplish this by making a judgment about the maturity of the patient's personality organization. This occurs across a three-level continuum ranging from neurotic (least severe) to borderline to psychotic (most severe). The current study sought to determine whether a computer-based lexical analysis of patient Rorschach free-association responses could predict maturity of personality organization. Specifically, would the frequencies of words associated with the psychoanalytic constructs of primary process mentation and ego boundary disturbance differ according to level of personality organization? An archival lexical analysis was conducted using two computerized word dictionaries that operationalize the psychoanalytic constructs of primary and secondary process mentation and ego boundary integrity. I hypothesized that language indicating increased levels of primary process mentation and ego boundary disturbance would coincide with more severe personality pathology. However, results showed no differences in primary versus secondary process or ego boundary integrity among participants with differing levels of personality organization. I discuss the implications of these findings and offer future directions for research.

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CHAPTER I: REVIEW OF THE LITERATURE

Introduction

The objective of this study is to determine whether a computerized lexical analysis of Rorschach responses can distinguish among psychiatric patients' levels of personality organization. The Rorschach requires that subjects respond to ambiguous inkblots. It has long been valued as a psychological assessment instrument because of its capacity to elicit latent aspects of the psychic interior (Klopfer, Ainsworth, Klopfer, & Holt, 1954; Exner, 1974; Meyer, Viglione, Mihura, Erard, & Erdberg, 2011). Schafer (1954), putting it more poetically, stated that the Rorschach, "briefly unlocks the book of our private imagery" (p. 75).

In the current study, I propose a lexical analysis of Rorschach responses. I hypothesize that this analysis will reveal the presence of themes that reflect the respondent's level of personality organization; the degree to which words associated with these themes are observed will predict the severity of personality pathology. To accomplish this, I will assess ego boundary disturbance and primary versus secondary process mentation, two psychoanalytic constructs with implications for personality functioning.

I will apply two computerized word dictionaries to the Rorschach responses of patients at a university psychological clinic. The first, *The Regressive Imagery Dictionary* (Martindale, 1975; 1990), measures primary and secondary process language. I use the second, *The Body Type Dictionary* (Wilson, 2006), to measure the integrity of ego boundaries. I hypothesize that the amount of primary process mentation and presence of ego boundary disturbances observed in the language patients use to respond to Rorschach cards will correspond with their level of personality organization as indicated by their recorded diagnoses.

Psychoanalytic Diagnosis

Although the Diagnostic and Statistical Manual, 5th ed. (DSM-5; American Psychiatric Association, 2013) is widely considered the standard for the classification of psychopathology, many clinicians and researchers have questioned aspects of its validity (e.g., Jablensky & Kendell, 2002; Rounsaville, Alarcón, Andrews, Jackson, Kendell, & Kendler, 2002; Westen, Heim, Morrison, Patterson, & Campbell, 2002). From a treatment-centered view, perhaps the most important criticism concerns its diagnostic focus on symptom clusters consisting primarily of observable traits and behaviors (Herzig & Licht, 2006; Westen, Shedler, Bradley, & DeFife, 2012). That is, DSM diagnoses are made irrespective of the context from which symptoms emerge. For example, diagnoses such as major depressive disorder are rendered discrete from whatever underlying dynamics might have given rise to the depressive presentation.

There are, however, alternatives to the DSM-5. The most comprehensive is the psychoanalytic contribution to the classification of mental health disorders, the *Psychodynamic Diagnostic Manual* (PDM; PDM Task Force, 2006). The PDM emphasizes a richer understanding of symptoms, the whole personality, and the relationship between the two. Compared to the DSM-5, the PDM asserts that accurate diagnosis and effective treatment rely substantially on an understanding of an individual's personality well beyond the presenting symptoms.

In its nosology of psychological disorders, the PDM characterizes personality functioning along two dimensions: personality type and personality organization. This two-dimensional system attempts to describe both how disturbed a person is (level of personality organization) and the exact nature of their disturbance (personality type). Personality type is defined by the

typical defenses, relational patterns, and subjective experiences that a person exhibits (PDM Task Force, 2006). Included in this category are types such as narcissistic, paranoid, and schizoid.

Level of personality organization, the subject of the current study, is a continuum measure of personality pathology (PDM Task Force, 2006). From least to most severe, the continuum ranges from neurotic to borderline to psychotic. A comprehensive psychoanalytic diagnosis assesses both personality type *and* personality organization. For example, a patient might be diagnosed with paranoid personality type at the borderline level of organization. An assessment of a patient's level of personality organization is a necessary precursor to psychoanalytic psychotherapies because it affects the prognosis, focus, and pace of therapy (Kernberg, 1984). It is important to note that Borderline Personality Organization (BPO) should not be confused with Borderline Personality Disorder, a DSM-5 diagnosis that, although closely related to BPO, does not exist within the psychoanalytic nosology.

Level of personality organization. The theory of personality organization underlying the PDM is primarily based on the work of Otto Kernberg (1975, 1984). He, along with other psychoanalytic theorists (Knight, 1953; Main, 1957), recognized the existence of a “borderline” group of patients whose levels of personality pathology were fixed between the established categories of neurotic and psychotic. Kernberg (1984) asserts that neurotic, borderline, and psychotic patients differ according to three criteria: identity integration, ego defense profile, and reality testing. Identity integration refers to the capacity of the patient to maintain a stable, coherent sense of self and recognize others as separate, complex, and, whole persons. Mature identity integration implies the presence of an integrated, intact ego. Ego defense profile consists

of the patient's preferred modes of protecting the ego from anxiety and preserving self-esteem. For example, denial, a commonly used defense mechanism, allows the user to unconsciously reject or overlook an occurrence that might otherwise cause discomfort. Finally, reality testing refers to the capacity to perceive the external world accurately and make judgments about how one's beliefs, emotions, or behavior might be viewed in the context of societal standards.

Psychotic personality organization. With regard to identity integration, psychotic personality is characterized by a sense of the self that is inadequately differentiated from the other (Blatt, 1974; Kernberg, 1984). In psychotic persons, the ego is tenuously maintained by highly fluid boundaries. Permeable ego boundaries limit the capacity to distinguish between perceptions that originate intrapsychically, such as hallucinations, and those that originate in the environment. Depending on the degree to which the ego has matured, the psychotic person's identity may also become disturbed to the point that they genuinely wonder whether or not they exist.

Psychotically organized persons also exhibit fundamentally flawed reality testing, including an inability to differentiate between what is real and what is not (Kernberg, 1984). Their conscious thought tends to be dominated by the earliest developing forms of mentation. As a result, their thinking is highly disorganized and characterized by the hallmarks of reality testing failure, hallucinations and delusions. They are also unlikely to see their own idiosyncrasies as strange in relation to cultural norms.

The typical defenses used by the psychotic person are often referred to as "primitive." They include denial, withdrawal, and archaic manifestations of projection and introjection

(Kernberg, 1984). These defenses solidify early in psychological development and are employed to protect the subjective existence of a differentiated self.

Borderline personality organization. Persons with BPO exhibit deficits in identity integration and ego boundary disturbance that are less severe than those found in psychotic persons (Kernberg, 1984). The BPO ego houses a diffuse identity and maintains concomitant separations between contradictory aspects of both the self and other (Kernberg, 1984). For example, the mental representations of the loving mother and the withholding mother, despite their corresponding to the same person in external reality, are held separate in the mind in order to protect the “goodness” of the mother experienced as loving from the “badness” of the mother experienced as withholding. This schism impairs the capacity to see one’s self and others as complex, cohesive beings with both good and bad qualities. The act of maintaining this separation constitutes the defense mechanism known as splitting. Although persons with BPO can differentiate between self and other, ego boundary disturbances inhibit the capacity to distinguish between the object as it is in external reality and the mental representation corresponding to the object (Blatt, 1974).

Borderline defenses tend to be more mature than psychotic defenses in that they distort reality to a lesser degree. On the whole, however, they are still considered primitive because of the significant impairment they cause in psychological functioning, especially in the interpersonal realm (Kernberg, 1984). Furthermore, the function of these defenses in borderline patients is different than their function in psychotic patients. Among persons with BPO, defenses are intended to shield the psyche from internal conflict rather than maintain the boundary between self and other. Thus, the most characteristic defenses of people with

borderline organization are splitting and projective identification, which is a complex variant of projection.

Splitting, as defined above, indicates an oscillation between conflicting experiences of self and others, such that they are experienced as either “all good” or “all bad.” Projective identification occurs when a person projects intolerable aspects of the self (typically aggressive in nature) onto another but maintains an identification with the person onto whom the aggressive aspects have been projected (Kernberg, 1975). The person then fears the object as a result of the (projected) aggressive impulses now residing within them. Further, the person feels the need to preemptively exert control over the object so as not to be destroyed by the aggression. Projective identification typically occurs in the context of underdeveloped or impaired ego boundaries. If ego boundaries are sufficiently fluid, then there is often confusion about what feelings or impulses belong to one's self versus someone else. This fluidity is characteristic of projective identification.

Reality testing in BPO is more mature than in psychotic personality organization (Kernberg, 1984). Patients with BPO are generally able to differentiate between self and other and notice when their appearance or behavior diverges from social norms. However, they are prone to slipping into fantasy-based modes of thinking in which their beliefs interfere significantly with their functioning.

Neurotic personality organization. Neurotic personalities are characterized by intact ego boundaries that create a sharply defined sense of self and other (Kernberg, 1984). Contradictory aspects of self and other (e.g. “good” and “bad”) are integrated into cohesive, comprehensive, and realistic representations. This affords the neurotic person the capacity to relate to others as

whole, complex persons and consequently cultivate more satisfying relationships. The sense of identity in neurotic personality organization is also stable over time. Additionally, neurotically organized persons use “secondary” or “higher order” defenses (Kernberg, 1984), such as repression, intellectualization, and undoing. Much like borderline defenses, neurotic defensive operations serve to protect against intrapsychic conflict; however, they exact a much lower price with regard to reality testing. Finally, persons diagnosed as neurotic possess fully developed reality testing capacities (Kernberg, 1984). They are able to realistically and coherently describe themselves and others in appropriate and meaningful ways. They are also capable of navigating situations in the external world with the benefit of reality-based, logical modes of thought.

Personality Organization Research

Kernberg (1981) initially proposed the structural interview as his method for assessing personality organization. The purpose is to evaluate identity integration, primitive defenses, and reality testing. In recent years, the structural interview has been adapted to a more standardized, semi-structured format called the *Structured Interview of Personality Organization* (STIPO; Stern et al., 2010). Research has established the internal consistency, interrater reliability, and construct validity for identity integration and primitive defenses. Although the reality testing dimension has acceptable interrater reliability, its internal consistency and validity have yet to be established. Kernberg and Clarkin (1995) also developed a 155-item self-report measure called the *Inventory of Personality Organization* that also measures the three fundamental aspects of personality organization. Each item is answered on a five-point Likert-type scale. Although there is evidence for the internal consistency and construct validity of the scale (Lenzenweger,

Clarkin, Kernberg, & Foelsch, 2001), there is some concern as to how well self-reports of personality organization might correlate with the assessment of trained clinicians.

Other research relevant to personality organization has been conducted using projective instruments, such as the Rorschach. These studies have commonly measured object relatedness, that is, the capacity to form mature interpersonal relationships. This line of research does not purport to measure personality organization as a whole. Nevertheless, object relatedness has important implications for all three aspects of personality organization. In one study, Krohn and Mayman (1974) created a scale for object representation that measures a subject's potential for mature object relatedness. The researchers found high correlations among the object relatedness evident in subjects' Rorschach responses, dreams, and early memories, suggesting that object relatedness can be quantified across all three modes of response.

Urist (1977) developed the seven-point *Mutuality of Autonomy Scale* for Rorschach responses. At one end of the scale, figures in responses reciprocally acknowledge each other's individuality while engaging in a mutual activity. Mutuality is thought to indicate greater identity cohesion and mature object relations. At the opposite end of the scale, responses indicating lower levels of mutuality include overpowering, devouring, or incorporating forces. According to Urist (1977), this suggests greater identity diffusion and an immaturity of object relatedness. Recently, the *Mutuality of Autonomy Scale* was incorporated into the *Rorschach Performance Assessment System (R-PAS)*; Meyer, Viglione, Mihura, Erard, & Erdberg, 2011), which is an updated Rorschach scoring system that places greater emphasis on the reliability and validity of interpretive factors.

Another study (Westen, Lohr, Silk, Gold, & Kerber, 1990) used TAT cards to elicit responses that were measured along four scales devised by the researchers: complexity of representations of people, affect tone of relationship paradigms, capacity for emotional investment of relationships, and understanding of social causality. Results showed that subjects with borderline personality disorder exhibited less mature object relations than neurotic depressed patients and healthy controls. Finally, Tullis (2016) conducted a lexical analysis of TAT responses and found that neurotic patients used significantly more cognitive processing words than borderline patients. The findings of this study in particular suggest that cognitive processes specific to psychoanalytic theory, i.e., primary and secondary process mentation, might also predict level of personality organization. This is of special interest due to the substantial degree to which primary process mentation is related to reality testing, identity integration, and defensive operations.

Primary and Secondary Processes

At the core of the psychoanalytic theory of thinking are the instinctive distinctions that many of us describe in our own mental lives: conscious versus unconscious decision-making, rationality versus intuition, and intellect versus emotion. Schimek & Goldberger (1995) suggest that Freud's theory of thinking falls within a long philosophical tradition of contrasting, "... a type of thinking under voluntary control, directed by the thinker's conscious purposes and intentions, and another type that is seemingly random, meaningless, and beyond the person's volitional control" (p. 209). The differences between primary and secondary processes, however, extend beyond intuitive or even epistemological differences. Since Freud posited his theory of mentation in *The Interpretation of Dreams* (1900/1953), the constructs of primary and

secondary processes have been an important part of both psychoanalytic research and clinical work. In particular, the presence of primary process mentation has been theorized to have critical diagnostic implications (Kernberg, 1975).

Primary process mentation.

Primary and secondary process differ in the following four ways: 1) the types of *content* produced; 2) *formal properties*; 3) *developmental origins*; and 4) *function*.

Content. Primary process thinking operates according to its own autistic logic. This logic is separate from and unrelated to external reality (Freud, 1900/1953; 1911/1958; 1915/1957). As a result, primary process thinking produces bizarre, magical, and seemingly illogical content. Issuing from the unconscious, primary process mentation flows freely on the basis of concrete, superficial associations. Primary process thinking produces the mental content of dreams, fantasies (Freud, 1900/1953), slips of the tongue (Freud, 1901/1960), hypnosis (Gill & Brenman, 1959; Nash, 1991), drug-induced states (Holt, 2009), creativity (Kris, 1952), and psychopathology (Freud, 1900/1953; Rapaport, 1950; Schafer, 1948).

Formal properties. The formal properties of primary process mentation are condensation and displacement (Freud, 1900/1953). Condensation refers to the collapse or combination of elements that would typically be maintained as distinct in waking adult mental life (Freud 1940/1964). Displacement refers to the redirecting of important elements of mentation, such as affect or interest, away from their true object and toward another. Together, condensation and displacement transform latent, unconscious material into the manifest, conscious products of dreams, fantasy, hypnosis, psychopathology, etc. Take, for example, the hypothetical dream scene of a snake threatening to attack the dreamer's rival. The snake might be a condensed

symbolization of the dreamer's sexuality and aggression. Further, the aggressive threats of the snake toward the rival might be a displacement of the dreamer's masochistic impulses. The displacement protects the dreamer from his painful, self-directed aggression by providing a more comfortable target for his hostility.

Developmental origins. Primary process thinking is the only type of mentation available to infants (Freud, 1900/1953). It dominates mental life throughout early childhood, while secondary processes develop. Around the age of seven or eight years, secondary processes begin to overtake primary processes in conscious mental life (Shapiro & Perry, 1976). However, the primary processes do not cease to operate. Rather, they are relegated to the unconscious, where they continue to function simultaneously with the conscious secondary processes. Importantly, primary process products, disguised by condensation and displacement, continue to make their way into consciousness (Rapaport, 1967). As a result, all mentation is the product of *both* primary and secondary processes, which makes it difficult to discern the exact impact of either on any one particular thought (Schimeck & Goldberger, 1995).

Function. Primary processes are governed by the id and the pleasure principle (Freud, 1923/1961). As such, their function is to avoid discomfort and satisfy drive frustrations as quickly as possible. Theoretically, the fastest method of discharging tension is the duplication of an earlier instance of effective tension relief. If external reality is uncooperative in providing such relief, then the primary processes are employed to generate hallucinations or fantasy in an effort to reproduce satisfaction. The prototypical example is a hungry infant hallucinating a breast in the absence of her mother. This tendency toward wish fulfillment without regard for reality strongly influences the bizarre and outlandish content of primary process mentation. In

healthy persons, the tendency to hallucinate develops into a capacity for fantasy, which differs from hallucination because it implies an acknowledgement that the content of the fantasy differs from reality.

Secondary process mentation.

Content and formal property. In sharp contrast to the primary processes, secondary process mentation is structured, logical, and abstract (Freud 1900/1953). It allows for delayed gratification, planning, and self-reflection, as well as the recognition of patterns and the creation of conceptual connections between ideas. Secondary process mentation is reality-oriented and comprises the principal mode of thinking in the mature, conscious, and alert adult. Its formal properties can be described as logical, analytical, and reality-based.

Developmental origin. Secondary processes begin to develop as the hallucinatory wish fulfillment of primary process mentation fails to secure what the infant desires. As a result of repeated failed attempts at satisfaction through hallucination, the infant is forced to pay greater heed to reality. Secondary processes, including the capacity for delayed gratification and planning, are the outcome. Freud (1911/1958) described the ascendance of secondary process mentation by noting that, "... what was presented in the mind was no longer what was agreeable but what was real, even if it happened to be disagreeable" (p. 219).

Function. Secondary processes are governed by the ego and the reality principle (Freud, 1923/1961). Their function is to provide an adaptive interface with reality that allows for planning and the toleration of discomfort that are inherent in the mature pursuit of satisfaction and pleasure. This includes working to restrict primary process products from becoming manifest in conscious awareness and interfering with more accurate representations of reality.

Primary processes and personality organization. In differentiating between neurotic and borderline personality organizations, Kernberg (1975) asserts that, "... primary-process thinking is... the most important single structural indicator of borderline personality organization" (p. 25). He describes primary processes as inextricably related to the greater use of primitive defenses, a more diffuse identity with unstable ego boundaries, and the maintenance of developmentally early (and pathological) object relations. On the other hand, greater secondary process mentation indicates the use of higher order defenses, an integrated ego, and mature object relations.

Primary Process Research

Since Freud's originally proposed primary process mentation, many researchers have endeavored to measure it. The bulk of the research has focused on hypnotically-suggested dreams, subliminal stimulation, and the use of projective psychological tests, such as the Rorschach Inkblot Method and the Thematic Apperception Test (TAT). A smaller number of studies have employed other methods.

Hypnotically induced dreams. In three early experiments, three different researchers (Schrötter, 1911/1951; Roffenstein, 1924/1951; Nachmansohn, 1925/1951) found evidence for primary process mentation in hypnotically-induced dreams. In each of the experiments, the researchers induced hypnosis and made suggestions for the subjects to have dreams about different subjects. Upon bringing the subjects out of hypnosis and asking them about the content of their dreams, the researchers discovered symbolically transformed elements of the suggested dream content. Each of them drew connections between their findings and Freud's theory of dreams by noting that the latent dream content (the dream suggestions) had been transformed

into manifest content (the subjects' dream reports) by way of the formal properties of primary process mentation: condensation and displacement.

Subliminal stimulation. In work reviewed by Shevrin and Luborsky (1958), Otto Pötzl (1917) found evidence for primary processes in an experiment in which subjects were briefly presented with images, asked about the content of the images immediately afterward, and then asked to record their dreams that night. Pötzl found that subjects tended to dream about aspects of the images they did not report immediately after exposure. He drew the conclusion that these features had been preconscious following exposure. He also found evidence for the transformation of these preconscious perceptions by condensation and displacement. In their own more systematic investigation of preconscious perception, Shevrin & Luborsky (1958) employed judges who achieved a high interrater reliability in confirming that unreported features from presented images later appeared in subjects' dreams in distorted form.

Shevrin and Luborsky (1961) also devised the rebus method for the measurement of primary processes. In this research, subjects were subliminally presented with images of a pen and a knee. Given that primary process mentation is more closely related to the concrete or superficial qualities of objects or ideas than their abstract representations and relationships (Freud 1900/1953), Shevrin and Luborsky proposed that primary processes might transform the words "pen" and "knee" into the word "penny" by way of phonemic condensation. Indeed, dreams of subjects who had been subliminally presented with the rebus item tended to contain pennies or other objects related to money and finances.

Projective tests. Other attempts to measure primary process mentation utilized responses to projective psychological tests, including Rorschach and TAT cards. Rapaport, Gill,

and Schafer (1968) and Holt (Holt & Havel, 1960; Holt 2009) devised methods for scoring primary process mentation on Rorschach cards. Holt later broadened his method, the Primary Process System (PRIPRO), by altering it for use with TAT cards (Holt, 2007). The PRIPRO is the most widely used measure of primary process mentation and it is comprehensive and complex. It measures primary process content, formal properties, and defenses against the socially unacceptable products of the primary processes. Holt (2009) has published extensive data on the reliability and validity of the PRIPRO. Across many studies, he found high interrater reliability as well as significant evidence for increased primary process mentation during psychosis, hypnosis, creative states, and intoxication.

Other methods. Auld, Goldenberg, and Weiss (1968) developed a highly reliable 7-point Likert-type scale to measure primary process manifestation in dream reports. In particular, this scale measures the irrational associations and fantastical content that are indicative of primary processes as well as the tendency toward wish fulfillment at the expense of accurate perceptions of reality. Brakel, Kleinsorge, Snodgrass, and Shevrin (2000) created a non-verbal method of primary process assessment called the GeoCat, which combines elements of psychoanalytic theory and cognitive psychology. The GeoCat tasks subjects with categorizing geometric figures and assesses whether they do so on the basis of concrete attributional features, or abstract relational features. Attributional categorizations are taken to be indicative of primary processes and relational categorizations are thought to be evidence of secondary processes. Studies using the GeoCat have supported the notion that states of anxiety (Brakel & Shevrin, 2005), psychosis (Bazan, Van Draege, De Kock, Brakel, Geerardyn, & Shevrin, 2013), and hypnosis (Lyon, 2016) all produce a shift away from secondary process mentation toward

primary process mentation. Additionally, pre-latency children have been found to exhibit significantly more primary process mentation than post-latency children and adults (Brakel, Shevrin, & Villa, 2002).

Ego Boundary Disturbance

Like primary process mentation, ego boundary disturbances are inextricable from personality organization. The integrity of the ego is most closely related to identity integration, but it is also connected with defensive operations and the capacity for reality testing (Kernberg, 1984). Kernberg's (1975; 1984) theory emphasizes that the evolution of an ego with well-defined boundaries is an important aspect of psychological development. The gradual delineation of ego boundaries occurs during the first several years of life and has important implications for long-term psychological health (Blatt, 1974; Jacobson, 1964; Kernberg, 1975; 1984; Mahler, 1968). Ego boundary disturbances are assumed to be evidence of psychopathology in the form of either borderline or psychotic levels of personality organization.

Ego boundary disturbances manifest in two realms: (1) along the border that divides self from other (Blatt, 1974; Mahler, 1968; Kernberg, 1975; 1984); and (2) along the boundary between inner and outer reality (Blatt, 1974, Kernberg, 1975). Blatt (1974) specifically argues that ego boundaries evolve along a developmental continuum in which the boundary between self and other is established first, followed by the boundary that separates inner psychic life from external reality. Confusion regarding the self-other boundary is indicative of psychotic personality organization and is the result of developmental failures early in childhood (Blatt, 1974; Kernberg, 1975; 1984). Confusion related to the inner-outer boundary is a manifestation of borderline personality organization and is the result of developmental difficulties in middle

childhood (Blatt, 1974; Lerner, Sugarman, & Barbour, 1985). Neurotic personality organization is characterized by the relative absence of ego boundary disturbances.

Self and other differentiation. Several psychoanalytic theorists (see Jacobson, 1964; Kernberg, 1976; Mahler, 1968; Stern, 1985; Winnicott, 1945) have proposed that the human infant's sense of self develops from an initial experience of being undifferentiated from caretakers. Mahler (1968), in particular, believed that the infant exists in a state of "symbiosis" or psychic merger with a parenting figure. In this initial stage of psychological development, there is not yet a sense of self or a sense of other. As the healthy infant matures and is cared for by capable parents, a psychological self/other boundary is gradually established. The delineation of ego boundaries permits the sense of self as a discreet entity to be maintained. The healthy outcome of this is a sense of individual identity in which healthy boundaries between self and other are established (Kernberg, 1984). If this developmental process is interrupted, self and other either remain fused or become only tenuously differentiated. In either case, there is an inability to distinguish between self and other that is indicative of psychotic pathology.

Internal and external differentiation. As self and other become differentiated and the state of symbiosis ends, the experiences of relationships are incorporated into the infant's mind in the form of mental representations of self and other. (Jacobson, 1964; Kernberg, 1984). These mental representations (or schemas) are both continually reshaped by experiences of interpersonal relationships and regulate the ways in which we experience others and ourselves (Blatt, Auerbach, & Levy, 1997). In healthy development, self and object representations grow increasingly complex and malleable, allowing for greater psychological flexibility in complicated adult relationships. This requires a decreasing reliance on internal representations

and a growing capacity to integrate external reality into affects and behavior in interpersonal interactions.

Blatt (1974) theorized that an inability to distinguish between internal mental representations and external reality is indicative of an ego boundary disturbance between inner mental life and outer reality. That is, the boundary is permeable and internal representations are inaccurately employed and excessively relied upon to interpret events in external reality. For example, a patient who unduly invests her romantic partner with qualities from cold, withholding object-representations would be said to have an inner-outer ego boundary disturbance. Persons manifesting this particular ego boundary confusion are theorized to have BPO (Blatt, 1974; Kwawer, 1979; Lerner, Sugarman, & Barbour, 1985). They can be differentiated from neurotic persons who exhibit mature ego boundaries and psychotic persons who exhibit more ubiquitous ego boundary disturbances.

It is important to note that, to one degree or another, all people see others through the lens of their mental representations. What defines pathology is the consistent inability to incorporate external reality into interpersonal interactions and the substantial distortion that ensues when mental representations are heavily relied upon. A tendency toward distortion has negative effects on the afflicted person's capacity to engage effectively in the world, especially in their capacity to foster satisfying interpersonal relationships.

Ego Boundary Research

Research suggests that ego boundary disturbance is a valid, measurable construct (Blatt, 2008; Blatt & Ritzler, 1974; Lerner, Sugarman, & Barbour, 1985; Rapaport et al., 1968; Wilson, 1985). In particular, Blatt posited a continuum of ego boundary development (Blatt & Ritzler,

1974) in which boundary disturbances are manifested in Rorschach responses by the following three thought disorder scores (Rapaport et al., 1968): contamination, confabulation, and fabulized combination.

Contamination responses indicate a pervasive difficulty with maintaining rudimentary boundaries between separate objects (e.g., a “mountain” and “blood” on Card VIII are fused to become “a blood mountain”; Blatt, 2008). These responses are considered indicative of self/other ego boundary disturbances, and therefore, psychosis. Confabulation responses reflect an inability to maintain boundaries between what is perceived and one’s own personal associations or affective response to the inkblot. The internal association warps and damages an otherwise reasonable response (e.g., “Two girls sitting with their legs crossed, one is possessed by the devil and the other is filled with the Holy Spirit,” on Card VII). This type of response is characteristic of an inner/outer boundary confusion typically observed in more disturbed cases of BPO. Finally, fabulized combination is scored when the response includes an unlikely or arbitrary relationship between objects simply because of spatial contiguity within the inkblot. Thus, the spatial relationship interferes with the “actual” relationship (e.g., “Two bears jumping up and down on a butterfly” on Card II). This response is thought to be associated with lax boundaries, but is considered the least severe boundary disturbance (Blatt, 2008).

Blatt and Ritzler (1974) conducted the first exploration of Blatt’s developmental continuum theory of ego boundary disturbance. They examined the Rorschach protocols of 110 inpatients from two different clinics. They used the number and type of thought disorder responses to divide the subjects into three groups by severity of ego boundary disturbance. Dependent variables included intelligence test scores, the number of human responses on the

Rorschach, reports from hospital staff, and response to treatment. They found that the severity of ego boundary disturbance was associated with each of the dependent variables, such that patients with more severe boundary disturbances: (1) exhibited greater cognitive impairments; (2) produced more distorted human representations; (3) were more likely to be thought psychotic by hospital nurses and; (4) were less responsive to psychotherapy. The researchers concluded that ego boundary disturbance is a valid way of differentiating the severity of pathology in highly disturbed patient populations.

Lerner, Sugarman, and Barbour (1985) conducted a study with 15 independently diagnosed neurotic outpatients, 15 borderline outpatients, 21 borderline inpatients, and 19 psychotic inpatients. They created the *Boundary Disturbance Scale*, which modifies the three thought disorder Rorschach scoring categories described above by weighting their severity. Differences on the *Boundary Disturbance Scale* were measured among the four subject groups. The results showed that the psychotic inpatient group exhibited greater self/other boundary disturbances as measured by contamination responses than every other group. Additionally, the inpatient borderline group evidenced greater inner/outer boundary disturbance as measured by confabulation than every other group. The confabulation responses did not differentiate between the neurotic group and the outpatient borderline group, although the trend was in the hypothesized direction.

Finally, Wilson (1985) compared the boundary disturbances of three groups of inpatients including a psychotic group of 29 subjects, a borderline group of 26 subjects, and a major depressive group of 26 subjects. The researcher used a Rorschach boundary disturbance scoring system similar to the *Boundary Disturbance Scale* to compare the three groups of subjects. He

found that the psychotic group exhibited significantly greater self/other boundary disturbances than the other groups and that the borderline group scored significantly more “contamination tendency” responses, theorized as a less severe version of an inner/outer boundary disturbance. There was no difference in the number of contamination responses between the borderline and psychotic groups.

Lexical Analysis

Given the utter ubiquity and fundamental importance of language in clinical settings, it is curious that only a limited number of studies (Rosenberg & Tucker, 1979; Tullis, 2016; West & Martindale, 1988) have examined the ability of lexical content analyses to differentiate among levels of personality organization. Lexical analysis is a particularly intriguing instrument for examining unconscious communication in psychoanalytic research because the underlying assumption is that the words we use betray something about our mental states beyond the explicit, surface-level semantics of our utterances (Spence, 1980). Spence (1980) theorized that, because the rate at which language is typically spoken exceeds the brain’s ability to consciously choose words, some piece of what the speaker communicates will remain outside of his/her conscious awareness. Thus, a close examination of spoken language has the potential to uncover unconscious dimensions of communication. The computerized lexical analysis of transcribed verbal products is a particularly apt tool for this kind of research because samples can be thoroughly analyzed for word usage, themes, and patterns that might otherwise go undetected (Tausczik & Pennebaker, 2010).

Research has validated computerized lexical and text analysis as a useful tool in the measurement of psychological states. Studies have shown that the text analysis of transcribed

verbal samples can: differentiate between psychotic and non-psychotic samples (Rosenberg & Tucker, 1979); measure object relatedness (Rosenberg, Blatt, Oxman, McHugo, & Ford, 1994); suggest the presence of a sexual abuse history (Rosenberg, Hulsey, & Rosenberg, 2000); distinguish between schizophrenia and drug-induced hallucinogenic states (Oxman, Rosenberg, Schnurr, Tucker, & Gala, 1988); assess big-five personality traits (Pennebaker & King, 1999; Mehl, Gosling, & Pennebaker, 2006); differentiate between depressed and non-depressed persons (Rude, Gortner, & Pennebaker, 2004); and predict the suicidality of poets from their published poems (Stirman & Pennebaker, 2001).

Rationale for the Study

The present study examines whether or not word choice betrays personality organization in a way that is consistent with psychoanalytic theory. The aim is to assess whether the words patients use to respond to Rorschach cards depend, at least in part, on their level of personality organization. In this way, the study is a test of both the psychoanalytic theory of personality organization and the capacity of word choice to indicate something about the structure of one's personality. Positive results would bolster the evidence base for psychoanalytic diagnostic criteria as well as support the notion that word choice betrays something implicit about personality.

The proposed study tests the ability of two text analysis dictionaries rooted in psychoanalytic theory to distinguish patients' levels of personality organization. The Rorschach is an ideal instrument for this type of study because its ambiguous stimuli elicit responses that the responder may not consciously intend. Additionally, Rorschach administration requires that responses be transcribed verbatim, which allows for a thorough analysis of subjects' verbal

communications. Quantitative computerized lexical analysis may be uniquely suited to distinguish between levels of personality organization from Rorschach responses because of the established capacity of lexical analyses to measure the latent, unconscious meanings that Rorschach cards are thought to evoke. Although lexical analyses have been successfully employed to identify psychotic versus non-psychotic patients, no published studies have yet endeavored to make the finer distinctions between neurotic/borderline patients and borderline/psychotic patients.

Hypotheses

Hypothesis 1: A one-way ANOVA will demonstrate that the degree of primary process language (as measured by the Regressive Imagery Dictionary; RID) differs among the psychotic, borderline, and neurotic groups. If the omnibus F test is significant, Tukey's honest significant difference (HSD) tests will further demonstrate that psychotic patients evidence greater primary process language than borderline patients, and that borderline patients evidence greater primary process language than neurotic patients. The null hypothesis that there are no differences between the groups will be rejected if $p < .05$.

Hypothesis 2: A one-way ANOVA will demonstrate that the degree of secondary process language (as measured by the RID) differs among the psychotic, borderline, and neurotic groups. If the omnibus F test is significant, Tukey's HSD tests will further demonstrate that neurotic patients evidence greater secondary process language than borderline patients, and that borderline patients evidence greater secondary process language than psychotic patients. The null hypothesis that there are no differences between the groups will be rejected if $p < .05$.

Hypothesis 3: A one-way ANOVA will demonstrate that the degree of boundary penetration language (as measured by the BTD) differs among the psychotic, borderline, and neurotic groups. If the omnibus F test is significant, Tukey's HSD tests will further demonstrate that psychotic patients evidence greater boundary penetration language than borderline patients, and that borderline patients evidence greater boundary penetration language than neurotic patients. The null hypothesis that there are no differences between the groups will be rejected if $p < .05$.

Hypothesis 4: A one-way ANOVA will demonstrate that the degree of boundary barrier language (as measured by the BTD) differs among the psychotic, borderline, and neurotic groups. If the omnibus F test is significant, Tukey's HSD tests will further demonstrate that neurotic patients evidence greater boundary barrier language than borderline patients, and that borderline patients evidence greater boundary barrier language than psychotic patients. The null hypothesis that there are no differences between the groups will be rejected if $p < .05$.

CHAPTER II: METHODS

Participants

Clinic and archive. Participants will consist of former patients at a university-based psychological clinic in the southeastern United States. The clinic primarily provides both psychotherapy and psychological assessments for members of the community. Psychological assessments are completed by supervised graduate students pursuing doctoral degrees in either clinical or counseling psychology. By the time they begin working in the clinic, student clinicians have received coursework and training in both diagnosis and Rorschach administration. Each psychological assessment is supervised and the resulting report is signed by a licensed clinical psychologist who works closely with the student clinician throughout the assessment process. When assessments are completed, the case files are kept in an on-site archive for seven years in accordance with guidelines set forth by the American Psychological Association (2007). The case files are comprehensive and include final assessment reports with DSM diagnoses and all raw testing materials, including verbatim transcripts of Rorschach responses.

Consent. All patients seeking services at the psychological clinic must give their informed consent for treatment and acknowledge that any data obtained during the course of psychotherapy or psychological assessments may (in de-identified form) be used for research purposes. Potential patients sign the consent paperwork before receiving services and consent is then explicitly reviewed with each patient by the intake clinician during the initial meeting.

Data Selection and Classification

Selection. The clinic archive of approximately 1800 inactive cases was comprehensively searched to select participants to include in the current study. Eligible participants met the following inclusion criteria: 1) Their file contained a complete transcript of a Rorschach administration in which all 10 cards were administered; 2) Their file contained a psychological report that included the diagnosis of a mental disorder and the signature of the supervising licensed psychologist; 3) They were between the ages of 18 and 65 years at the time the assessment was both begun and completed; 4) Their IQ, if available, was 80 or greater.

Data classification. The participants were divided into the neurotic, borderline, and psychotic groups to be used in the analyses. They were categorized based on a system advanced by Kernberg (1984; Kernberg & Caligor, 2005). He asserted that, with the exception of obsessive-compulsive personality disorder (OCPD), any DSM personality disorder is indicative of BPO. That is, any patient who exhibits a personality disorder possesses sufficient deficits in identity integration, defensive operations, and reality testing to qualify as functioning at the borderline level of personality organization. Kernberg (Kernberg & Caligor, 2005) explicitly notes that OCPD is the lone exception. He classifies it at the neurotic level of personality organization, arguing that OCPD involves higher-order defensive operations and that a punitive superego is the only significant structural impairment in an otherwise adequately integrated identity.

Bipolar disorders are also classified as indicative of BPO. This is supported by Kernberg's (1975) classification of hypomanic personalities as pre-neurotic and fortified by the notion that mania and hypomania are characterized by lower order defenses such as denial (e.g.,

Kernberg, 1975) and omnipotence (e.g., Klein, 1935). Additionally, Akhtar (1992) has asserted that hypomanic personalities exhibit immature object relations, which are also indicative of BPO (Kernberg, 1984).

Accordingly, the following classification scheme was employed: 1) The psychotic group consists of all patients diagnosed with any DSM psychotic disorder or another disorder that is accompanied by psychotic features (e.g., schizophrenia, schizoaffective disorder, major depressive disorder with psychotic features); 2) The borderline group consists of patients diagnosed with any DSM bipolar disorder (e.g., bipolar I or II disorder, cyclothymic disorder) or any DSM personality disorder, with the exception of obsessive-compulsive personality disorder; 3) Finally, the neurotic group is comprised of patients who received any other DSM diagnosis (e.g., obsessive compulsive personality disorder, major depressive disorder, generalized anxiety disorder).

Rorschach data. All Rorschach protocols were administered using Exner's *Comprehensive System* method (Exner, 2003). Using the *Comprehensive System*, a Rorschach administration consists of two phases: the response (or free association) phase and the inquiry phase. During the response phase, the examiner hands the participant each of the 10 cards one at a time and asks, "What might this be?" The participant provides as many answers as he or she likes, returns the card to the examiner, and proceeds to the next card. The evaluator provides as little direction as possible so as not to interfere with the participant's approach to the task. During the inquiry phase, the evaluator reviews each separate response the participant gave during the response phase and asks, "What about the blot made it look like that?" During this phase, the evaluator needs to gather the specific information needed to score the response. In

this phase the evaluator interacts directly with the participant, guiding their verbalizations to obtain clarity about the nature of the response. All of the participant's utterances during both phases are recorded verbatim.

The present study used only data from the response phase. This phase produces the purest sampling of the participant's unfettered associations to the inkblots. Given that the evaluator must take a more active role during the inquiry, the verbalizations produced by participants in this phase are too heavily influenced by the testing environment to effectively represent any inherent inclination toward primary versus secondary process language or ego boundary disturbance language.

Data Collection and Analysis

Graduate students and undergraduate research assistants electronically recorded transcripts of the selected Rorschach administrations using word processing software. Age, gender, IQ, and diagnosis were also recorded for each file. The electronic transcripts were then loaded into QDA Miner, a software package that permits the analysis of text documents. A software module within QDA Miner called WordStat applied the RID and BTM to the Rorschach responses, counting the rate at which words from each dictionary category appeared in each transcript. The resulting data were imported into the Statistical Package for Social Sciences (SPSS) software in order to complete the necessary analyses.

Computerized Word Dictionaries

Regressive Imagery Dictionary. The Regressive Imagery Dictionary (RID; Martindale, 1975; 1990) is a primary and secondary process word dictionary designed for the computerized content analysis of text. The 5900 words contained in the dictionary were derived from the

psychoanalytic theoretical literature. The RID contains seven categories of words titled Emotion, Secondary Process, Drives, Regressive Cognition, Defensive Symbolization, Icarian Imagery, and Sensation. The latter five categories are also combined into a composite category of general primordial mentation called Primary Process (see Table 1 in Appendix A for examples of words included in the categories).

Validity. A number of studies suggest the construct validity of the RID. These studies have examined the relationships between primary process language as defined by the RID and mental states that involve an increase in primary process mentation according to psychoanalytic theory. West and Martindale (1988) conducted a study of 54 psychiatric patients divided into three groups: 8 paranoid schizophrenic patients, 17 non-schizophrenic paranoid patients, and 29 nonpsychotic patients with either a depression or somatization disorder. Each patient was instructed to speak for several minutes on a topic of their choice. Their speech was then transcribed and analyzed using the RID. Results showed that the paranoid schizophrenic patients used significantly more primary process words than both non-schizophrenic groups. Additionally, analysis of the primary process categories included in the RID revealed that paranoid schizophrenic patients used significantly more Icarian Imagery and Sensations words.

Two case studies have examined primary process content during the course of psychotherapy. In the first, Reynes, Martindale, and Dahl (1984) analyzed the transcribed verbalizations of a patient through 25 sessions of psychoanalysis. Each session was rated by other psychoanalysts as a working session ($N=10$), a resistance session ($N=10$), or a neutral session ($N=5$). They found more primary process language in neutral sessions than in resistance sessions and more in working sessions than neutral sessions. Overall, working sessions

contained about 63 percent more primary process language than neutral and resistance sessions combined. Additionally, they found less secondary process language in working sessions than in neutral sessions and in neutral sessions than in resistance sessions.

In a second case study, Stigler and Pokorny (2001) examined 19 sessions during the treatment of a 34-year-old woman suffering from panic attacks. The therapist was psychoanalytically trained. In six sessions the therapist employed guided affective imagery and in 13 sessions no imagery exercises were used. The results showed significantly more primary process mentation and significantly less secondary process mentation in the affective imagery sessions. Additionally, there was significantly more Icarian Imagery and Defensive Symbolization words used during the guided affective imagery sessions.

Three studies have investigated the relationship between psychoactive substances and primary process mentation. In the first of these (Martindale & Fisher, 1977), one subject ingested psilocybin on four separate occasions. On each occasion, the subject was instructed to write a story before, during, and after the psilocybin-provoked hallucinogenic experience. Results showed that the stories written during the hallucinogenic experience contained more primary process language than either the stories written before or after. In a study involving the effects of marijuana (West, Martindale, Hines, & Roth, 1983), 72 subjects wrote stories in response to two TAT cards in a baseline condition. Two weeks later, the subjects were invited back to the laboratory where half of them ingested marijuana cookies and the other half ate cookies without marijuana. All subjects then responded to two different TAT cards. Whereas there were no differences between the groups at baseline, the marijuana group produced significantly more primary process content than the control group after having eaten the cookies.

A third study using the Swedish language RID (Svensson, Archer, & Norlander, 2006) found no significant differences in either primary or secondary process content between subjects who drank alcohol and a placebo group. Surprisingly, however, the researchers found a non-significant trend toward greater secondary process content among subjects who ingested the alcohol.

In a different study by the same Swedish researchers (Svensson, Archer, & Norlander, 2006), 40 subjects viewed either the beginning of an action film or a neutral film and were then instructed to write an ending. The action film group responded with significantly more primary process language than the neutral film group, yielding a very large effect size. The researchers theorized that the action film produced high levels of affect and arousal, which consequently increased primary process mentation.

West, Martindale, & Sutton-Smith (1985) examined the content of 106 children's original spoken stories. The children ranged in age from two to eleven. Consistent with psychoanalytic theory, there was a small to medium (yet statistically significant) negative correlation between primary process content and age. A final study examined the relationship between creativity and primary process mentation in 37 undergraduate males (Martindale & Dailey, 1996). A composite creativity score was calculated for each subject by standardizing their scores on three separate creativity measures. Results showed a large, significant correlation between the composite creativity scores and primary process mentation.

Body Type Dictionary. The Body Type Dictionary (BTD; Wilson, 2006) was developed on the basis of work by Fisher and Cleveland (1956; 1958), specifically their body boundary definiteness construct. It contains approximately 850 words related to boundaries or the

experience of one's own body as either permeable or impassable. As such, the words in the dictionary are divided into penetration imagery words and barrier imagery words. Body penetration is defined as the degree to which respondents feel their body boundaries are permeable and body barrier as the degree to which body boundaries are felt to be protective and impenetrable (See Table 2 in Appendix A for examples of words).

For as long as there has been a psychoanalytic theory of intrapsychic structure, the connection between body and ego has existed. In introducing his structural theory, Freud (1923/1961) states the ego is "... first and foremost a body-ego" (p. 26). That is, the ego initially arises from perceptions and feelings originating in the body. Thus, ego and the experience of one's body are inherently intertwined. Fisher and Cleveland (1958), anticipating this connection in relation to their own work, noted the overlap between their construct of body image and both the sense of self and the construct of the ego. Paralleling the theory of ego boundaries put forth by Kernberg (1975; 1984), Fisher and Cleveland (1958) theorized that greater body boundary definiteness is positively related to a coherent sense of self and indicative of lower degrees of psychopathology.

As noted above, psychoanalytic theory rests on the notion that verbal communications contain latent content, revealing our personalities and the ways in which we interpret the environment through the structure of our internal worlds. This study aims to use the BTM in a way that is consistent with this ethos. As such, barrier and penetration imagery words are taken to indicate the structure of the ego as much as corporeal makeup. Thus, barrier imagery words represent firm, intact ego boundaries and penetration imagery words represent ego boundary disturbances.

Validity. Although there has been little research using the BTM to date, early results are promising. The available research has all come from the same researcher. In one study employing literary texts, a “psychotic” text was compared with a “mystical” text (Cariola, 2012). The psychotic text contained more primary process and penetration imagery, suggesting that severe psychopathology produces greater primary process mentation and body boundary permeability than mystical experiences. In another study using an online survey program, the same author (Cariola, 2014c) asked 62 subjects to write two narratives, one about an everyday experience and another about a recent dream. Results showed that the dream narratives contained more primary process and less barrier imagery than everyday memories. Additionally, those with low boundary barrier scores (i.e., healthy or “normal” subjects) evidenced more secondary process content. In yet another study, Cariola (2013) found that primary process mentation was positively correlated with both barrier and penetration imagery on a picture response test, everyday narratives, and in dream narratives. The study confirmed that both high barrier and high penetration imagery are related to primary process mentation and might, therefore, be related to psychopathology.

Additionally, a series of studies involving person-centered psychotherapy transcripts found that the degree to which patients use barrier imagery language shifts over the course of therapy (Cariola, 2014b; 2015). Patients categorized as “high” in their use of barrier words early in therapy used less barrier imagery later in treatment. Others, categorized as “low barrier” early in therapy, used more barrier imagery later in therapy.

CHAPTER III: RESULTS

There were approximately 1800 patient charts in the clinic archive. All had been closed between the 2009 and 2016. Of these 1800 charts, 140 met the inclusion criteria for the current study. Of the 140, 90 patients had diagnoses indicating neurotic personality organization, 35 had diagnoses consistent with borderline personality organization, and 5 had diagnoses characteristic of psychotic personality organization. Please see Table 3 in Appendix for DSM diagnoses and personality organization categorizations for each subject. Of the 140 subjects included in the study, 78 identified as male and 62 as female. Ages ranged from 18 to 63 years ($M = 32.36$) and IQ ranged from 80 to 150 ($M = 102.50$). The number of Rorschach responses per subject ranged from 14 (the minimum to qualify the administration as valid) to 65 ($M = 22.10$).

Levene's test revealed that the variances for all language samples were homogeneous across levels of personality organization. Shapiro-Wilk normality tests confirmed that primary and secondary process language were normally distributed across levels of personality organization. However, the distributions of barrier and penetration language were found to be non-normal. Each exhibited a skew to the right. Given the robustness of ANOVA to violations of the assumption of normal distribution (Schmider, Ziegler, Danay, Beyer, & Bühner, 2010), ANOVAs were employed as planned.

Hypothesis 1: I hypothesized that patients classified as psychotic would evidence greater primary process language than patients classified as borderline and that patients classified as borderline would exhibit greater primary process language than patients classified as neurotic ($P > B > N$). A one-way ANOVA revealed no significant differences in the percentage of primary process word usage among the psychotic group ($M = 14.62$, $SD = 3.97$), the borderline group (M

= 17.81, $SD = 4.36$) and the neurotic group ($M = 18.20$, $SD = 4.12$); $F(2, 137) = 1.77$, $p = .18$.

Furthermore, the observed differences in means were opposite the predicted direction. The effect size observed for this analysis was small-medium; $\eta^2 = .03$ (Cohen, 1988). Means and standard deviations are reported as the number of categorized words per 100 total words. Please see Table 4 in the Appendix for a summary of means and standard deviations for each comparison group in each analysis. See Table 5 for a summary of ANOVA results for all hypotheses.

Hypothesis 2: I hypothesized that patients classified as neurotic would evidence greater secondary process language than patients classified as borderline and that patients classified as borderline would exhibit greater secondary process language than patients classified as psychotic ($N > B > P$). A one-way ANOVA found no significant differences in the percentage of secondary process language usage among the psychotic group ($M = 5.54$, $SD = 1.61$), the borderline group ($M = 4.61$, $SD = 1.78$) and the neurotic group ($M = 4.62$, $SD = 2.12$); $F(2, 137) = .51$, $p = .60$. The effect size for this comparison was small; $\eta^2 = .01$ (Cohen, 1988). The psychotic group exhibited more secondary process language than either the neurotic or borderline groups, which is the opposite of what I predicted. The borderline and neurotic groups had nearly identical means.

Hypothesis 3: I hypothesized that patients classified as psychotic would evidence greater boundary penetration language than patients classified as borderline and that patients classified as borderline would exhibit greater boundary penetration language than patients classified as neurotic ($P > B > N$). A one-way ANOVA indicated no significant differences in the percentage of boundary penetration language usage among the psychotic group ($M = .50$, $SD = .57$), the

borderline group ($M = .60, SD = .80$), and the neurotic group ($M = .62, SD = .64$); $F(2, 137) = .08, p = .92$. The effect size for this comparison was small; $\eta^2 < .01$ (Cohen, 1988). The observed differences in means were opposite the predicted direction.

Hypothesis 4: I hypothesized that patients classified as neurotic would evidence greater boundary barrier language than patients classified as borderline and that patients classified as borderline would exhibit greater boundary barrier language than patients classified as psychotic ($N > B > P$). A one-way ANOVA indicated no significant differences in the percentage of boundary barrier language usage among the psychotic group ($M = .94, SD = .71$), the borderline group ($M = 1.39, SD = 1.07$) and the neurotic group ($M = 1.39, SD = 1.24$); $F(2, 137) = .35, p = .70$. The effect size observed for this comparison was small; $\eta^2 = .01$ (Cohen, 1988). As predicted, the psychotic group produced fewer boundary barrier words than either the borderline or neurotic groups. However, the neurotic and borderline groups shared the same mean.

Post-hoc Exploratory Analyses

Given the lack of significant findings, I theorized post-hoc that there might be meaningful interactions between personality organization and different levels of each language variable. Thus, four, two-way multivariate analyses of variance (MANOVA) were conducted to determine whether different levels of each individual language variable interacted with level of personality organization to have an effect on the other language variables. To accomplish this, all four language variables were divided into tertiles with equal numbers of subjects. The tertiles were designated as high, medium, and low. For example, subjects categorized as “high primary process” had primary process usage rates in the top one third of all subjects.

For each of the four analyses, a different language variable category was included in the model as an independent variable, along with level of personality organization. The three remaining language variables were added to the model as dependent variables in their original, continuous form. For example, the first analysis tested whether secondary process, boundary penetration, and boundary barrier words differed by level of personality organization at low, medium, and high levels of primary process language.

There were no statistically significant interactions. There was no significant interaction between level of personality organization and level of primary process language on combined secondary process, boundary penetration, and boundary barrier language, $F(12, 341.59) = .70, p = .75$; Wilks' $\Lambda = .94$. The effect size was small (Cohen, 1988); $\eta^2_p = .02$. Nor was there a significant interaction between level of personality organization and level of secondary process language on combined primary process, boundary penetration, and boundary barrier language, $F(12, 341.59) = .95, p = .50$; Wilks' $\Lambda = .92$. The effect size was small-medium (Cohen, 1988); $\eta^2_p = .03$. There was also no significant interaction between level of personality organization and level of boundary penetration language on combined primary process, secondary process, and boundary barrier language, $F(12, 341.59) = .56, p = .88$; Wilks' $\Lambda = .95$. The effect size was small (Cohen, 1988); $\eta^2_p = .02$. Finally, there was no significant interaction between level of personality organization and level of boundary barrier language on combined primary process, secondary process, and boundary penetration language, $F(12, 341.59) = .80, p = .65$; Wilks' $\Lambda = .93$. The effect size was small (Cohen, 1988); $\eta^2_p = .02$. See Table 6 in the Appendix for summary of exploratory analysis results.

CHAPTER IV: DISCUSSION

In the present study, I sought to determine whether the words that participants used during a Rorschach administration could identify their level of personality organization as categorized by psychoanalytic theory. In order to answer this question, two word dictionaries influenced by psychoanalytic theory were applied to verbatim transcripts of the Rorschach response phase of 140 subjects. Participants were divided into neurotic, borderline, and psychotic groups according to their DSM diagnoses. I hypothesized that, in accordance with psychoanalytic theory, participants at different levels of personality organization would differ in the extent they used primary process words ($P > B > N$), secondary process words ($N > B > P$), boundary penetration words ($P > B > N$), and boundary barrier words ($N > B > P$). However, there were no significant differences among the neurotic, borderline, and psychotic groups on any of the four categories (primary process, secondary process, ego boundary penetration, ego boundary barrier). Further, post-hoc exploratory analyses revealed no significant interactions between personality organization and different levels of each language variable on the remaining language variables.

Power

An accurate appraisal of these findings necessitates a discussion of statistical power. There are two broad ways to view the results of the study. First, the results might represent an appropriate retention of all null hypotheses. In this view, the results accurately reflect the absence of any real effects. On the other hand, it is *possible* that there is a real effect and that the study did not have the power to detect it. Before proceeding, it is important here to caution readers that the present discussion of power is not a means of excusing the null findings by

suggesting the current study simply failed to observe a real effect due to insufficient power.

Rather, it is intended as a realistic assessment of the strengths and weaknesses of the study.

The statistical power of the current research was adversely affected by the small number of participants in the psychotic group ($N = 5$). Previous studies involving the RID have produced an average medium effect size. If we assume there *is* a real effect of personality organization on the use of primary and secondary process language and that the effect is medium, then the power of the current study to detect differences between the undersized psychotic group and the other two groups is between .18 and .19. For comparison, the power of the current study to detect a medium effect between the larger neurotic ($N = 90$) and borderline ($N = 45$) groups is .78. Power is even more adversely affected if the real effect size is small. The power of the current study to detect a small effect in comparisons involving the psychotic group is .07. In contrast, the power to detect a small effect between the neurotic and borderline groups is .19. Therefore, analyses involving the psychotic group were grossly underpowered by conventional standards (Cohen, 1988). A larger psychotic group would be needed in order to draw conclusions about the relationships between psychotic/neurotic organization and psychotic/borderline organization with more certainty.

The Use of the Rorschach

What is perhaps most notable about the results is the remarkably similar rate at which the neurotic, borderline, and psychotic groups used words from each of the four word categories. One possible reason for this is the nature of the cognitive processes used to generate responses to the Rorschach. Only one previous study used the RID and/or the BTD with Rorschach cards (Cariola, 2014a). This study did not examine differences in character or mentation based on RID

and BTB data. Indeed, the vast majority of previous RID and BTB studies have used sample communications produced by subjects as a part of psychotherapy (Reynes, Martindale, & Dale, 1984; Stigler & Pokorny, 2001), speaking about any topic of the subject's choice (West & Martindale, 1988), telling impromptu stories (Martindale & Fisher, 1977; West, Martindale, & Sutton-Smith, 1985), telling stories based on stimuli, such as TAT cards, films, or dreams (Cariola, 2014c; Svensson, Archer, & Norlander, 2006; West, Martindale, Hines, & Roth, 1983), and previously prepared texts (Cariola, 2012).

There is something fundamentally different about responding to the Rorschach than the above methods of obtaining speech samples from subjects. The difference can be distilled to the mental act required to respond: classification versus imaginative elaboration. The above methods of procuring verbal samples require imaginative elaboration. Telling a story based on a TAT card or speaking about a topic of one's own choice is a more purely creative act than making sense of an ambiguous visual stimulus. Exner (1989) and others (Acklin & Wu-Holt, 1995) have emphasized that responding to the question "*What might this be?*" requires the mental act of classification. Rorschach responders must examine the blot, classify the blot into potential answers, and then verbally report a response. The Rorschach directs, and therefore limits, the subject's verbalizations more than the aforementioned methods of obtaining verbal samples by elaboration. Imaginative elaboration *can* occur, however, subjects must take it upon themselves to respond in such a creative manner. It is not *required*.

It is possible that the constraint of classification, especially in reference to the standardized blots of the Rorschach, leads to the use of certain words or categories of words on each card regardless of the subject's level of personality organization, proclivity for primary

versus secondary process mentation, or ego boundary coherence. Thus, the Rorschach's utility in research utilizing word-count methodologies may be limited. What enables the *Comprehensive System* (Exner, 2003) or *R-PAS* (Meyer, Viglione, Mihura, Erard, & Erdberg, 2011) to make distinctions in personality organization is not the subjects' particular word choice, but rather the systematic analysis of whole responses, including detailed information concerning what it is about the quality of the inkblot that inspired the response.

Limitations of the Present Study

There are a few important limitations to the current study. First, the categorization of subjects into neurotic, borderline, and psychotic personality organization is based primarily on Kernberg's (Kernberg & Caligor, 2005) model, which purports to translate DSM diagnoses into psychoanalytic diagnoses. The model rests on the notion that if a person's personality style is sufficiently maladaptive to warrant the DSM diagnosis of a personality disorder, then the person's identity integration, defensive style, and reality testing suggest either borderline or psychotic personality organization. Although there have been some studies establishing the validity of this model (Fischer-Kern et al., 2010; Lowyck, Luyten, Verhaest, Vandeneede, & Vermote, 2013; Preti et al., 2015), research regarding the precise relationship between DSM diagnoses and personality organization is limited.

Second, there is a limited body of research on the Body Type Dictionary. While early research has demonstrated its validity, it is not yet a well-established measure. Had positive results been obtained in the current study, its construct validity would have been strengthened by way of its relationship to psychoanalytic diagnostic theory.

Finally, a comprehensive review of the clinic archives resulted in only five Rorschach protocols administered to persons with diagnoses consistent with psychotic personality organization. Thus, comparisons involving the psychotic group involved considerably less statistical power than comparisons between the neurotic and borderline groups. While the finer clinical differential involves neurotic versus borderline personality organization, a more robust group of participants in the psychotic range of functioning would have more definitively revealed whether or not word counts could distinguish between the Rorschach responses of the vastly different neurotic and psychotic personality organizations.

Directions for Future Research

First, additional word frequency analyses are likely to be more illuminating if subjects are asked to free associate or otherwise engage in imaginative elaboration (e.g., exploratory psychotherapy or telling a story based on a Rorschach card) rather than undertake a more guided task, such as classifying ambiguous stimuli. By directing subjects' verbalizations as little as possible, researchers can say with more certainty that the speech produced is representative of the subject's intrapsychic structure and processes rather than the cognitive activity imposed by the task.

Additionally, future research regarding personality organization should employ instruments specifically designed to measure personality organization, such as the STIPO (Stern et al., 2010). As noted above, there is limited research to complement the idea of congruence between certain DSM diagnoses and different levels of personality organization. Until more research exists, making such conversions remains risky. Researchers will be able to assign

psychoanalytic diagnoses with greater confidence by using measures designed to assess personality organization directly.

Similarly, more research is needed to establish the validity of the BTM. Future research might employ the BTM in conjunction with therapy transcripts, dream reports, or other speech produced with limited direction from researchers. Data from the BTM could then be compared with more established measurements of ego boundary coherence (for established measurement on the Rorschach, see Blatt & Ritzler, 1974; Lerner, Sugarman, & Barbour, 1985; Rapaport et al., 1968; and Wilson, 1985).

Further lexical analyses might focus on syntax rather than word count. Whereas thematic word counts rely strictly on the presence or absence of many single words, a syntactic analysis can account for the meanings of whole phrases and sentences. As such, the context in which a given word appears can be assessed. A syntactical analysis might also have the capacity to assess the underlying cognitive processes that produce words. These processes are likely to be better indicators of personality functioning than simple word choice.

Finally, research involving a larger psychotic sample would provide further information about the capacity of lexical analyses to broadly distinguish neurotic or “healthy” subjects from more disturbed subjects. For example, even if the findings from the current study regarding the distinction between neurotic and borderline organizations hold, it is nevertheless of interest if lexical analyses can detect the starker differences between neurotic and psychotic organizations.

CHAPTER V: CONCLUSION

The current study examined whether personality organization can be determined through word usage in a way that is consistent with psychoanalytic theory. This involved an analysis of the archived Rorschach protocols of patients with differing personality organizations using word dictionaries influenced by psychoanalytic theory. Consistent with psychoanalytic theory, it was hypothesized that: 1) The use of words associated with primary process mentation and ego boundary penetration would increase from neurotic to borderline to psychotic personality organizations; and 2) The use of words associated with secondary process mentation and ego boundary barriers would decrease from neurotic to borderline to psychotic personality organization. None of the hypotheses were confirmed. Instead, the data suggest that persons with neurotic, borderline, and psychotic personality organization use language associated with primary process, secondary process, ego boundary penetration, and ego boundary barriers at a similar rate when responding to Rorschach cards. One possible reason for this is that the demand characteristics of Rorschach stimuli and administration both limit elaboration and pull for similar word choices regardless of personality organization. Given these demands, word choice alone might be insufficient to distinguish among levels of personality organization, especially without the meaning gleaned from the context in which they are used. Further research will be necessary to understand the capabilities and limitations of lexical analyses to distinguish among levels of personality organization.

Finally, there remains the possibility that primary process, secondary process, ego boundary integrity, and psychoanalytic theories of personality organization are either flawed or incompatible with one another. The results of this study suggest that the differences between

neurotic and borderline personality subjects are minute. Although the psychotic group differed from the other two groups, it trended in directions inconsistent with psychoanalytic diagnostic theory on three of the four measured constructs. Some psychoanalytic writers (e.g., Luyten, 2015) have pointed out that the empirical status of many important psychoanalytic ideas remains in doubt. Luyten argues that psychoanalytic researchers and practitioners ought to embrace the challenge of verifying these ideas and retain the capacity to playfully reshape them when necessary. In this spirit, I conclude by noting the possibility that further shifts in theory might be required to accommodate the results of studies such as this one.

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APPENDIX

Table 1.
Sample Words from Regressive Imagery Dictionary Categories.

RID Category	Sample Words
Primary Process	
Drive	
Oral	breast, drink, mouth
Anal	sweat, rot, filth
Sex	lover, kiss, Venus
Regressive Cognition	
Unknown	secret, strange, void
Timelessness	eternal, immortal endless
Consciousness	dream, sleep, awake
Brink-Passage	road, wall, path
Narcissism (body parts)	eye, hand, face
Concreteness (spatial)	at, where, over
Defensive Symbolization	
Passivity	death, lie, calm
Voyage	wander, search, ship
Random Movement	wave, spread, shake
Diffusion	shade, cloud, veil
Chaos	wild, crowd, confuse
Sensation	
General Sensation	charm, fair, lovely
Touch	touch, rough, smooth
Taste	sweet, bitter, savor
Odor	perfume, breath, smell
Sound	voice, ear, listen
Vision	shine, light, see
Cold	snow, cold, winter
Hard	iron, rock, stone
Soft	gentle, tender, whisper
Icarian Imagery	
Ascend	fly, throw, rise
Height	sky, tree, grow
Descend	plunge, fall, drop
Depth	beneath, under, down
Fire	flame, warm, sun
Water	stream, flow, sea
Secondary Process	
Abstraction	know, thought, why
Social Behavior	tell, call, meet
Instrumental Behavior	make, work, build
Restraint	guard, bind, must
Order	simple, balance, measure
Temporal References	when, now, old
Moral Imperatives	should, virtue, law

Table 2.
Sample Words from Body Type Dictionary Categories.

BTD Category	Sample Words
Barrier	
Container	backpack, trunk, wallet
Enclosed openings in earth	crater, cave, lake
Protective surface	armor, roof, coast
Covered, hidden, etc.	buried, surround, hide
Special structures	fortress, crypt, automobile
Shell animal	turtle, shrimp, clam
Penetration	at, where, over
Entrance and openings	gates, abyss, windows
Permeable	fragile, leak, shadow
Body orifices and use	eat, ass, vomit
Autopsy etc.	autopsy, ultrasound, x-ray
Wounds and deformity	scars, damage, abcess
Spurt and excrete	piss, bleed, cough
Transparency	clarity, crystal, see-through

Table 3.
DSM Diagnoses and Personality Organization Categorizations.

Personality Organization	DSM Diagnosis
Borderline	Avoidant Personality Disorder
Borderline	Avoidant Personality Disorder and Social Anxiety Disorder
Borderline	Bipolar Disorder NOS
Borderline	Bipolar I Disorder
Borderline	Bipolar I Disorder
Borderline	Bipolar I Disorder
Borderline	Bipolar I Disorder
Borderline	Bipolar I Disorder
Borderline	Bipolar I Disorder and Posttraumatic Stress Disorder
Borderline	Bipolar II Disorder
Borderline	Bipolar II Disorder and Narcissistic Personality Disorder
Borderline	Borderline Personality Disorder
Borderline	Borderline Personality Disorder
Borderline	Borderline Personality Disorder
Borderline	Borderline Personality Disorder
Borderline	Dependent Personality Disorder
Borderline	Histrionic Personality Disorder
Borderline	Narcissistic Personality Disorder
Borderline	Narcissistic Personality Disorder
Borderline	Narcissistic Personality Disorder and Cyclothymic Disorder
Borderline	Other Specified Personality Disorder with Narcissistic and Antisocial Features
Borderline	Other Specified Personality Disorder with Schizoid Features
Borderline	Paranoid Personality Disorder
Borderline	Paranoid Personality Disorder
Borderline	Paranoid Personality Disorder
Borderline	Paranoid Personality Disorder
Borderline	Personality Disorder NOS
Borderline	Personality Disorder NOS
Borderline	Personality Disorder NOS with Borderline Features and Posttraumatic Stress Disorder
Borderline	Personality Disorder NOS with Dependent and Avoidant features
Borderline	Personality Disorder NOS with Dependent and Narcissistic Features
Borderline	Personality Disorder NOS with Dependent Features
Borderline	Personality Disorder NOS with Depressive Traits and Major Depressive Disorder
Borderline	Personality Disorder NOS with Narcissistic and Antisocial Features
Borderline	Personality Disorder NOS with Narcissistic and Borderline Features
Borderline	Personality Disorder NOS with Narcissistic and Histrionic Features

Table 3. Continued.

Personality Organization	DSM Diagnosis
Borderline	Personality Disorder NOS with Narcissistic Features
Borderline	Personality Disorder NOS with Narcissistic Features
Borderline	Personality Disorder NOS with Narcissistic Features
Borderline	Personality Disorder NOS with Paranoid Features
Borderline	Personality Disorder with Narcissistic Features
Borderline	Schizoid Personality Disorder
Borderline	Schizoid Personality Disorder
Borderline	Schizotypal Personality Disorder
Borderline	Schizotypal Personality Disorder
Neurotic	Adjustment Disorder
Neurotic	Adjustment Disorder NOS
Neurotic	Adjustment Disorder with Depressed and Anxious Features
Neurotic	Adjustment Disorder with Depressed and Anxious Features
Neurotic	Adjustment Disorder with Depressed and Anxious Features
Neurotic	Adjustment Disorder with Depressed Mood
Neurotic	Adjustment Disorder with Depressed Mood
Neurotic	Adjustment Disorder with Depressed Mood
Neurotic	Adjustment Disorder with Depressed Mood
Neurotic	Adjustment Disorder with Depressed Mood and Attention Deficit Hyperactivity Disorder
Neurotic	Anxiety Disorder NOS
Neurotic	Anxiety Disorder NOS
Neurotic	Anxiety Disorder NOS
Neurotic	Anxiety Disorder NOS and Major Depressive Disorder
Neurotic	Attention Deficit Hyperactivity Disorder
Neurotic	Attention Deficit Hyperactivity Disorder
Neurotic	Attention Deficit Hyperactivity Disorder
Neurotic	Attention Deficit Hyperactivity Disorder and Generalized Anxiety Disorder
Neurotic	Attention Deficit Hyperactivity Disorder Combined
Neurotic	Attention Deficit Hyperactivity Disorder, Depressive Disorder NOS, Generalized Anxiety Disorder, and Opioid Dependence
Neurotic	Autism Spectrum Disorder
Neurotic	Cocaine Abuse
Neurotic	Depressive Disorder
Neurotic	Depressive Disorder NOS
Neurotic	Depressive Disorder NOS
Neurotic	Depressive Disorder NOS
Neurotic	Depressive Disorder NOS
Neurotic	Dysthymic Disorder

Table 3. Continued.

Personality Organization	DSM Diagnosis
Neurotic	Dysthymic Disorder
Neurotic	Dysthymic Disorder and Social Anxiety Disorder
Neurotic	Dysthymic Disorder, Generalized Anxiety Disorder, and Social Anxiety Disorder
Neurotic	Generalized Anxiety Disorder and Attention Deficit Hyperactivity Disorder
Neurotic	Generalized Anxiety Disorder and Attention Deficit Hyperactivity Disorder
Neurotic	Generalized Anxiety Disorder and Mood Disorder NOS
Neurotic	Generalized Anxiety Disorder, Social Anxiety Disorder, and Dysthymia
Neurotic	Learning Disorder NOS
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
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Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder
Neurotic	Major Depressive Disorder and Anxiety NOS
Neurotic	Major Depressive Disorder and Generalized Anxiety Disorder
Neurotic	Major Depressive Disorder and Generalized Anxiety Disorder
Neurotic	Major Depressive Disorder and Generalized Anxiety Disorder
Neurotic	Major Depressive Disorder and Generalized Anxiety Disorder
Neurotic	Major Depressive Disorder and Social Anxiety Disorder
Neurotic	Major Depressive Disorder and Social Phobia
Neurotic	Major Depressive Disorder, Generalized Anxiety Disorder, and Social Anxiety Disorder
Neurotic	Mood Disorder due to Chronic Pain and Adjustment Disorder with Mixed Depressive and Anxious Features
Neurotic	Mood Disorder NOS

Table 3. Continued.

Personality Organization	DSM Diagnosis
Neurotic	Mood Disorder NOS
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	None
Neurotic	Obsessive Compulsive Personality Disorder
Neurotic	Obsessive Compulsive Personality Disorder and Generalized Anxiety Disorder
Neurotic	Obsessive Compulsive Personality Disorder, Major Depressive Disorder, and Posttraumatic Stress Disorder
Neurotic	Panic Disorder and Depressive Disorder NOS
Neurotic	Posttraumatic Stress Disorder and Major Depressive Disorder
Neurotic	Social Anxiety Disorder
Neurotic	Social Phobia
Neurotic	Social Phobia and Generalized Anxiety Disorder
Psychotic	Bipolar I Disorder with Psychotic Features
Psychotic	Delusional Disorder
Psychotic	Major Depressive Disorder with Psychotic Features
Psychotic	Schizoaffective Disorder
Psychotic	Schizoaffective Disorder - Bipolar Type, and Borderline Personality Disorder

Table 4.

Means and Standard Deviations for Language Usage Rate Across Personality Organization.

	Primary Process		Secondary Process		Boundary Penetration		Boundary Barrier	
	M	SD	M	SD	M	SD	M	SD
Neurotic	18.20	4.12	4.62	2.12	0.62	0.64	1.39	1.24
Borderline	17.81	4.36	4.61	1.78	0.60	0.80	1.39	1.07
Psychotic	14.62	3.97	5.54	1.61	0.50	0.57	0.94	0.71

Note. Data presented as rate per 100 words.

Table 5.
One-Way ANOVAs of Language by Personality Organization.

		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	η^2
Primary	Between Groups	0.01	2	0.003	1.77	0.18	0.03
	Within Groups	0.24	137	0.002			
	Total	0.25	139				
Secondary	Between Groups	0.00	2	0.000	0.51	0.60	0.01
	Within Groups	0.05	137	0.000			
	Total	0.05	139				
Penetration	Between Groups	0.00	2	0.000	0.08	0.92	<0.01
	Within Groups	0.01	137	0.000			
	Total	0.01	139				
Barrier	Between Groups	0.00	2	0.000	0.35	0.70	0.01
	Within Groups	0.02	137	0.000			
	Total	0.02	139				

Note. No significant effects observed.

Table 6.
Post-Hoc Exploratory Two-Way MANOVA Interactions.

Independent Variables	Dependent Variables	Wilks' Λ	F	df	Error df	p	η^2_p
Character* Primary	Secondary Penetration Barrier	0.94	0.70	12	341.59	0.75	0.02
Character* Secondary	Primary Penetration Barrier	0.92	0.95	12	341.59	0.50	0.03
Character* Penetration	Primary Secondary Barrier	0.95	0.56	12	341.59	0.86	0.02
Character* Barrier	Primary Secondary Barrier	0.93	0.80	12	341.59	0.65	0.02

Note. Character = neurotic, borderline, and psychotic; Levels of primary, secondary, penetration and barrier language as independent variables = high, medium, and low. No significant interactions observed.

VITA

Gyrid Lyon was born in Chicago, Illinois to Mary Natali and Bernie Lyon. He has a younger brother, Anders. He grew up in Indianapolis, Indiana and attended Broad Ripple High School. After graduation, he moved to Bloomington, Indiana where he studied at Indiana University, graduating with a Bachelor of Arts degree in Telecommunications in 2004. After earning his BA, he returned to Indianapolis and worked at several excellent restaurants while considering which of his passions to pursue. In the autumn of 2012, Gyrid began his graduate work at The University of Tennessee, where he worked with Dr. Michael Nash. He is interested in psychodynamic therapy and theory. He is currently a predoctoral intern at Pennsylvania Hospital, University of Pennsylvania Health System. He lives in Philadelphia, Pennsylvania with his wife, Amanda Bennington, and his step-son, Preston Bennington.