

INTERPERSONAL PROCESS AND BORDERLINE PERSONALITY

A Dissertation

by

CHRISTOPHER J. HOPWOOD

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2008

Major Subject: Psychology

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ABSTRACT

Interpersonal Process and Borderline Personality. (August, 2008)

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Although borderline personality is characterized by a variety of interpersonal antecedents and consequences, interpersonal theory has yet to develop an adequate model of the disorder. It was hypothesized that considerations of non-interpersonal features that influence interpersonal behavior can inform the description of the interpersonal process associated with borderline personality. Specifically, it was proposed that borderline personality is not adequately conceptualized as characterized by rigid and extreme traits. Instead identity diffusion, or under-developed personality organization, characterizes the disorder, as do notable problems with perception and behavioral impulsivity. Three samples of dyads interacting in a collaborative task were compared using structural equation models of their traits and situational behavior from the perspectives of multiple raters. Two samples included dyads without a borderline interactant and one dyad had one person with and another without borderline personality features. It was hypothesized that dyads including borderline participants would manifest behavior that deviates from normative interpersonal processes.

Results were consistent with hypotheses in suggesting that dyads without an individual who has borderline characteristics demonstrate very similar interpersonal patterns, whereas dyads with a borderline interactant deviate from normative interpersonal process. Specifically, borderline individuals appear to be hyper-perceptive of others' efforts to control (dominate or submit to) them. With regard to affiliation (warmth vs. coldness), borderline individuals appear to have very different perceptions of their own interpersonal style than do individuals who know them, and unlike non-borderline individuals, these styles exert minimal influence on their behavior in interpersonal situations. These results suggest practical implications that vary across

interpersonal dimensions. Data imply that clinicians should take seriously suggestions by borderline patients that they feel controlled. With regard to affiliation, data are consistent with the theory of identity diffusion in suggesting that borderline personality features are associated with a lack of stable interpersonal traits that influence behavior across situations, and the development of such a style is an important therapeutic target.

DEDICATION

To the shower

ACKNOWLEDGEMENTS

A number of people helped me complete this project. I borrowed the experimental method from Pam Sadler, who also graciously provided her data and ongoing consultation throughout the study. I am grateful to thousands of anonymous participants and to the TAMU Psychology and Educational Psychology faculty and graduate students who are too many to name but have been valuable as my teachers, supervisors, friends, and colleagues. This project would not have been completed without the help of my lab mate Sara Lowmaster and students Rebecca DeMoor and Elizabeth Koonce. Other students, including Aaron Boyce, Brendan Dempster, Danny Hajovsky, Becky Thompson, and Christy Talbert also played instrumental roles in data collection. My lab mate Suman Ambwani has been a reliable source of positive affect throughout my time at TAMU. I have also learned a lot from and appreciate having encountered many students, clients, and patients.

More broadly, I am thankful to Harry Stack Sullivan, Timothy Leary, Jerry Wiggins, Aaron Pincus, Len Horowitz, and Otto Kernberg for developing the theoretical background for this study. I owe my advisors, who have included Bert Karon, David Richard, and Mark Blais, as well as many collaborators, for their direct and indirect contributions to my becoming a psychologist. I am honored and grateful to have Doug Snyder, Steve Rholes, and Vic Willson serve on my dissertation committee. I am also grateful to the NIMH for funding this research, as well as several other agencies and individuals including the TAMU Office of Graduate Studies, College of Liberal Arts, Department of Psychology, and Clinical Psychology Area, Phil Gramm, the Society for Personality Assessment, and the Society for Interpersonal Theory and Research.

A wider net of gratitude still covers my family and friends. Emily and Sullivan are the most important people in my life. Emily has sacrificed more than I could ever repay so that I could finish my training. Sullivan has changed everything. These two people are the reason that I get up in the morning and that I always look forward to coming home. I have acquired, in varying degrees, one grandmother's humor and the other's strength, my grandfather's will, my father's work ethic, one mother's sensitivity and the other's pragmatism. What I am reflects some combination of these influences,

and each of these people has continued to support me and to motivate me to finish with regular, if implicit, reminders that a person my age should have a job. Chums have always played a central role in my psychological health; these have included, among others, Sam, Alison, Paul, Shawn, Rudy, Mike, Suzannah, Justin, Adrienne, Kelli, Duke, Cedes, Trotsky, and Stalin.

Only one person merits their own paragraph of acknowledgement for their contribution to my professional training and personal development. Les has been just the right kind of mentor for me: I simultaneously awe and identify with him. I am immeasurably grateful to him for his role as my principal collaborator on this and other studies and for being my teacher, advisor, consultant, touch(s)tone, and friend.

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1. INTRODUCTION

Borderline personality disorder (BPD; American Psychiatric Association, 1994) is one of the most severe psychiatric disorders in terms of treatment outcome (McGlashan, 1986; Stevenson & Meares, 1992; Stone, 1996; Zanarini, Chauncey, Grady, & Gunderson, 1991) and dysfunction (Ghandi et al., 2001; Guthrie et al., 2001; Perry, Lavori, & Hoke, 1987). Large percentages of clinical populations are borderline (outpatient, 11%; inpatient, 19%; personality disorder 30-60%; Widiger & Trull, 1993), and individuals with BPD tend to have more extensive treatment histories than individuals with any other Axis II disorder (Bender et al., 2001; Zanarini, Frankenburg, Gagan, & Bleichmar, 2001).

BPD symptoms are primarily interpersonal (e.g., sensitivity to abandonment, maladaptive relationships; Horowitz, 2004), and those that are not are often secondary to negative interpersonal transactions (e.g., impulsive self-harm reactive to interpersonal disappointment; Linehan et al., 1987). Interpersonal problems are thought to play an important role in the etiology (Zanarini et al., 1989) and maintenance (Benjamin, 1996) of BPD, as well as its treatment difficulty (Clarkin, Yeomans, & Kernberg, 1999; Linehan, 1993). Individuals with BPD tend to terminate therapy prematurely (Gunderson et al., 1989), often because of relational issues with the therapist. Treating BPD individuals is often difficult for therapists because of interpersonal dynamics characteristic of the disorder. Major psychosocial treatment approaches to BPD thus share an interpersonal emphasis, with careful attention paid to the therapeutic relationship and the meaning of current and past relationships (e.g., Bateman & Fonagy, 2006; Benjamin, 1996; Clarkin, Yeomans, & Kernberg, 1999; Linehan, 1993).

A clearer theoretical articulation of the mechanisms associated with BPD could lead to more effective treatments. Given the importance of interpersonal dynamics with regard to BPD, interpersonal theory is a natural system for the provision of such a

conceptualization. Interpersonal theories of personality disorders are well-represented in personality disorder research (Lenzenweger & Clarkin, 2005) and the interpersonal approach has several advantages over other theories of personality disorders (McLemore & Brokaw, 1987). It is embedded in a thorough and testable theory of development (Benjamin, 1996; Pincus, 2005a, 2005b) that provides a structure within which to form hypotheses about the genesis and maintenance of maladaptive behaviors in individual cases and diagnostic groups. It has demonstrated systematic relations to a variety of other approaches to personality, and can thus serve as an integrative model for a variety of theories (Bartholomew & Horowitz, 1991; Hofstee, de Raad, & Goldberg, 1992; Horowitz, 2004; Trapnell & Wiggins, 1990; Gurtman, 1992). It accounts for both situational behavior and traits across levels of inference ranging from unconscious wish to overt behavior, making it a highly flexible measurement and conceptual model. Because it describes both normal and abnormal personality, it is useful for the integration of diagnosis and treatment implications (Pincus, 2005a). Interpersonal models of personality disorders would be anticipated to be particularly relevant for BPD because of its significant interpersonal component. However, interpersonal theory has not adequately described borderline personality (Hopwood & Morey, 2007), perhaps because of limitations in articulating extra-interpersonal factors that influence borderline interpersonal behavior.

Kernberg's (1975, 1976, 1984) psychoanalytic approach may be helpful in describing such factors. His theory integrates drive and object relations perspectives in that it focuses on the emotional experiences linked, developmentally and phenomenologically, to present and past interpersonal situations (Kernberg, 1976). From this perspective, the term borderline represents a level of personality organization that is descriptive of several personality disorders, including BPD. Borderline personality organization reflects the traditional placement of the term borderline as reflecting the border between the neurotic and psychotic levels of functioning (Stern, 1938). Each of these levels are defined with regards to three characteristics: identity, reality testing, and level of defensive functioning. Whereas neurotic individuals have fairly stable identities,

are in full contact with reality, and have relatively mature defenses, psychotic individuals have unstable identities, immature defenses (e.g., projection), and compromised reality testing. Borderline individuals in this system are defined by having unstable (“diffuse”) identities and immature defenses (especially splitting and projective identification), but intact reality testing across most situations. Thus, they may first appear neurotic, but later, particularly under the stress of close relationships such as in love or psychotherapy, may begin to act more psychotic. Identity diffusion, primitive defensive functioning, and stress-related perceptual distortions are thought to play an important role in interpersonal disruptions characteristic of borderline personality organization.

The overarching goal of this study is to investigate whether integrating Kernberg’s concept of personality organization can supplement interpersonal theory to more adequately describe borderline personality and suggest mechanisms amenable to change. Interpersonal theory of personality disorder and interpersonal process will be described in this Introduction, as will limitations of this theory in describing borderline personality. Next, some factors related to borderline personality organization that are potentially influential on interpersonal process will be described, leading to a discussion of several hypotheses that were tested in the current study.

Interpersonal Theory

A fundamental premise of interpersonal theory is that all of personality is interpersonal; this premise is at the core of Sullivan’s (1953) break with psychoanalytic drive theory. Most contemporary interpersonal theories describe personality using the interpersonal circumplex (Figure 1; Laforge and Suzek, 1955; Leary, 1957; Wiggins, 1991). The circumplex is defined by two factors, *control* (dominance – submissiveness) and *affiliation* (warmth – coldness). Any given behavior is defined by its standing on these factors, and behavioral possibilities are thought to be arranged around a circle, or circumplex, which they define. The distance of a given behavior from the intersection of the factors (radius) indicates the extremity of the behavior. Interpersonal styles, or traits, are defined as the mean placement of all of a given individual’s behaviors on the

circumplex. Importantly, the circumplex can also be used to describe problems, goals, or other levels of behavior (Leary, 1957).

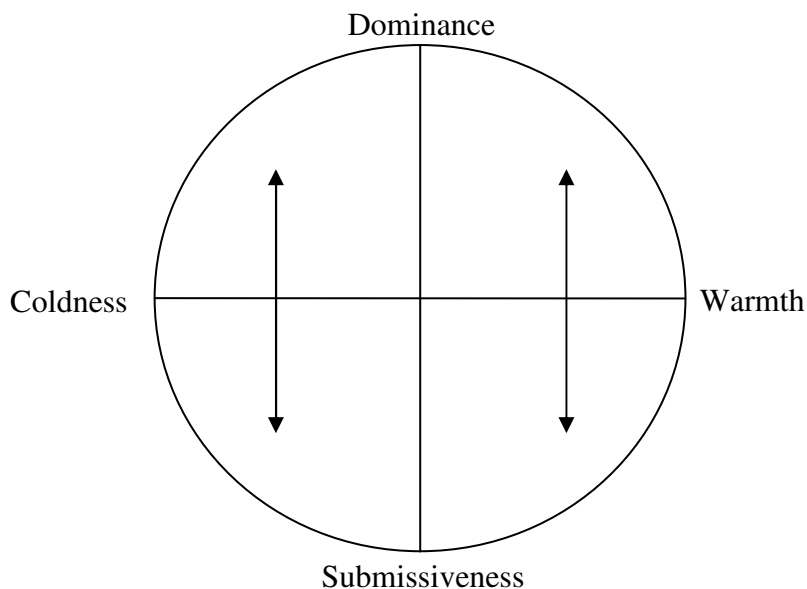


Figure 1. *Complementarity on the Interpersonal Circumplex.*

Interpersonal Conceptions of Personality Disorders

Socialization that involves opportunities to develop a range of interpersonal behaviors is thought to yield a well-adjusted individual with an integrated personality and flexible self-image who is able to shift their usual behavioral style to meet the needs of the interaction (Kiesler, 1996). Several developmental disruptions can lead to various forms of maladaptive personality according to traditional interpersonal theory. For example, individuals with limited opportunities to experience a range of interpersonal patterns during development are anticipated to be uncomfortable enacting a variety of behaviors, and thus to develop rigid traits. This causes interpersonal disruptions because behavior inconsistent with a rigid person's self-image is likely to be anxiety-provoking, and rigid individuals will therefore have a limited capacity to respond appropriately and flexibly to interpersonal environments that may call for an array of behaviors.

Although several studies have demonstrated that the interpersonal circumplex is capable of differentiating avoidant (submissive), schizoid (cold-submissive), paranoid

(cold), antisocial (cold-dominant), narcissistic (dominant), histrionic (warm-dominant), and dependent (warm-submissive) personality disorders in terms of mean differences between rigid and interpersonal traits (Morey, 1985; O'Connor & Dyce, 1998; Pincus & Wiggins, 1990; Romney & Bynner, 1989; Sim & Romney, 1990; Wiggins & Pincus, 1989), this approach has failed to capture BPD (Hopwood & Morey, 2007; Leihener et al., 2003; Lejeuz et al., 2003). Results from these studies suggest that borderlines are not characterized by rigid or extreme traits in isolated circumplex space, but are conflicted on both dimensions of the circumplex, and that they vacillate between behaviors, perhaps reacting to situational contingencies. Consistent with this hypothesis, Ruiz, Pincus, & Bedics (1999) reported that undergraduates with borderline features could be distinguished from undergraduates without borderline features in that the former group manifest conflicted recollections of parental behavior and their behavior towards parents. However, research has not clearly identified when and why a borderline person behaves in a given way. These questions are most likely to be answered by considering how borderline behavior might deviate from normative interpersonal processes, and what influences such deviations. The interpersonal concept of complementarity describes these normative processes and represents a useful framework for investigating interpersonal disruptions associated with borderline personality.

Complementarity

The interpersonal principle of complementarity (Carson, 1969; Kiesler, 1996; Leary, 1957) predicts how an individual's traits will interact with situations to elicit certain behaviors and not elicit others. It states that behavior between two people will tend to be dissimilar on control (dominant behavior tends to elicit submission and submission elicits dominance) and similar on affiliation (warm behavior tends to elicit warmth and coldness elicits coldness). The direction of complementarity with respect to the interpersonal circumplex is depicted by the vertical arrows in Figure 1. Interpersonal theory posits that anxiety results from interpersonal disruptions involving situations (i.e., threats to satisfaction needs) and/or traits (i.e., threats to security needs) (Sullivan, 1953). Behavior that is non-complementary with the situational behavior of others and behavior inconsistent with one's self-image are both thought to increase anxiety. To prevent

anxiety, and assuming they wish to maintain the relationship, individuals behave in ways that are, to the extent possible, both consistent with their self-image and complementary to those with whom they interact.

Research consistently supports the validity of complementarity (Kiesler, 1983, 1996; Tracey, Ryan, & Jaschik-Hermann, 2001; Sadler & Woody, 2003). However, a variety of factors influence the likelihood of demonstrating complementarity in empirical research (e.g., stress, status, familiarity, experimental methods; Gurtman, 2001; Kiesler, 1996; Tracey, 1994). The fundamental premise of the current study is that borderline personality moderates complementarity and thereby results in ineffective and dissatisfying relationships for borderline individuals and those with whom they interact. The purpose of this study was to test whether factors associated with borderline personality including misperception, identity diffusion, and impulsivity represent mechanisms by which this occurs.

Interpersonal Process of Borderline Personality

Some authors have concluded that a consideration of extra-interpersonal (e.g., cognitive, emotional) factors is necessary to fully describe BPD (Trapnell & Wiggins, 1990). For example, Wiggins and Pincus (1989) compared the ability of the interpersonal circumplex and the five-factor model to empirically differentiate and describe BPD; the disorder was not systematically related to interpersonal traits but was substantially related to neuroticism. Others have argued for the consideration of situational contexts in personality assessment. Kiesler noted that therapists are often concerned with specifying classes of situations likely to evidence particular maladaptive patterns and the specific manner in which problems are likely to be presented in the therapy session, and that these issues are poorly captured by the trait descriptive approach (1996, p. 185). Investigation of situational influences, expectancies, and reactions in BPD may supplement trait research, particularly because BPD appears to be characterized less by extreme, rigid traits and more by trait instability (Hopwood et al., in review). Kiesler (1996) describes BPD as interpersonally conflicted, or as characterized by opposite extremes on both control and affiliation, a hypothesis that has been supported empirically (Hopwood &

Morey, 2007). Benjamin (1993) offers a sequential prediction of how BPD interpersonal patterns occur, which in her theory recapitulates maladaptive developmental interactions. The BPD individual, in Benjamin's view, trusts their caregiver or romantic partner, but is quick to perceive rejection, to which they respond with hostile, controlling behavior that can escalate into hostile coercion such as self-damaging acts.

Data regarding the relevance of factors extrinsic to the interpersonal circumplex as well as situational influences that would be informative in the prediction of borderline interpersonal behavior are not currently sufficient to provide a clear picture of the disorder. There are many unanswered questions that, if answered, could provide direction for therapeutic interventions for borderline personality features. For example, is maladaptive behavior the result of fixed action patterns that are highly reactive to situational cues, as suggested by Benjamin (1993)? If so, do all borderline individuals manifest similar action patterns, or do they vary in interpersonal catenations? Do borderlines misperceive the behaviors and intentions of others, but respond in complementary ways to their perceptions of others? Or might they misperceive the effect of their own behavior, resulting in interpersonal disruptions? Perhaps BPD behavior is unpredictable by either traits or situations. Do borderlines make complementary behaviors by others less likely, or are others likely to exert extra effort to maintain complementarity? In the current study, the role of three factors, perception, identity, and impulsivity, are investigated for their influence on interpersonal disruptions associated with borderline personality.

Perception

Psychological problems in general and borderline personality in particular appear to be associated with interpersonal misperception (Kiesler, 1996; Pincus, 2005b). Therapists rate their own interpersonal behavior most similarly with independent observers when that behavior does not represent developmental conflict areas (Cutler, 1958). Although agreement between patients and therapists often does not converge (Hilliard, Henry, & Strupp, 2000), improved patients agree more with independent raters about the therapy process than do unimproved patients (Horowitz, Rosenberg, & Bartholomew, 1993). Borderlines tend to see themselves as more distressed than others

view them (Edell, Joy, & Yehuda, 1990) and tend to have more negative interpretations of emotion-evoking stimuli than non-borderlines (Kurtz & Morey, 1998). Previous research suggests that borderline features impact the perceptual accuracy of emotions and interpersonal behaviors in others (Armeliu & Granburg, 2000; Donegan et al., 2003, Minzenberg, Poole, & Vinogradov, 2006) and that non-borderline people tend to form negative impressions of borderline individuals (Carroll et al., 1998). Although research has been more limited with regard to how accurately borderline individuals perceive their own behavior, extant data suggest that perceptual biases among borderline individuals have the potential to disrupt interpersonal interchanges.

Indeed, negativity and misperception, especially under stress, is descriptive of the disorder, as indicated by the DSM-IV symptom related to paranoia and dissociation under stress (APA, 1994). Although Kernberg (1975, 1976, 1984) describes individuals characterized by borderline personality organization as having generally intact reality testing, he also notes perceptual disturbances in borderlines that are related to a variety of primitive defense mechanisms, including splitting, projective identification, primitive idealization, and denial. Unlike psychotics, borderlines are able to differentiate self from other, but unlike neurotics, they are unable to maintain a differentiated representation of self or other, and thus tend to have “limited capacity for a realistic evaluation of others” (1984, p. 14). Interpersonally, this may manifest as tending to view others based on preconceived notions or intrapsychic phenomena, despite, and even in contradiction to, that person’s objective behavior. Individuals functioning at the borderline level of personality organization may also tend to have self-images which both vacillate and are modally inconsistent with the way others perceive them.

Misperceptions with regard to one’s own or other’s behavior may lead to interpersonal disruptions in relationships involving a borderline individual. First, if a borderline character misperceives others’ behavior, he may complement that perception rather than the actual behavior. This would lead to non-complementarity from an objective perspective, which would be confusing and frustrating for the borderline person, who would see himself as enacting a complementary pattern of behaviors. Borderline individuals may also construe their own behavior differently than others. This would lead to expectations on the part of the borderline person that would be unlikely to

be satisfied. Misconstrual of either self or other interpersonal behavior is unlikely to lead to complementary behavior, interpersonal effectiveness, or satisfaction. Misperception can be operationalized in experimental research as inconsistency across self- and other-ratings of interpersonal behavior.

Identity

Although borderline personality is not well described by models positing rigid interpersonal traits (Hopwood, & Morey, 2007; Kiesler, 1996), the interpersonal model may nevertheless be central in understanding the disorder. The influence of factors extrinsic to the interpersonal circumplex on interpersonal situations must supplement current descriptions to understand the nature and implications of the disorder from an interpersonal perspective (Pincus, 2005b). Identity diffusion may represent one such factor. For Kernberg, identity diffusion signifies a poorly integrated sense of self and others and involves chronic emptiness, contradictory self-perceptions, behavior that is inconsistent with emotional experience, and shallow object representations (1975, p. 12). Individuals with diffuse identities are likely to use relationships to evade feelings of emptiness and conflicted emotional experience. They might, thus, over-identify with people whom they value and complement those persons' behavior regardless of how inconsistent it is with their traits. For example, in order to feel whole and not to feel abandoned, a generally warm person with a diffuse identity might regularly enact a sequence of cold behaviors with her cold relationship partner, fearing that if she attempted to be warm the other person might discontinue the relationship. This may also, however, lead to resentment and eventuate in conflicted, vacillating affiliative behavior.

Interpersonal researchers have only recently begun to systematically study variability in interpersonal behavior (e.g., Moskowitz & Zuroff, 2004). Consistent with the current conceptualization of borderline personality, Moskowitz and Zuroff found that neuroticism, a trait strongly linked to BPD (Wiggins & Pincus, 1989), predicted variability in interpersonal behavior. Russell et al. (2007) recently demonstrated that a group of patients diagnosed with BPD had more variable interpersonal behavior than a group of non-clinical controls.

This variability is opposite from the rigid and inflexible pattern anticipated by interpersonal theory, as well as the contemporary diagnostic system (APA, 1994). It has long been thought that interpersonal rigidity compromises complementarity to the extent that interaction partner's traits do not provide natural complements. Identity rigidity would be operationalized on circumplex instruments as a highly differentiated pattern, with most behaviors occurring in a particular circumplex space. Identity diffusion, conversely, is anticipated to make situational complementarity more likely, but to involve a decrease in the predictive utility of an individual's traits on their behavior. The most direct operationalization of identity diffusion on the circumplex involves maladaptive situational reactivity of behavior. That is, identity diffuse individuals would be anticipated to be minimally influenced by their own interpersonal traits and more influenced by the behavior of others.

Impulsivity

Impulsivity is diagnostic of BPD (APA, 1994), and may be associated with a variety of interpersonal antecedents and consequences. Impulsivity is thought to be related to neuro-cognitive factors that limit the capacity for inhibition of affect-based behavior (Nigg, Silk, Stavro, & Miller, 2005). Effortful control is one such factor that is related to a specific attentional network in the neurological substrate and is associated with the executive management of competing stimuli. The capacity to inhibit certain behavioral responses has been shown to relate positively to the development of conscientiousness (Kochanska, Murray, & Coy, 1997) and negatively to aggression (Rothbart, Ahadi, & Hershey, 1994) in children. Hoermann, Clarkin, Hull, and Levy (2003) found that effortful control among borderline patients predicted lower levels of symptoms, better interpersonal functioning, and higher levels of personality organization.

Kernberg (1975, 1976, 1984) discusses impulsivity in the context of several non-specific manifestations of ego-weaknesses characteristic of borderline personality. One important characteristic of impulsivity is that it appears to characterize behavior in the face of consequences that would inhibit most people (e.g., impulsive self-harm). Thus, impulsivity relates to behavior that, to a certain extent, ignores contingencies. Complementarity, meanwhile, is a theory about how people will behave according to

specific contingencies. It is reasonable to expect that no model of behavior based on contingencies, including complementarity, could adequately characterize impulsive behavior as described in the DSM-IV (APA, 1994) symptoms of BPD.

Impulsivity, by definition, precipitates an inability to predict behavior using psychological dispositions. In addition, and unlike the effect predicted to be associated with identity diffusion, impulsivity would be expected to result in interpersonal behavior that is also unpredictable by the interpersonal situation (i.e., it would not be predicted by the behavior of a relationship partner). Thus, impulsivity would be predicted to lead to unpredictability of borderline behavior by either interpersonal traits or situations.

Research Question

The goal of this study is to test the hypothesis that borderline personality features including misperception, identity diffusion, and impulsivity interfere with interpersonal complementarity. This question will be addressed using an approach developed by Sadler and Woody (2003, see also Kenny, 1996) to test complementarity. This method was chosen for its ability to separate trait and state effects in interpersonal transaction and model perceptual as well as behavioral influences on dyadic behavior. In their study, non-clinical participants' interpersonal traits were rated by themselves and friends. Mixed-sex dyads were then asked to work together for 20 minutes to describe a fictional person's personality based on that person's responses to five cards of the *Thematic Apperception Test* (TAT; Murray, 1943). Three indices represented their interpersonal behavior: self-ratings, partner ratings, and coder ratings. Data for affiliation and control were used to construct separate structural equation models in order to test the theory of complementarity as well as gender effects. The model is depicted in Figure 2: the four latent variables are male and female traits and male and female states. Factor coefficients are relevant for testing perceptual differences across interactants and raters. Path coefficients that are important for testing hypotheses related to the complementarity of behavior are represented by the following: (A) represents the influence of the woman's trait on her situational behavior controlling for the influence of the man's behavior, (B) represents the influence of the man's behavior on the woman controlling for the woman's

trait, (C) represents the influence of the woman's behavior on the man controlling for the man's trait, and (D) is the influence of the man's trait on his behavior controlling for the influence of the woman's behavior. To limit the potential for method effects, errors were correlated for ratings provided by the same individuals, although those are not relevant

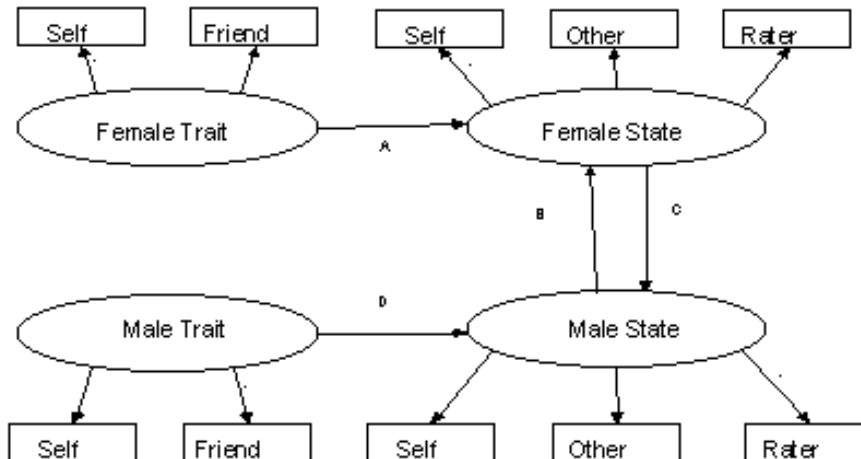


Figure 2. *Sadler and Woody (2003) structural model.*

Note. This model does not include residual terms or within-rater error covariances for clarity.

for hypothesis tests. Sadler and Woody's model of complementarity fit their data quite well, and demonstrated that both traits and situations predict behavior in terms of both control and affiliation and regardless of participant gender. By demonstrating the trait and state influences on interpersonal behavior found in randomly selected participants, Sadler and Woody's study provides a benchmark for research involving trait and state deviations from normal behavior, such as would be expected in borderline individuals. Understanding the particular failures of complementarity associated with borderline personality and the relative contribution of perception as well as both state and trait influence on interpersonal behavior by borderlines (and those they interact with) would supplement descriptive diagnoses and elucidate assessment and treatment targets. Using the Sadler and Woody (2003) data as a benchmark, the following hypotheses were tested in the current study:

Hypotheses

1. Complementarity replicates across non-borderline samples. Although the research literature has documented that complementarity is a reliable effect in dyadic interactions, it has not been replicated using Sadler and Woody's methodology. Participants in their sample demonstrated complementary behavior consistent with theoretical predictions: the effect of warm behavior on the interaction partner was warmth whereas the effect of dominant behavior was submission and the effect of submissive behavior was dominance. In addition, both interpersonal traits and situations (i.e., the partner's behavior) were predictive of situational behavior. It is important to demonstrate that the effect replicates before it can be used confidently as a benchmark against which to compare individuals who vary on a dimension like borderline personality features. Furthermore, data for the current study were gathered in a setting (Texas) that is potentially different in terms of normative interpersonal processes than that of their study (Ontario).

Because complementarity is thought to be a pervasive pattern of social behavior across cultures in people without prominent personality pathology, it was expected that structural models using a sample of individuals without borderline features gathered in Texas would not vary those from Sadler and Woody's Canadian data in terms of measurement effects or the influence of traits, states, or gender on dyadic behavior. Conversely, it was anticipated that a model comprising dyads including a borderline interactant would be dissimilar to Sadler and Woody's data as well as data from a similar replication sample. Hypotheses 2 and 3 are contingent upon this general finding, and were designed to investigate where these breakdowns occur in dyads with a borderline participant.

2. Perceptual factors associated with borderline personality features disrupt interpersonal processes. Previous research suggests that borderline features influence emotional and interpersonal perception (Armeliu & Granburg, 2000; Donegan et al., 2003, Minzenberg, Poole, & Vinogradov, 2006). Borderline individuals in the current study may see themselves differently from others or see

the behavior of their interaction partners differently than their partners or objective observers. For example, borderline individuals may anticipate reactions by others that complement their own behavior, but receive different reactions because their partners do not perceive their behavior similarly. Or, they may respond in complementary ways to the behavior of others, but according to a misperception of the dominance or warmth valence of an interaction. In either case, borderline individuals would be expected to deviate from non-clinical individuals in terms of perception and appraisal of interpersonal situations. It was hypothesized that borderline ratings would differ from those of friends, interaction partners, and trained coders whether they were rating their own or others' behavior. This finding would suggest the importance of perceptual and cognitive processes in treatment, including interventions aimed at limiting perceptual distortion and developing a capacity to understand normative rules of interpersonal process.

3. Interpersonal process is affected by borderline personality. Several possibilities exist with regard to the influence of traits and situational factors on the behavior of borderline individuals. First, borderline personality may not affect complementarity, and similar patterns of data may be observed in dyads with and without a borderline participant. However, given the notable interpersonal dysfunction associated with borderline personality, it was anticipated that complementarity would be affected by the inclusion of a borderline participant. Second, borderline interpersonal behavior may be over-determined by interpersonal traits. This would be consistent with the traditional interpersonal (Leary, 1957) and DSM (APA, 1994) proposition that rigidity, or the over-reliance on particular interpersonal behaviors, is a diagnostic sign of personality disorder. In this case, the influence of interpersonal traits would be of greater magnitude for borderline than non-borderline interactants. This finding would suggest the importance for clinicians of targeting rigid traits and enhancing behavioral flexibility. However, as discussed above, previous research has failed

to adequately characterize BPD as interpersonally rigid, thus it is not anticipated that this pattern will be observed.

Two other patterns reflect hypothesized possibilities. The first involves hyper-reactivity among borderline individuals as predicted by identity diffusion. Given previous research suggesting that borderline personality is associated with pervasive instability (e.g., Hopwood et al., in review; Russell et al., 2007), as well as Kernberg's notion of identity diffusion as an explanatory concept, it was hypothesized for the current study that borderline interpersonal behavior would be over-determined by interpersonal states (i.e., hyper-reactivity to the behavior of others). This would be demonstrated by a decrease in magnitude of the trait path and an increase in magnitude of the state path for the borderline participant relative to non-borderline participants in Figure 2. This finding would suggest an under-development of interpersonal traits associated with an undifferentiated self and a sense of dependence on others to avoid feelings of emptiness. It would also indicate that interventions aimed at encouraging the development of adaptive independence would be beneficial for borderline patients.

The second hypothesized possibility is that borderline interpersonal behavior is erratic due to notable impulsivity. If cognitive dysfunction among borderline individuals (e.g., disinhibition as a consequence of limited capacity for effortful control) restricts behavioral stability in general, this effect may be anticipated to generalize to dyadic behavior. In this case, the influence of both interpersonal traits and the partner's behavior on borderline interpersonal behavior would be of lower magnitude than the influence of traits or others' behavior on either the men with whom the borderline interacts, or individuals in non-borderline comparison samples. This finding may suggest the use of interventions designed to develop both an integrated and stable self-identity and an understanding of normative interpersonal protocol.

A related set of questions involve the behavior of individuals interacting with someone who has borderline personality features. It was hypothesized that borderline individuals would engender more effort on the part of those they interact with to maintain complementarity than would non-clinical individuals. If

borderline personality is, indeed, associated with non-complementarity, interpersonal theory would suggest that people interacting with borderline individuals should be more reactive to them than they are to non-borderline individuals because non-clinical individuals are made anxious by non-complementarity and are generally capable of enacting interpersonal behavior that complements that of their interaction partner. In this case, the influence of borderline individuals on non-clinical participants, controlling for the non-clinical individual's interpersonal traits, would be larger in magnitude than (and in the same direction as) the influence of non-clinical individuals on one another (again controlling for traits). Moreover, the influence of interpersonal traits on the behavior of non-clinical individuals would be less when interacting with borderlines than when interacting with other non-borderline individuals.

2. METHODS

Participants

Comparison Sample

Participants (N = 224, 112 women) in the comparison sample (i.e., data already collected by Sadler and Woody, 2003) consisted of undergraduates unfamiliar with one another. In addition, participants asked individuals who knew them to rate their (the participants') interpersonal traits after the experiment, a procedure that yielded an 80% response rate.

Replication Sample

The replication (N = 226, 113 women) sample was designed to parallel the comparison sample in terms of demography and data collection procedures and to be free of borderline personality features. Participants were recruited from the Texas A&M University Psychology undergraduate subject pool and screened for borderline features, as described below.

Extension Sample

The comparison sample (N = 258, 129 women) was also designed to parallel the comparison and replication samples as closely as possible in terms of demographic variables and data collection procedures, and was recruited from the Texas A&M University Psychology undergraduate subject pool. However, in contrast to the comparison and replication samples, the proposed sample was stratified to consist of two groups salient to the hypotheses in question: women who achieved scores above a cutoff for borderline features and men who were well short of meeting this cutoff. The rationale and previous use of this cutoff is discussed below in the Measures section. Borderline traits were sampled in women rather than men based on the commonly observed 3:1 gender ratio of the disorder (APA, 1994). Despite borderline features in the clinical range, no participants were determined to be in acute clinical distress at the time of the study.

The average age across replication and comparison samples was 19.03 (S.D. = 1.32). Overall, 351 participants (77%) were Anglo-American, 15 (3%) were African-American, 49 (11%) were Latin-American, 16 (4%) were Asian-American; 23 (5%) were of other ethnicities or did not report ethnicity. Neither age nor ethnicity significantly differed across genders or TAMU samples.

Measures

Social Behavior Inventory (SBI)

The SBI (Moskowitz, 1994) is a 46 item measure of interpersonal style that was used in the Sadler and Woody study. Respondents indicate the frequency of interpersonal behaviors representing four subscales, Dominance, Submissiveness, Agreeableness (Warmth), and Quarrelsomeness (Coldness) using item responses ranging from 1 (*never*) to 6 (*almost always*). The SBI was developed to represent behavioral manifestations of interpersonal traits, and closely approximates another commonly used interpersonal instrument, the Interpersonal Adjective Scales (IAS; Wiggins, 1979). The SBI has excellent psychometric properties (Moskowitz & Cote, 1995; Oakman et al., 2003) in general and demonstrated satisfactory reliability as a measure of interpersonal traits and behaviors in Sadler and Woody's study. The SBI was used for self-reports of traits and states by participants, situational ratings of transaction partners' behavior, informant trait ratings of participants, and research coder ratings of situational behavior, and comprises all of the data in the structural models used to test study hypotheses.

Personality Diagnostic Questionnaire-4 Borderline Personality Disorder (PDQ-4 BPD) Scale

The PDQ-4 BPD (Hyler, 1994) scale is a self-report measure of DSM-IV borderline personality disorders that has adequate reliability and adequate convergence (Hyler, Skodol, Kellman, Oldham, and Rosnick, 1990) and similar validity (Hopwood et al., 2008) with structured interviews of BPD. This scale was used in combination with the PAI Borderline Features scale described below to screen participants in the replication

and Extension Samples. Participants with five or more PDQ-4 borderline symptoms were considered borderline and participants with two or fewer borderline symptoms were considered non-borderline. All participants with 3-4 symptoms were ineligible for study participation. The internal consistency of the PDQ-4 BPD scale among all participants was .79.

Personality Assessment Inventory Borderline Features (PAI BOR) Scale

The PAI (Morey, 1991) is a 344-item multi-scale self-report clinical inventory with 4-point item-response scaling. The 24-item Borderline Features (BOR) scale was constructed with four subscales (Affective Instability, Identity Disturbance, Negative Relationships, and Self-Harm) targeting different theoretical elements reflected in Kernberg's operationalization of borderline personality organization as well as empirical research on BPD (APA, 1994). The BOR scale in isolation has been found to distinguish BPD patients from unscreened controls with an 80% hit rate, and successfully identified 91% of these subjects as part of a discriminant function (Bell-Pringle et al., 1997). Classifications based upon the BOR scale have been validated in a variety of domains related to borderline functioning, including depression, personality traits, coping, Axis I disorders, and interpersonal problems for college students (Trull, 1995; Trull, Useda, Conforti, & Doan, 1997). The internal consistency of the PAI BOR scale among all participants was .85.

PAI BOR was included with PDQ-4 BPD in the screening packet to increment the validity of the sampling method and to ensure participants would be characterized by both the DSM and psychoanalytic concepts of borderline. Inclusion of women was conditional on scores $> 70t$ and men with scores $> 60t$ were excluded from the extension sample; all participants with scores $> 60t$ were excluded from the replication sample. PAI BOR was administered again at the time of the study to ensure the stability of borderline features and appropriateness of group assignment. The correlation between these instruments was .59 and the mixed effects intraclass correlation for the diagnostic cut scores of $> 70t$ on PAI BOR and > 4 on PDQ-4 BPD was .47. The same correlation for the diagnostic cut scores of $< 60t$ on PAI BOR and < 3 on PDQ-4 BPD for non-borderline participants was .64. Moderate agreement is not surprising given that, whereas

PDQ-4 BPD is based on a DSM conceptualization of BPD, PAI BOR was constructed to reflect the wider construct of personality organization (Morey, 1991). A cutoff of 65 t was used to remove subjects at the time of the experiment, in order to allow for some variability on this dimension but also ensure that PAI BOR scores remained non-overlapping across borderline and non-borderline participants. In the experimental sample, 15 dyads were removed from the data because women had scores that were below 65 t on BOR at the time of the experimental protocol. Thus, the final N for this group was 228 dyads (114 women). No replication sample participant scores were above 65 t at the time of their participation in the experimental protocol.

Procedures

All participants were screened to assess eligibility in terms of borderline scores on PDQ-4 BPD and PAI BOR as part of a Psychology Department Subject Pool administration conducted at the beginning of five academic semesters (Spring 2005 – Spring 2007). Individuals who met criteria on these measures were contacted by the research team by email for potential participation, and referred to the Psychology Department's online participation sign up registry. Those individuals who agreed to participate were scheduled for the experimental protocol.

Once at the laboratory, informed consent was obtained and the research team checked to insure that participants did not know one another. Participants were assigned a study ID number and asked to complete self-report measures using that ID number. Participants provided the name and phone number of someone who knew them as part of the study protocol. After completing the self-report questionnaires including the SBI measure of their own interpersonal traits and PAI BOR, participants were told that the study was designed to investigate different approaches to problem solving. They were then asked to work on solving a problem with the other participant, and were told that their interaction would be videotaped. They were briefly given background information about the Thematic Apperception Test (TAT; Murray, 1943), how it is typically administered, and how clinicians and researchers commonly use it to understand individuals' personalities. Participants were given the five TAT cards and the fictional

person's stories for those cards used in Sadler and Woody's (2003) experiment, and were asked to reach an agreement about that person's personality in 20 minutes. One participant wrote down personality descriptors on a blank piece of paper. After the tasks, the partners were separated into adjacent rooms. They were asked to rate their own and their partner's interpersonal behavior during the interaction, again on the SBI. Participants were then debriefed about the purposes of the study. Participants received psychology course credit in exchange for their participation.

After participant data were gathered, informants were contacted by members of the research team, informed that their contact information was provided by the participant and briefed about the nature of the experiment, and asked for verbal consent to participate. Phone contact rather than mailing was used to limit missing data. This telephone interaction lasted approximately 15 to 20 minutes and constituted the entire participation of nominated informants. During this interaction, the informant rated the target participant's interpersonal traits using the SBI items. Nominated informants received no compensation for participating. All of nominated informants' identifying information was removed from study materials after contact had been made and data collected.

A research assistant blind to study hypotheses scored videotapes of the interaction in terms of interpersonal behavior, again using the SBI. This research assistant underwent 10 hours of individual training on interpersonal theory as it applies to traits, situational behavior, and personality pathology. Following this training, she independently coded videotaped interactions with the SBI, and her results were compared to those of the author. Videotaped interactions were coded until a Pearson r of .80 was observed across all items for two consecutive ratings. Adequate reliability was achieved in 6 trials after training and in three or less trials at all other reliability checks, which occurred at the beginning of each semester during data collection.

Thus, as in Sadler and Woody's method (Figure 2), five measures of SBI control and affiliation were gathered for each participant: participant-rated traits, informant-rated traits, participant-rated situational behavior, partner-rated situational behavior, and coder-rated situational behavior.

Data Analyses

Standard methods were used to describe the data in terms of means, variability, and psychometrics. The data analytic strategy for hypothesized effects involved an extension of Sadler and Woody's (2003) model as shown in Figure 2. All models were built with data from the SBI (traits reported by self and nominated friends, and situational behavior by self, interaction partner, and independent observer). Initial analyses tested the hypothesis that Sadler and Woody's model and the proposed models come from different populations. AMOS was used for model building and testing to retain consistency with Sadler and Woody's method. Informant ratings were missing for 6 participants in the control sample and 2 participants in the experimental sample. Missing data were replaced with a Full Information Maximum Likelihood procedure (Newman, 2003).

To test whether two estimated parameters differed within nested structural models, the χ^2 statistic from a baseline model in which the parameters were unconstrained and, hence, freely estimated was compared to the χ^2 from a model in which the parameters are constrained to be equal in the two groups (e.g., proposed samples and Sadler and Woody's sample). The comparison of interest was between the constrained and unconstrained models; specifically, if constraining the model reduced fit, it was inferred that the constrained path coefficients were of significantly different magnitude. To test for between-group effects, the model was re-run but constrained so that the structural paths were equal. If the baseline and constrained models were not significantly different, it was concluded that the structural model was invariant between the samples. If the baseline and constrained models were significantly different it was inferred that there is a moderating effect on causal relationships in the model that varies by group. Other goodness of fit statistics were used to supplement the χ^2 in assessing model fit. These statistics paralleled those used by Sadler and Woody, and included the CFI, TLI, RMSEA, and PClose values. CFI and TLI values $> .95$, RMSEA values $< .09$ and PClose values $> .50$ are generally thought to represent adequate fit (Byrne, 2001; Hu & Bentler, 1998), and were used as benchmarks in the current study.

3. RESULTS

Descriptive and Psychometric Statistics

The internal consistency coefficients for the trait and state SBI across groups, genders, and raters are given in Table 1. These coefficients are consistent with previous reports in suggesting acceptable reliability for the SBI. Control and affiliation scores were computed by dividing scale scores by the number of items in each scale and subtracting polar opposite scales (i.e., control = dominance – submissiveness; affiliation = warmth – coldness), paralleling the method used by Sadler and Woody. These scores were used in all further analyses.

Table 2 shows descriptive data for the SBI control and affiliation scores. Some significant group differences, tested with 2 (gender) x 2 (sample) ANOVAs, are notable and consistent with theoretical expectations. For example, with regard to control, significant ($p < .05$) differences were observed across most raters. Men had higher scores than women on self-rated trait ratings ($F = 12.64, p < .001$) and self- ($F = 5.86, p < .05$), partner- ($F = 13.66, p < .001$), and rater-scored state ratings ($F = 4.73, p < .05$). This is consistent with previous research that associates masculinity with interpersonal agency and control (Wiggins, 1991). For the partner-ratings, a significant interaction effect suggested that this gender difference was stronger in the replication than extension sample ($F = 11.47, p < .001$). This effect may relate to perceptual issues associated with borderline personality or individuals interacting with borderline partners, as discussed below.

A gender by sample interaction showed that women had higher self-reported trait affiliation scores in the replication sample but lower scores in the extension sample ($F = 25.66, p < .001$). The same pattern was observed in the informant-trait ratings ($F = 11.47, p < .001$). There were no significant state differences. This pattern suggests that although borderline personality features are associated with trait interpersonal coldness as measured by the SBI, this pattern did not generalize to situational ratings.

Table 1. *SBI Cronbach's alpha coefficients across genders and samples.*

	Dominance	Submissiveness	Warmth	Coldness
Replication Sample Women				
Self-Trait	.75	.81	.79	.72
Informant-Trait	.76	.77	.76	.67
Self-State	.77	.70	.70	.60
Partner-State	.72	.75	.75	.68
Observer-State	.89	.91	.91	.65
Replication Sample Men				
Self-Trait	.85	.74	.74	.76
Informant-Trait	.80	.77	.77	.72
Self-State	.80	.63	.77	.74
Partner-State	.64	.71	.73	.65
Observer-State	.90	.87	.73	.71
Extension Sample (Borderline) Women				
Self-Trait	.75	.85	.73	.68
Informant-Trait	.74	.81	.77	.74
Self-State	.79	.81	.78	.50
Partner-State	.73	.75	.65	.67
Observer-State	.88	.87	.65	.64
Extension Sample Men				
Self-Trait	.80	.67	.80	.66
Informant-Trait	.84	.80	.84	.72
Self-State	.79	.64	.79	.66
Partner-State	.77	.76	.70	.58
Observer-State	.88	.89	.70	.57
Median	.79	.81	.76	.67

Table 2. *Mean (S.D.) SBI control and affiliation scores across genders and samples.*

	Replication		Extension	
	Women	Men	Women	Men
Control				
Self-Trait	0.38 (0.91)	0.60 (0.89)	0.20 (0.99)	0.56 (0.79)
Informant-Trait	1.28 (1.12)	1.22 (1.12)	0.89 (1.07)	1.05 (1.20)
Self-State	0.95 (0.83)	1.14 (0.87)	0.83 (1.03)	1.04 (0.81)
Partner-State	0.29 (0.87)	0.90 (0.85)	0.56 (0.86)	0.59 (1.04)
Observer-State	-0.15 (1.12)	.08 (1.03)	-0.02 (1.05)	0.18 (1.04)
Affiliation				
Self-Trait	1.67 (0.72)	1.23 (0.63)	1.16 (0.71)	1.36 (0.62)
Informant-Trait	2.01 (0.92)	1.59 (1.10)	1.55 (1.01)	1.60 (1.03)
Self-State	1.75 (0.76)	1.73 (0.78)	1.79 (0.77)	1.81 (0.82)
Partner-State	1.70 (0.80)	1.62 (0.82)	1.79 (0.79)	1.73 (0.87)
Observer-State	0.67 (0.58)	0.70 (0.58)	0.61 (0.55)	0.63 (0.53)

Note. Data reflect difference scores (Control = Dominance – Submissiveness and Affiliation = Warmth – Coldness).

Tables 3-6 show the inter-correlations of SBI control and affiliation scores across groups, which are represented below in covariance models used to test study hypotheses. Orthogonality is anticipated across interpersonal dimensions. In the replication sample, the average correlation between affiliation and control across five SBI ratings was .01 for men and -.06 for women; in the extension sample these values were -.03 and .03, respectively. Further results with regard to hypothesized effects are separated across the control and affiliation models.

Table 3. *Inter-correlations of SBI control scores in the replication sample.*

	MTS	FTS	MTI	FTI	MSS	FSS	MSP	FSP	MSO
FTS	-.08								
MTI	.36	.05							
FTI	.07	.38	.04						
MSS	.51	-.09	.31	.05					
FSS	-.12	.42	-.09	.12	-.16				
MSP	.18	.19	.23	.04	.21	.18			
FSP	-.15	.08	-.08	.05	-.28	.30	-.13		
MSO	.26	.16	.34	-.01	.31	.00	.40	-.31	
FSO	-.02	.11	-.12	.04	.26	.34	-.15	.37	-.28

Note. M = Male, F = Female; TS = trait self-rating; TF = trait informant-rating; SS = state self-rating; SP = state partner-rating; SO = state observer-rating.

Table 4. *Inter-correlations of SBI affiliation scores in the replication sample.*

	MTS	FTS	MTI	FTI	MSS	FSS	MSP	FSP	MSO
FTS	.06								
MTI	.04	-.04							
FTI	-.01	.27	-.06						
MSS	.43	.08	.13	.11					
FSS	.10	.38	.09	.08	.30				
MSP	.09	.22	.19	.00	.36	.78			
FSP	.28	.22	.11	.10	.83	.33	.39		
MSO	.02	.15	.12	.07	.13	.22	.28	.16	
FSO	.05	.09	.05	.10	.25	.31	.21	.23	.12

Note. M = Male, F = Female; TS = trait self-rating; TF = trait informant-rating; SS = state self-rating; SP = state partner-rating; SO = state observer-rating.

Table 5. *Inter-correlations of SBI control scores in the extension sample.*

	MTS	FTS	MTI	FTI	MSS	FSS	MSP	FSP	MSO
FTS	.04								
MTI	.40	.08							
FTI	-.01	.37	.14						
MSS	.45	.03	.20	.12					
FSS	-.05	.50	-.09	.26	-.28				
MSP	.22	.02	.32	.08	.52	-.24			
FSP	-.04	.24	-.04	.06	-.33	.42	-.35		
MSO	.25	-.05	.30	-.07	.36	-.21	.51	-.21	
FSO	-.06	.22	-.06	.17	-.18	.31	-.09	.23	-.32

Note. M = Male, F = Female; TS = trait self-rating; TF = trait informant-rating; SS = state self-rating; SP = state partner-rating; SO = state observer-rating.

Table 6. *Inter-correlations of SBI affiliation scores in the extension sample.*

	MTS	FTS	MTI	FTI	MSS	FSS	MSP	FSP	MSO
FTS	-.07								
MTI	.33	.10							
FTI	-.18	.08	.11						
MSS	.45	-.02	.19	-.07					
FSS	.02	.02	.05	-.04	.21				
MSP	.15	.00	.09	.04	.34	.79			
FSP	.36	.02	.19	-.05	.80	.32	.42		
MSO	.23	-.02	.22	-.13	.36	.17	.16	.28	
FSO	-.04	-.03	.07	.09	.13	.20	.32	.11	.22

Note. M = Male, F = Female; TS = trait self-rating; TF = trait informant-rating; SS = state self-rating; SP = state partner-rating; SO = state observer-rating.

Control

Hypothesis 1. Complementarity replicates across non-borderline samples

This hypothesis states that model statistics will indicate that the comparison and replication samples come from the same population (i.e., the replication data will fit a model when all paths are constrained to be equal to the comparison model data). A model in which all replication sample measurement and regression paths were constrained to equal those from the Sadler and Woody model fit the data well ($\chi^2_{(64)} = 76.96$, *ns*, CFI = .970, TLI = .958, RMSEA = .030, PClose = .925; Figure 3)

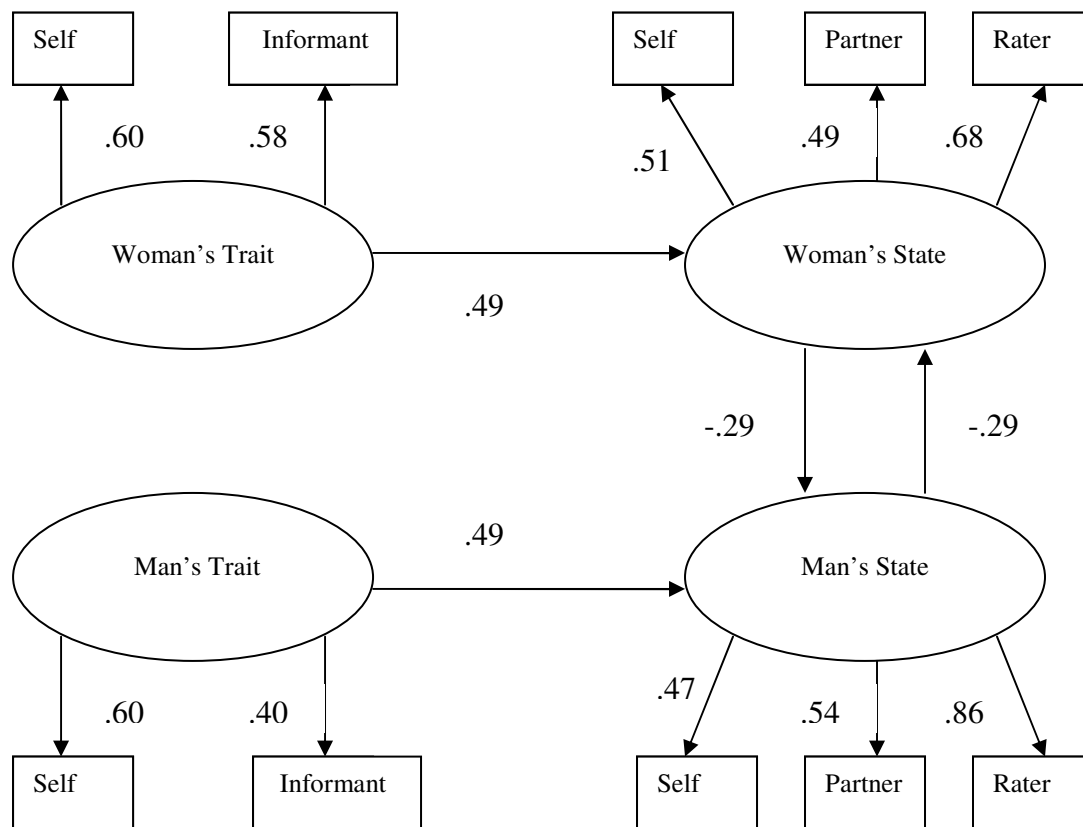


Figure 3. Standardized control model coefficients with measurement and regression paths constrained to be equal across comparison and replication samples.

This suggests that the measurement model, the structure of interpersonal interaction, complementarity, the relative influence of states and traits, and the influence of gender were equivalent across these samples. Based on this result, the Sadler and Woody data were combined with the replication data for further analyses.

Hypothesis 2. Perceptual factors associated with borderline personality features disrupt interpersonal processes

The three samples were compared to test model structure in the extension data. Given findings that path coefficients did not vary across comparison and replication samples, all paths were constrained to be equal in these samples, whereas all specified paths were freed to vary in the extension sample. This model fit the data adequately ($\chi^2_{(88)} = 83.52$, *ns*, CFI = 1.000, TLI = 1.000, RMSEA = .000, PClose = 1.000), suggesting that the structure held across the samples.

Next, to test the hypothesis that perceptual issues interfere with interpersonal relationships between a borderline and non-borderline interactant, the measurement model paths in the extension sample were constrained to equal those in the other samples. The $\chi^2_{(10)}$ difference test statistic (53.91, $p < .001$; overall $\chi^2_{(98)} = 137.43$, $p < .001$) suggested that one or more measurement paths in the extension sample differed from those in the other samples.

A series of invariance analyses were initiated to test that misfit was related to one or more of the measurement paths associated with the borderline ratings, given the study hypothesis to that effect. To provide a benchmark, a model was fit in which all non-borderline measurement paths were constrained to be equal across all three samples, whereas all ratings provided by the borderline women were freed in the extension sample. The fit of this model was adequate ($\chi^2_{(95)} = 122.25$, $p < .05$, CFI = .960, TLI = .944, RMSEA = .029, PClose = .966). Next, measurement paths reflecting data provided by the women participants (self-trait, self-state, other-state), who were also the borderline participants in the extension sample, were constrained to be equal across samples one at a time. Invariance across samples, as indicated by a non-significant χ^2 difference test, would indicate that the borderline women ratings were of similar contribution to the latent trait as the non-borderline women ratings. Invariance across models was observed

when the path related to the borderline woman's self-reported traits was constrained ($\chi^2_{(1)}$ difference = 0.87, *ns*). A weak effect was observed suggesting differential measurement impact associated with the borderline woman's self-report of her own situational behavior ($\chi^2_{(1)}$ difference = 4.54, $p < .05$). However, evidence for variance across samples was strong when the coefficient reflecting the woman's rating of the man's situational behavior was constrained ($\chi^2_{(1)}$ difference = 12.60, $p < .001$). Furthermore, a model in which all extension paths were constrained to be equal except this coefficient fit the data reasonably well ($\chi^2_{(97)} = 125.76$, $p < .05$, CFI = .957, TLI = .940, RMSEA = .030, PClose = .994) and was not significantly different from the model in which all the paths related to the borderline women ratings were freed to vary ($\chi^2_{(2)}$ difference = 3.51, *ns*).

These data suggested that, at the level of the measurement model, the impact of including a borderline participant in the dyad involved differential ratings of the man's behavior. Bivariate correlations between the three ratings of the man's situational behavior across samples can clarify differences associated with borderline features. The correlation between the man's rating of his own situational control and the woman's rating of his situational control was .52 in the extension data and .28 averaged across the comparison and replication data. This difference indicates, perhaps surprisingly, that the perception of borderline women is more similar to the men they interact with than is the case with non-borderline women.

Hypothesis 3. Interpersonal process is affected by borderline personality through identity diffusion or rigidity

Findings above indicating that the measurement models varied across extension and comparison/replication samples suggested that the regression paths could not be meaningfully compared across these samples. Therefore, further analyses were conducted within the extension data only. To test the hypothesis that interpersonal process is affected by borderline personality, the relative magnitudes of structural path coefficients were investigated. In dyads without borderline participants, these paths were equal across genders, and the trait (.49) paths were somewhat larger than the state (-.29) paths (Figure 3). A pattern that deviated from this would be regarded as indicating a differential interpersonal process in dyads with a borderline interactant.

Figure 4 shows the control model with measurement paths freely estimated and structural paths constrained to be equal across genders in the extension data. Measurement and error covariance paths have been removed for clarity of presentation. This model fit the data well ($\chi^2_{(26)} = 24.30$, *ns*, CFI = 1.000, TLI = 1.000, RMSEA = .000, PClose = .845) and did not decrement a model in which all structural paths were freely estimated ($\chi^2_{(2)} = 2.56$, *ns*).

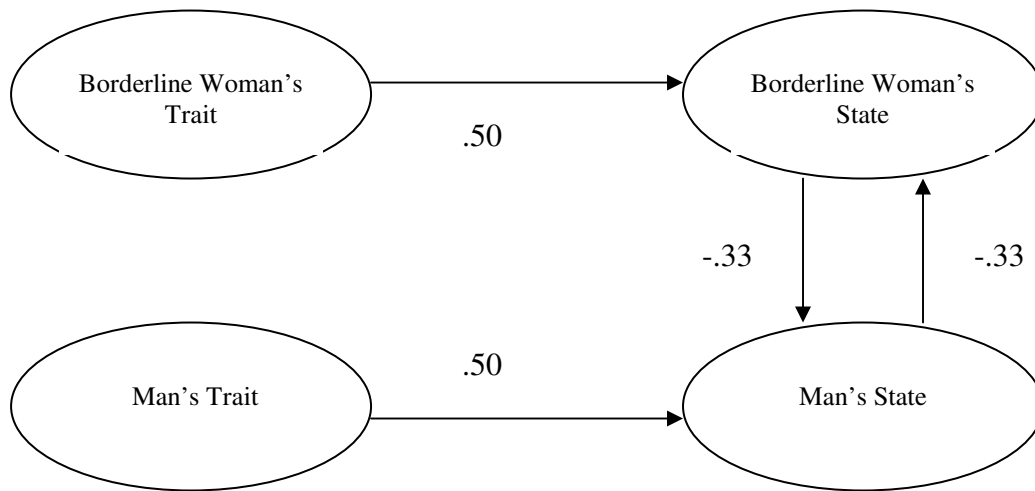


Figure 4. *Extension sample control model standardized structural path coefficients.*

The magnitudes of structural paths are very similar to those observed in the non-borderline dyads. A model in which trait and state paths were constrained to be equal showed a decrement in fit ($\chi^2_{(1)} = 53.38$, $p < .001$), suggesting that traits have a stronger influence on control-related behavior than does the interpersonal situation whether or not dyads include a borderline participant. This suggests that interpersonal process with regard to control is not disrupted by the inclusion of a borderline interctant.

Affiliation

Hypothesis 1. Complementarity replicates across non-borderline samples

This hypothesis states that model statistics will indicate that the comparison and replication samples come from the same population (i.e., the replication data will fit a model when all paths are constrained to be equal to the comparison model data). A model in which all replication sample measurement and regression paths were constrained to equal those from the Sadler and Woody model fit the data extremely well ($\chi^2_{(64)} = 50.14$, ns , CFI = 1.000, TLI = 1.000, RMSEA = .000, PClose = 1.000; Figure 5).

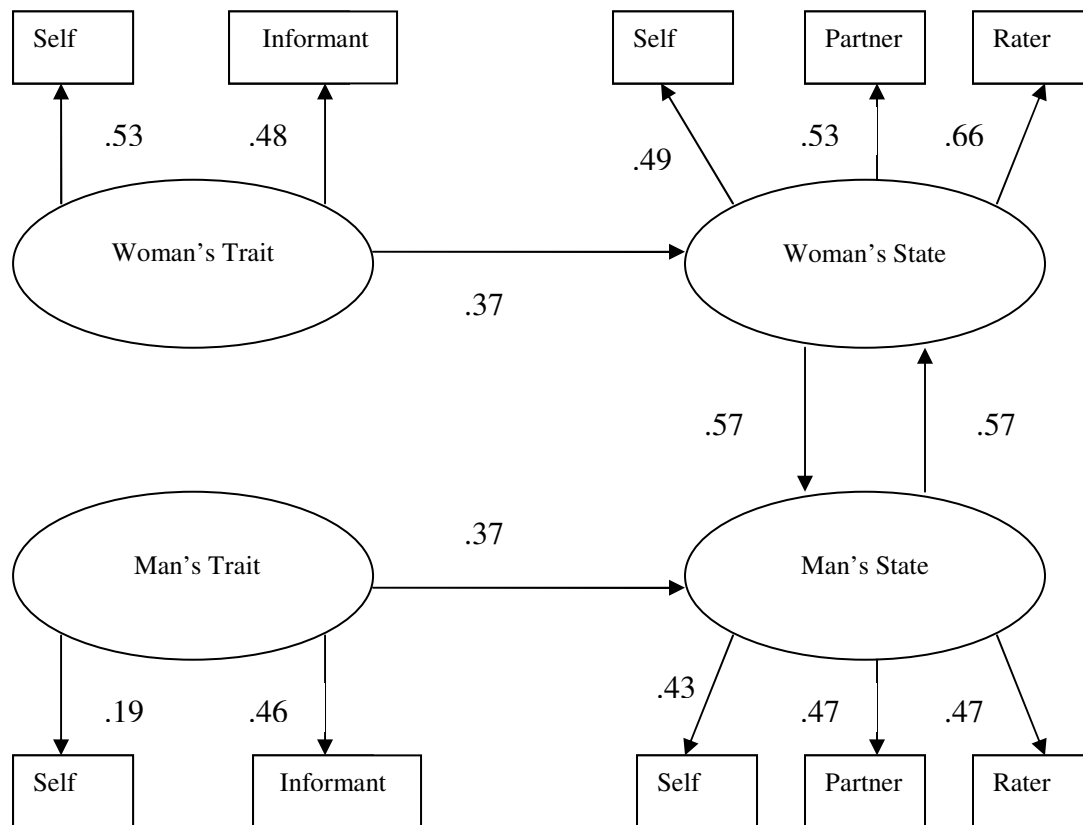


Figure 5. Standardized affiliation model coefficients with measurement and regression paths constrained to be equal across comparison and replication samples.

This suggests that the measurement model, the structure of interpersonal interaction, complementarity, the relative influence of states and traits, and the influence of gender were equivalent across these samples. Based on this result, the Sadler and Woody data were combined with the replication data for further analyses.

Hypothesis 2. Perceptual factors associated with borderline personality features disrupt interpersonal processes

As an initial test of model structure in the extension data, the three samples were compared. Given findings that path coefficients did not vary across comparison and replication samples, all paths constrained to be equal in these samples, whereas all paths were freed to vary in the extension sample. This model did not resolve after 100 maximum likelihood iterations. To investigate this misfit, a model was fit in the extension sample alone. Model fit was marginal ($\chi^2_{(24)} = 38.98$, $p < .05$, CFI = .951, TLI = .908, RMSEA = .074, PClose = .168). Examination of parameter estimates suggested problems with the ratings of woman's trait (path from latent trait to informant's rating modification index = 4.30). The correspondence between the trait ratings provided by the borderline woman and her nominated informant was also low ($r = .08$), and neither of the self- or informant-rating paths were significant in the model (critical ratio < 1.96). Finally, several modification indices suggested covarying the errors associated with these variables to other errors; none of these made conceptual sense. Thus, a model was tested with measured indicators of the woman's traits as separate variables. However, this model also did not converge. Modification indices suggested correlating the error terms associated with the rater's rating of the woman's situational behavior and the woman's rating of the man's situational behavior (modification index = 5.94). This path was freed, and the resulting model fit the data reasonably well ($\chi^2_{(24)} = 31.55$, ns , CFI = .975, TLI = .954, RMSEA = .053, PClose = .429).

These findings suggest that the structure of interpersonal process in dyads including an interactant with borderline personality features varies from that of dyads without a borderline interactant, and that this structural difference relates to perceptual factors. In particular, there was a low correspondence between the borderline women and people who knew them regarding affiliative traits. To test the hypothesis that perceptual

issues interfere with interpersonal relationships between a borderline and non-borderline interactant, this modified model was fit across all three groups with all measurement and structural paths freed to vary. This model fit the data well ($\chi^2_{(72)} = 61.93$, *ns*, CFI = 1.000, TLI = 1.000, RMSEA = .000, PClose = 1.000). Next, structural and measurement paths in the comparison and replication samples were constrained to be equal, whereas paths in the extension sample were left free. This did not decrement fit ($\chi^2_{(13)}$ difference = 22.25, *ns*). However, when measurement paths in the extension sample were constrained to be equal across all samples, fit was significantly worse ($\chi^2_{(22)}$ difference = 41.95, $p < .01$). Not surprisingly given the excellent model fit in the comparison and replication samples, modification indices for this model suggested freeing the paths between the error terms associated with the woman's self- and informant-rated affiliative traits in the comparison (modification index = 5.33) and replication (modification index = 8.29) data. When this path was freed, the model fit ($\chi^2_{(91)} = 88.56$, *ns*, CFI = 1.000, TLI = 1.000, RMSEA = .000, PClose = 1.000) and did not significantly decrement the model in which all paths were freed to vary ($\chi^2_{(19)}$ difference = 26.62, *ns*). This suggests that the perceptual issues associated with the model in the extension sample were restricted to the lack of correspondence between the ratings of affiliative traits provided by the borderline interactant and her informant.

Hypothesis 3. Interpersonal process is affected by borderline personality

Findings above indicating that the measurement models varied across extension and comparison/replication samples suggested that the regression paths could not be meaningfully compared across samples. Therefore, further analyses were conducted within the extension data. To test the hypothesis that interpersonal process is affected by borderline personality, the relative magnitudes of structural path coefficients were investigated across samples. In the combined comparison and replication samples, these paths were equal across genders and the state influence (.57) was somewhat stronger than the trait influence (.37) (Figure 5). A pattern that deviated from this would be regarded as indicating a differential interpersonal process in dyads with a borderline interactant.

Fit of the affiliation model in the extension data with all paths freely estimated was adequate ($\chi^2_{(23)} = 30.70$, *ns*, CFI = .975, TLI = .951, RMSEA = .054, PClose = .408).

Paths were not constrained across gender because of the different meaning of these paths given that the woman's trait influences were separated by measured variables, whereas this influence for the man was reflected by a single latent variable. This model is depicted in Figure 6, with measurement and error covariance paths removed for clarity.

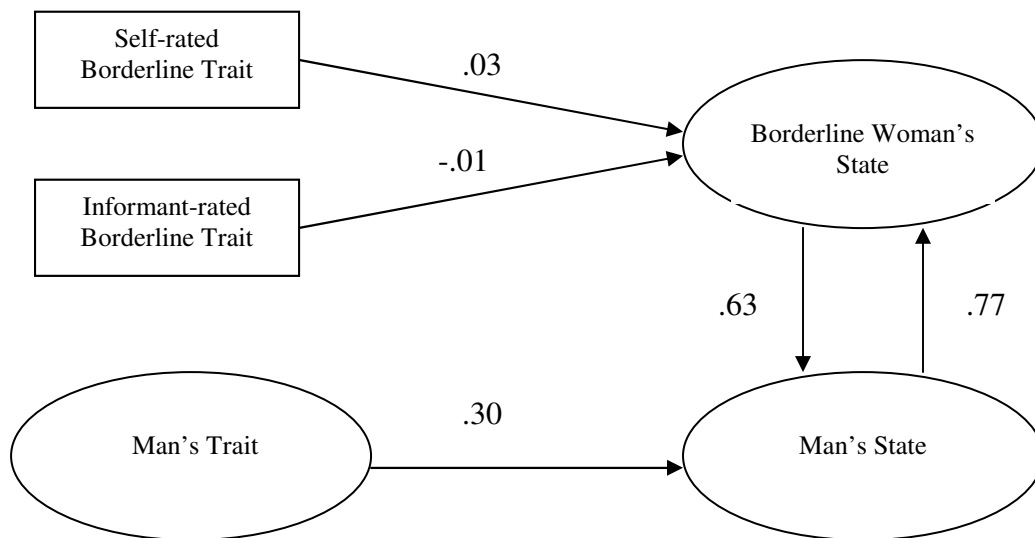


Figure 6. *Extension sample affiliation model standardized structural path coefficients.*

Path coefficients suggest a minimal influence of the borderline woman's traits on her situational behavior, and a stronger influence of the man's behavior than in the comparison/replication data (.77 to .57), consistent with the identity diffusion hypothesis. A similar pattern was observed with regard to the man's behavior, although this effect was weaker. The influence of the man's traits was .07 smaller in the extension than in the comparison/replication data. The effect from the woman's behavior to the man's was .06 larger in the extension than comparison/replication data.

4. CONCLUSIONS

Summary of Results

The general definition of personality disorder in both interpersonal theory and standard diagnostic practice involves interpersonal rigidity, or the tendency to be over-influenced by interpersonal traits and under-influenced by the behavior of others in interpersonal situations. However, previous research suggests that this definition fits borderline personality inadequately, in that the features of this construct both involve instability of interpersonal behavior (Russell et al., 2007) and affect (Cowdry et al., 1991) and these symptoms are, themselves, quite unstable (Grilo et al., 2005) as are normative personality traits among borderline individuals (Hopwood et al., in review). The current study was designed to assess the influence of three characteristics of borderline personality, misperception, identity diffusion, and impulsivity, on interpersonal interactions involving a borderline participant in the context of contemporary interpersonal theory (Pincus, 2005a, 2005b).

Three main hypotheses were tested. First it was hypothesized that the interpersonal effect of complementarity would replicate in dyads without borderline features using Sadler and Woody's (2003) structural equation model method. Complementarity asserts that the interpersonal pull of behavior is similar on affiliation (warmth begets warmth, coldness begets coldness) and opposite on control (dominance begets submissiveness, submissiveness begets dominance). Data were consistent with this hypothesis for both of the interpersonal dimensions in the non-borderline samples. Complementarity is a robust effect that has been observed and replicated using a variety of methods in individuals without psychopathology, suggesting that deviations in complementarity is a promising method for investigating the interpersonal effects of abnormal behavior. The Sadler and Woody design appears to be particularly well-suited for such research, given the close replication observed in these data.

Second, it was hypothesized that perceptual factors associated with borderline personality would interfere with normative interpersonal processes. The influence of perception among borderline interactants was observed for both affiliation and control,

but it operated differently across these dimensions. Data suggested that borderline individuals showed minimal agreement with people who know them with regard to affiliative traits. This may suggest that their interpersonal behavior is unstable, as described below, and thus very difficult to rate reliably, that borderline individuals have very different images of themselves with regard to affiliative behavior than people who know them, or both. Interestingly, data indicated that borderline participants may be more accurate in their perceptions of interaction partners' efforts to control or submit to them than were non-borderline participants. This suggests that individuals with borderline personality may be hyper-sensitive to others' efforts to control or submit to them.

Third, it was hypothesized that borderline personality would be associated with an interpersonal process that deviates from norms as observed in two non-pathological samples. Two competing hypotheses were made with regard to interpersonal process. First, it was hypothesized based on the concept of identity diffusion that borderline individuals would be influenced more by interpersonal situations and less by interpersonal traits. Conversely, based on the association of impulsivity with borderline personality, it was hypothesized that borderline behavior would not be predictable by either states or traits. It was further hypothesized that non-borderline participants who were interacting with borderline individuals would be more affected by the situation than their traits relative to their interactions with non-borderline participants. Data supported the identity diffusion hypothesis for affiliation but not for control. This finding partially supports Kiesler's (1996) description of borderline personality, and is somewhat consistent with other theoretical accounts that are less specific about the nature of interpersonal disruption on the interpersonal circumplex dimensions. The impulsivity hypothesis was not supported for either interpersonal dimension. Non-borderline interactants behaved similarly whether they interacted with a borderline or non-borderline partner with regard to control, but their affiliative behavior was slightly more influenced by the interpersonal situation than their traits when interacting with a borderline partner.

Findings can be interpreted as suggesting that individuals with borderline personality understand and follow normative rules of interpersonal behavior (i.e., complementarity), but do so in a manner that deviates from the norm. With regard to control, borderline individuals are likely to correctly perceive others' behavior, and to

react in kind. However, to the extent that they perceive the efforts by others to control or submit to them more accurately than is the norm, this may nevertheless be disruptive of interpersonal discourse. Affiliative behavior is likely to be more profoundly affected, because both perceptual and behavioral factors appear to be influenced by borderline features. Borderline individuals may perceive their own tendencies to be warm or cold very differently than others see them. Interestingly given that previous research has tended to focus on other-perception with borderline personality, current data suggest that perception of others did not differ as a function of borderline status. The interpersonal style of borderline individuals appears to exert minimal influence on their behavior in social situations, regardless of who is rating that style. Hyper-reactivity with regard to warmth vs. coldness is apparently experienced by interactants as a pull to become enmeshed in a hot, dynamic interchange. This dynamic has long been noted by clinicians, who have described borderline personality as notable for its association with extreme levels and sudden changes in closeness (e.g., Kernberg, 1975, 1976, 1984).

Results suggest that both perceptual issues and identity diffusion play prominent roles in the interpersonal difficulties associated with borderline personality. For both dimensions, the behavior of borderline patients was predictable by traits (control only) or situations (control and affiliation). This suggests that borderline individuals can be described in interpersonal terms in that they tend to understand and follow normative rules, more or less, and that they are not interpersonally impulsive in the sense that their behavior is predictable. Impulsive behavior may be secondary to interpersonal frustrations and their affective sequelae (Horowitz et al., 2006), and further exacerbate ineffectiveness and dissatisfaction. These results have important implications for theory regarding the etiology of borderline personality and clinical practice, as discussed below.

Theoretical Implications

Descriptors of borderline personality have been remarkably stable over time (Stern, 1938; APA, 1994) and across theoretical orientations. Interpersonal theory is an integrative nexus for the description of personality and psychopathology (Pincus, 2005a), and a premise of the current study was that interpersonal constructs could delineate how

borderline characteristics lead to maladaptive interpersonal behavior. Overall, varying theoretical orientations converge on a description of the borderline interpersonal process that is consistent with the results observed in this study. At the same time, current results specify the parameters around which this process occurs.

Traditional interpersonal theory posits that personality disorder is a consequence of rigid inflexibility in interpersonal style and an inability to appropriately adapt to environmental contingencies (Leary, 1957). However, whereas previous research projecting personality disorders onto the interpersonal circumplex does suggest that many of them can be reliably placed, this research has been inconsistent with regards to borderline personality (Hopwood & Morey, 2007), leading Kiesler (1996) to describe the disorder as characterized by variability on the interpersonal dimensions. Other research suggests marked instability of borderline personality in general (Schmideberg, 1957) and more specifically with regard to affect (Cowdry et al., 1991), interpersonal behavior (Russell et al., 2007), the diagnostic symptoms themselves (Grilo et al., 2005), and normative traits that underlie them (Hopwood et al., in review). The current research further supports the conclusion that the definition of personality disorder as characterized by rigidity and inflexibility does not capture borderline personality effectively. Rather, this construct is not reliably placed on the interpersonal circumplex because of its notable instability. However, these results and other (e.g., Russell et al., 2007) research suggests that borderline personality does have a particular interpersonal signature.

Kernberg's concept of identity diffusion provides a theoretical explanation for this finding. He notes that "these patients' capacity for encompassing contradictory ("good" and "bad) self- and object-images is impaired. . . (as) reflected in their maintaining object relations of either a need-gratifying or threatening nature. . . (and) the absence of an integrated self-concept" (1976, pp. 146-147). Individuals with borderline personality, according to this view, have identities that are undifferentiated and underdeveloped, particularly along the affiliative dimension. This pattern is maintained because "bringing together extreme loving and hateful images of the self and of significant others would trigger unbearable anxiety and guilt." Thus, borderline individuals maintain a chaotic inner world rather than developing a more integrated and differentiated sense of self and

others. In the absence of stable and effective internal resources, the interpersonal environment serves a regulating function for them.

Other theories also associate affiliative instability with borderline personality. For example, the interpersonal theorist Horowitz describes borderline personality as associated with inconsistent parenting, and in particular caretaker behavior that vacillates between hostile rejection and caring love. This results, as in Kernberg, in “contrasting perceptions (of others that) seem to have an ‘either-or’ quality” (2004, p. 212). Within this framework, this pattern generalizes to others in adulthood, and results in “split images of the self” (p. 214), causing abrupt shifts with regard to affiliative behavior, as was observed in the current study. Another interpersonal theorist, Benjamin (1993) also highlights the contribution of an early environment characterized by extreme love, ignoring, and attacking, and describes how this results in a pattern of alternating idealizing and devaluing on the part of borderline individuals.

The attachment theorists Bateman and Fonagy (2006) emphasize a lack of affective mirroring by important others in early development. Thus, rather than internalizing a stable self-image, a more chaotic and experience-alien image of others is internalized. This disorganized attachment pattern results in an incoherent sense of self that is reduced by externalization. This description may explain the intense need for both closeness but also separation. Whereas closeness is needed in order to regulate and explain experiences in the absence of an internal capacity to do so, separation and rejection are required in order to externalize the internal incoherence thereby experienced. Working from a cognitive-behavioral perspective, Linehan (1993) similarly links borderline personality to emotional invalidation (e.g., coldness disguised as warmth) on the part of caregivers which results in an inability to regulate emotion and erratic, impulsive, and often self-damaging behavior.

Multiple theorists have also associated the tendency to misperceive others with borderline personality. For Kernberg, this results from the impingement of internalized objects onto external experience, coupled with the relatively immature defense mechanisms that are amplified under the stress of interpersonal situations. Linehan views emotional dysregulation as the primary deficit in borderline personality, and notes that in an interpersonal context it can be associated with “non-psychotic forms of thought

dysregulation, including depersonalization, dissociation, and delusions (that) are at times brought on by stressful situations and usually clear up when the stress is ameliorated” (1993, p. 11).

However, whereas previous authors have tended to focus on misperception of others as primary and misperceptions of self as secondary and research on person perception among individuals with borderline personality also suggests weaknesses in the perception of others (Armeliu & Granburg, 2000; Donegan et al., 2003, Minzenberg, Poole, & Vinogradov, 2006), data from this study suggested problems with regard to self-perception of affiliative traits. Indeed, the only difference between borderline and non-borderline women with regard to perception of others involved acute sensitivity and awareness on the part of borderline individuals in perceiving others’ efforts to dominate or submit to them. This finding may reflect a method effect, as previous research has not tended to put individuals in actual interpersonal situations. Alternatively, it may reflect the lack of emotional intensity in the interaction used in this study, as many authors posit that misperception of others is most likely to occur in the context of affective arousal. In any case, given discrepant results, further research is needed to understand perceptual factors associated with borderline personality.

Clinical Applications

With regard to assessment, the current findings suggest the importance of assessing interpersonal behavior and personality organization, which appears to influence interpersonal dynamics. Research on the relation of interpersonal behavior to psychiatric problems suggests at least three classes of relations. Some disorders (e.g., personality disorders) may be associated with the inflexible and extreme use of specific interpersonal styles. Other clinical constructs, such as bulimia nervosa (Hopwood, Clarke, & Perez, 2007) and perfectionism (Kachin, Newman, & Pincus, 2001) are pathoplastic to interpersonal dysfunction, meaning that interpersonal problems are linearly independent but capable of exacerbating symptom expression. Research on borderline personality, including the current study, suggests that it does not fall neatly into either of these categories, but nevertheless manifests a particular interpersonal signature (Russell et al.,

2007). Overall, research linking interpersonal dysfunction to psychopathology suggests that interpersonal behavior is an important diagnostic consideration for most patients and may also be useful for informing the nosological framework of abnormal conditions more generally (Horowitz, 2004).

The current findings may also have important implications for psychotherapy with borderline patients. Consider a typical interaction implied by this study: the acutely aware borderline patient notices an effort on the part of the therapist to control her behavior, and communicates this to the therapist. The therapist may become defensive and deny having done this, or perhaps the therapist denies this because he is unaware that it occurred. This is interpreted as coldness by the borderline patient, who reacts in a very cold manner, precipitating coldness on the part of the therapist and a negative therapeutic interaction. Or, perhaps the therapist is aware of his efforts to control the borderline patient after she raises the issue, and he apologizes for this and communicates appreciation and concern. The patient correctly interprets this gesture as warm, but reacts with idealization of the therapist, perhaps setting up a standard he will eventually fail to meet. In either case, the transference and countertransference phenomena implied by these transactions likely recapitulate past and current relationships for the borderline patient and threaten the therapeutic alliance.

This suggests needs to both monitor the cognitive space in the therapy situation, including the perceptions of borderline patients and their therapists about their own and the other's behavior, as well as the need to maintain a stable relationship, particularly with regard to closeness and rejection. Put another way, the current data indicate that successful treatment of borderline patients would involve clarity with regard to interpersonal behavior in general and stability with regard to affiliation in particular. Consistent with previous psychotherapy theory and research, this process differs dramatically from the process of successful treatment for neurotic individuals. Building on the work of Kiesler (1996), Tracey (1993, Tracey & Ray, 1984) showed that a specific interpersonal process relates to therapeutic change in individuals without borderline personality. This process involves an initial stage of trust-building involving therapist behavior that complements the patient but also reinforces, somewhat, their maladaptive style. Once trust is sufficiently achieved, a second stage is initiated in which the therapist

moves away from the complementary style and toward an orientation that complements their goal for the patient. For instance, with a pathologically submissive patient, the therapist might initially be dominant (e.g., “I have techniques that will help you and if you follow my instructions you will feel better”) during the first stage, but transition to a submissive stance (e.g., “I am not sure how to help you, but I am confident you can figure this out for yourself”) in the second. This transition will increase anxiety on the part of the patient, motivating change in a healthy direction. The third stage, then, would involve a return to healthy complementarity (in this example, therapist submissiveness and patient dominance).

Theory and research suggest that this treatment will be unlikely to effectively treat borderline individuals, who may over-react to initial complementarity, have difficulties developing genuine trust because of their shifting patterns of self- and other-representations, and feel rejected during the transition to a less complementary position. Rather, the development of internal regulation (i.e., reflective function, ego strength, mentalization, mindfulness, etc.) through a clear and stable therapist is indicated for such individuals. Just as each theory of borderline personality articulates hypotheses that are at least partially supported by the present research as described above, each treatment emanating from these theories proposes a similar therapeutic process that is also supported, at least partially, by current results.

For example, the goal of Kernberg’s transference-focused therapy is “to help borderline personality organization patients develop images of themselves and others that are multidimensional, cohesive, and integrated” (Clarkin, Yeomans, & Kernberg, 1999, p. 29). This overall goal is achieved through a four-step process involving clarifying and defining dominant object relations, observing and interpreting the roles being played by patient and therapist, helping the patient maintain and tolerate internal conflict, and integrating formerly split-off part objects. Importantly, this process occurs in the context of a very stable stance on the part of the therapist. The traditional psychoanalytic method of technical neutrality contributes to this goal. This stance is also supported by individualized treatment contracts that make the patient aware of how the therapist will handle situations as they arise that may affect the treatment and require the therapist to handle such situations consistently. Therapists also deviate from standard psychoanalytic

practice by maintaining a specific referential frame that generalizes across the treatment as defined in the contract and choosing priority themes for each session in order to maintain consistency. In summary, rather than acting on interpersonal urges, the transference-focus therapist comments on and clarifies their own and the patient's interpersonal motives and behaviors in the context of a stable relationship: precisely the prescription implied by the results from this study.

Linehan's (1993) dialectical behavior therapy also advocates a treatment contract, a stable interpersonal stance on the part of the therapist designed to facilitate emotional and behavioral regulation, and the clarification of emotional and interpersonal motivations for potentially self-destructive urges. Again, an effective therapist will be clear and stable with borderline patients. Bateman and Fonagy's mentalization-based treatment also implies this stance: "the goal is to learn more about how a person is thinking and feeling . . . the therapist's task is to develop this joint process in therapy and to maintain the mentalizing focus throughout treatment" (2006, p. 119). The interpersonal theorists Horowitz and Benjamin also support techniques for treating borderline patients that involve a stable stance on the part of the therapist to promote patient security to explore here-and-now interpersonal motivations and their roots in the developmental environment.

However, despite the proliferation of psychotherapies designed to help borderline patients as well as research testing different models of psychotherapy, it remains among the most difficult of all psychiatric disorders to treat. In particular, borderline features are associated with increased risk for therapy dropout (Gunderson et al., 2003; Hopwood, Ambwani, & Morey, 2007; Skodol, Buckley, & Charles, 1983). At the same time, other research shows that borderline features can remit quite suddenly (e.g., Gunderson et al., 2003). Current data may imply an explanation for these findings. As noted by Linehan (1993) and others, problems associated with borderline personality are unlikely to manifest in the context of a persistently warm and supportive relationship. Thus, therapists who can maintain such a posture may note the dramatic remission in borderline symptoms as noted by Gunderson et al. At the same time, therapists who are pulled into a cold relationship with their borderline patients, and are thus fused with rejecting and attacking internal objects in the patient's mind, set up the therapy to end in premature

discontinuation. When feasible, multi-modal treatment teams may be optimal for the treatment of borderline patients (Hopwood, 2006). This approach, advocated by the developers of each of the schools of psychotherapy discussed above whether as a part of their treatment package or through the use of adjuncts, would provide a net of caregivers within which the borderline patient could fall should something go wrong with any given treater and could also reduce the burden felt by all treaters.

Study Strengths and Weaknesses

As discussed by Sadler and Woody (2003), the proposed method is consistent with five important principles regarding complementarity. First, the use of latent variables composed of trait and situational ratings from several individuals facilitates a direct assessment of potential problems related to different perceptions of behavior. Second, it analyzes complementarity with respect to control and affiliation separately, based on theory and research showing that the effect on control is the same across levels of affiliation and vice versa. Third, the model accommodates and compares the influence of traits and situations in the prediction of behavior. Fourth, it allows for bi-directional influence of each interactant on one another. Fifth, the path coefficients are designated in such a way that both complementarity and the specific nature of non-complementarity can be observed.

This method also targets behavior directly (Baumeister, Vohs, & Funder, 2007) and controls for a variety of measurement issues in complementarity research, such as different base rates of affiliative behavior, task-related stress, gender, and instrument (Kielser, 1996). However, there are some important limitations worth noting. The first involves the use of college students rather than individuals with clinical levels of BPD. Although this is not ideal and may compromise the ability for results to generalize to BPD populations, reducing confounds between proposed and comparison models was considered more important than ensuring clinical levels of borderline psychopathology. Furthermore, in Kernberg's conceptualization, borderline personality is not restricted to individuals with BPD, but rather applies to anyone with diffuse personality characteristics and primitive defenses, which is presumably a wider category.

Furthermore, the use of undergraduates was supported by research demonstrating the utility of studying sub-threshold borderline traits in students. Research indicates that borderline traits tend to manifest during adolescence and rates decline during middle age (McGlashan, 1986; Morey, 1991; Torgersen, Kringlen, & Cramer, 2001). Borderline traits are relatively common among non-clinical populations. For example, Torgersen reported a median percentage of non-clinical participants with a borderline diagnosis across ten studies of 1.35%, among the highest rates of all personality disorders. Trull (1995) found that borderline traits in college students can be reliably measured by PAI-BOR and that 14.5-24.5% of undergraduates were identified as having borderline features by self-report (PAI-BOR > 70T and PDQ-R > 4 symptoms), suggesting the prevalence of these traits in college students. In addition, borderline traits in college students reliably predict baseline psychopathology, personality variables, maladaptive coping styles, and interpersonal problems in a manner similar to the borderline diagnosis in clinical samples (Trull, 1995). Trull et al. (1997) found that at two-year follow-up sub-clinical borderline traits predict academic difficulties (e.g., lower GPA, probation, academic ineligibility) after controlling for ACT scores and gender (R^2 change = 0.11). Borderline features also predicted suicidal gestures across two years. Thus, available evidence suggests that borderline features can be meaningfully assessed and studied in non-clinical populations.

A second major limitation involves the fact that individuals were not familiar with one another. This design element was necessary to maintain comparability between comparison and collected samples. Research has generally confirmed that familiarity is associated with complementarity (Tiedens & Jiminez, 2003; Moskowitz, 1994). Research has also demonstrated that the expression of traits is associated with familiarity, such that unfamiliar individuals are generally more situationally reactive than are familiar individuals (Bluhm, Widiger, & Miele, 1990; Nowicki & Manheim, 1997; Roger & Schumacher, 1983). Sadler and Woody's data demonstrate the ability of the method they used to overcome both of these effects, as complementarity was demonstrated among unfamiliar individuals, and traits were as predictive of behavior as situations. However, the lack of familiarity may introduce new problems in the proposed data. Borderlines tend to experience maladaptive behavior with individuals they are close to, and may not be anticipated to act in a maladaptive way with individuals they do not know. This may

limit the likelihood of observing effects, and make it difficult to interpret null findings that may be related to the lack of familiarity.

A similar issue involves the task itself. In particular, although many theories posit interpersonal disruption as most likely to occur when borderline individuals are affectively aroused (APA, 1994; Linehan, 1993), the experiment used in this study was not designed to arouse affect. Furthermore, affect was not measured or controlled. It is important to note that the use of sub-threshold participants, the lack of familiarity between interactants, and the lack of affective arousal in the experimental situation would all be anticipated to decrease the likelihood of observing hypothesized effects. Thus, current findings demonstrate the power of borderline personality characteristics to influence interpersonal process, as well as the need for further research using a similar paradigm with more pathological individuals interacting with individuals they know in arousing situations.

A final limitation of this research and important area for future study involves the integration of current findings with related concepts involving interpersonal and other domains of behavior. For instance, research which integrates the current findings with research differentiating various kinds of interpersonal instability (Moskowitz & Zuroff, 2004; Russell et al., 2007) would be informative. It would be both theoretically and clinically important to know if stability across domains of functioning is related within people. Studies comparing interpersonal with affective and other kinds of instability in randomly sampled as well as borderline samples would therefore be particularly interesting. Finally, linking current and extant findings to research on developmental correlates of interpersonal behavior remains an important but under-investigated area.

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