

## ABSTRACTS OF THE 2005 POSTER SESSION OF THE AMERICAN PSYCHOANALYTIC ASSOCIATION WINTER MEETING

### THE RELATION OF REFLECTIVE FUNCTION TO NEUROCOGNITIVE FUNCTIONING IN PATIENTS WITH BORDERLINE PERSONALITY DISORDER

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Fonagy and colleagues coined the term *reflective function* (RF) to describe the developmental achievement whereby children acquire the capacity to mentalize the thoughts, feelings, intentions and desires of self and others (Fonagy et al. 2002). Drawing from developmental theory and research, they argue that the capacity for RF is dependent on the quality of interpersonal interactions, particularly the emotional relationship between infant and caregivers.

Reflective Function has been operationalized by Fonagy and colleagues in order to evaluate the quality of mentalization in the context of attachment relationships. In a study examining the role of parents' mentalizing skills and its relation to their infant's attachment pattern, Fonagy et al. (1996) found that RF mediated the relation between

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parental attachment security and infant attachment security in the Strange Situation. Slade and colleagues (Slade et al. in press; Grienenberger, Kelly, and Slade in press) found that a mother's RF mediates the relationship between atypical maternal behaviors and attachment security in their infants. Fonagy and colleagues found that among psychiatric patients reporting abuse, those who scored low on RF were more likely to be diagnosed with borderline personality disorder (BPD) compared to those who were abused but scored high on RF. Levy and colleagues (Levy 2004), in a randomized controlled trial (RCT) comparing Kernberg's Transference Focused Psychotherapy (TFP) to two other treatments, found that patients in TFP (but not the other treatments) showed significant increases in RF after one year of treatment.

However, the importance of these findings is clouded by the relative paucity of research on RF. Certainly its value has been established as an important construct for thinking about parenting behavior; however, less is known about its broader significance. Establishing the validity of the concept is an important step toward providing empirical support for the psychoanalytic notion of structural change as a central aspect of change in psychotherapy. In the present study we extend the validity of the RF construct by relating it to conceptually relevant external measures of neurocognitive functioning, specifically impulsivity and concept formation as measured by the Continuous Performance Task (Cornblatt et al. 1988) and the Wisconsin Card Sorting Test (Heaton et al. 1993) respectively.

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### **Method**

Three samples were used in the current study: patients diagnosed with BPD ( $N = 24$ ); a nonclinical comparison group matched to the patient group in terms of impulsivity and negative affect ( $N = 17$ ); and a "comparison" group reporting normal levels on these indices ( $N = 23$ ). Comparison participants were excluded from the study if they met criteria for any Axis II Personality Disorder. The three groups of participants were evaluated in terms of RF, scored from the Adult Attachment Interview (George, Kaplan, and Main 1985), and computer-based neurocognitive tasks, the Continuous Performance Task (CPT), and the Wisconsin Card Sorting Test (WCST). The relation between RF and neurocognitive functioning was examined using correlational methods.

**Results**

Relations between RF and neurocognitive functioning were examined using correlational methods. RF was unrelated to gender, ethnicity, age, or IQ. On the CPT, RF was not correlated with  $d'$ , a measure, of sustained attention. In contrast, there was a significant inverse relationship between RF and  $\beta$ , a measure of impulsivity. Low RF was correlated with high impulsivity. These findings were similar in both the BPD and the comparison samples.

On the Wisconsin Card Sorting Test, we found no relation between RF and nonperseverative errors, categories completed, or trials needed to complete the task. However, there were significant inverse relations between RF and both perseverative errors and Failure to Maintain the Set. Higher RF was correlated with fewer errors of both types. Perseverative errors occur when a participant persists with the wrong answer despite feedback that the answer is incorrect. Failure to Maintain the Set occurs when a participant changes the correct answer to an incorrect response despite feedback that the initial answer was correct. Failure to Maintain the Set is a relatively rare response. These findings were significant in both the BPD and the comparison samples.

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**Discussion**

Our findings extend the validity of the RF construct by relating it to conceptually relevant external measures of neurocognitive functioning in predicted ways and suggest that RF has broader implications than predicting parental behavior and infant attachment security. Our findings have important implications for understanding the broad and specific kinds of information-processing difficulties associated with low RF. Findings from the CPT indicate that low RF is correlated with difficulties with impulsivity, but not sustained attention. These findings suggest that the impulsivity seen in low RF individuals is not the result of a broad difficulty with attention. Findings from the WCST suggest a particular source of difficulty. Low RF relates to difficulties using feedback to both maintain correct response patterns and shift from incorrect ones.

The findings have significance for delineating aspects of focus in psychotherapy interventions for BPD. Most psychotherapy treatments (e.g., mentalization-based therapy or transference-focused therapy) for BPD focus on changing social cognitive processes related to impulsivity and negative affect. Understanding the underlying neurocognitive

aspects of social cognition may help in better understanding the mechanisms of action in psychotherapy, as well as in developing more focused treatments. Finally, in terms of prevention, the findings have implications for designing programs for children in high-risk groups (e.g., children who are impulsive and high in negative affect) that target remediation of neurocognitive deficits that over time may contribute to the development of BPD.

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