Theory of Mind and Emotion Regulation Difficulties in Adolescents With Borderline Traits

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Objective: Dysfunctions in both emotion regulation and social cognition (understanding behavior in mental state terms, theory of mind or mentalizing) have been proposed as explanations for disturbances of interpersonal behavior in borderline personality disorder (BPD). This study aimed to examine mentalizing in adolescents with emerging BPD from a dimensional and categorical point of view, controlling for gender, age, Axis I and Axis II symptoms, and to explore the mediating role of emotion regulation in the relation between theory of mind and borderline traits. **Method:** The newly developed Movie for the Assessment of Social Cognition (MASC) was administered alongside self-report measures of emotion regulation and psychopathology to 111 adolescent inpatients between the ages of 12 to 17 (mean age = 15.5 years; SD = 1.44 years). For categorical analyses borderline diagnosis was determined through semi-structured clinical interview, which showed that 23% of the sample met criteria for BPD. **Results:** Findings suggest a relationship between borderline traits and "hypermentalizing" (excessive, inaccurate mentalizing) independent of age, gender, externalizing, internalizing and psychopathy symptoms. The relation between hypermentalizing and BPD traits was partially mediated by difficulties in emotion regulation, accounting for 43.5% of the hypermentalizing to BPD path. **Conclusions:** Results suggest that in adolescents with borderline personality features the loss of mentalization is more apparent in the emergence of unusual alternative strategies (hypermentalizing) than in the loss of the capacity per se (no mentalizing or undermentalizing). Moreover, for the first time, empirical evidence is provided to support the notion that mentalizing exerts its influence on borderline traits through the mediating role of emotion dysregulation. J. Am. Acad. Child Adolesc. Psychiatry, 2011;50(6): 563–573. **Key Words:** borderline personality disorder, social cognition, mentalizing, theory of mind, emotion dysregulation

Disturbances in interpersonal relations are commonly considered one of the three core symptoms of Borderline Personality Disorder (BPD), alongside impulsivity and affective instability.[1-4] It has been proposed that dysfunction in mentalizing may lie at the foundation of these disturbances.[5-7] The concept of mentalizing has been in use in psychoanalytic literature since the 1970s[8] to refer to the process of mental elaboration, including symbolization, which leads to the transformation and elaboration of drive–affect experiences as mental phenomena and structures.[9] It was incorporated into the neurobiological, as well as the developmental literature [10,11] in the 1980s and 1990s, where it has been used interchangeably with the more frequently used concept of "theory of mind" (ToM). Premack and Woodruff[12] coined this term to refer to the capacity to interpret other people's behavior within a mentalistic framework to understand how self and others think, feel, perceive, imagine, react, attribute, infer, and so on.

A wide range of constructs that may be considered aspects of mentalizing have been investigated in relation to BPD in adults and are reviewed elsewhere.[6,13] Given the developmental

This article is discussed in an editorial by Drs. Marianne Goodman and Larry J. Siever on page 536.

Supplemental material cited in this article is available online.

nature of the mentalization theory of BPD[14] and the accumulating evidence of the seriousness of adolescent precursors of BPD,[15-17] mentalization could be an important early target for intervention for influencing the developmental trajectory of BPD.[9,18] To our knowledge, ToM (or mentalizing) has not yet been studied in relation to BPD in adolescents. There are two possible reasons for this. First, the diagnosis of personality disorders in adolescents is still associated with controversy[20-22]; because of the instability of personality in adolescence,[23] the stigma associated with a diagnosis of personality disorder and the suggestion that symptoms of BPD are better explained by Axis I symptoms[24]. However, there has been a steady increase in evidence supporting the diagnosis of juvenile BPD.[17,25] including evidence for longitudinal continuity,[26,27] a genetic basis,[28-30] overlap in the latent variables underlying symptoms,[16,31,32] and the risk factors[33-35] for adolescent BPD and the full-blown adult disorder, and evidence for marked separation of course and outcome of adolescent BPD and other Axis-I and Axis-II disorders.[19,27,36]

A further challenge for studies investigating mentalizing dysfunction in adolescent BPD relates to measurement. Most ToM tasks developed over the last 20 years show ceiling effects in older age groups or lack divergent validity for disorders other than autism spectrum disorders.[37] Developmentally more advanced tests of social cognition have been introduced in recent years,[38-40] but these tend to measure only singular aspects of mentalizing, and do not resemble the demands of everyday-life social cognition.[41] To address these limitations, Dziobek et al.[41] recently developed a naturalistic, video-based instrument for the assessment of ToM called the Movie for the Assessment of Social Cognition (MASC). The MASC not only allows for the usual dichotomous (right/wrong) response format, which is reflected in its total score, but also includes a qualitative error analysis where wrong choices (distracters) correspond to one of three error categories: (1) "less ToM" (undermentalizing) involving insufficient mental state reasoning resulting in incorrect, "reduced" mental state attribution, in which case a research participant may refer to mental states but in an impoverished way; (2) "no ToM" (no mentalizing) involving a complete lack of ToM; in this case, a research participant may fail to use any mental state term in explaining behavior; and (3) "excessive ToM" (hypermentalizing) reflecting overinterpretative mental state reasoning.[42] In addition, the test considers different mental state modalities (thoughts, emotions, intentions) with positive, negative, and neutral valence.[41]

The first aim of the current study was to investigate the relation between borderline traits and mentalizing as measured by the MASC in a clinical sample of adolescents, to assess the specificity of mentalizing dysfunction in psychopathology involving BPD. We were particularly interested in the relation between hypermentalizing and borderline features. The concept of hypermentalizing has a strong tradition in the psychoanalytic literature, where it typically refers to excessive use of projection.[43] In the neuroscience literature, the concept is used by Frith et al.[44] in describing the attribution of higher levels of intentionality than appears contextually appropriate. In particular, Frith et al. used the term "hypermentalizing" to refer to mentalizing errors occurring through the overinterpretation or overattribution of intentions or mental states to others. There is considerable evidence for anomalous social cognition involving overinterpretive or hypermentalizing associated with BPD in adults, including reports of a general hypervigilance and hypersensitivity to social-emotional stimuli,[45-47] and findings suggesting that these individuals have difficulty with suppressing irrelevant aversive information.[48] Moreover, most studies support the notion that those with BPD are able to recognize mental states in the self and others, with some studies even demonstrating enhanced capacity to discriminate the mental state of others from expressions in the eye region of the face.[49] On this basis, we predicted that BPD features would be exclusively related to hypermentalizing or excessive ToM (as opposed to undermentalizing or no mentalizing), from both a dimensional (trait) and categorical (diagnosis) perspective.

In examining this relationship, we had to control for several potential confounding factors. Studies have shown that being older[50] and female[51] are both correlated with increased ToM understanding. A gender difference has also been reported for BPD traits,[52] although not all studies find predominance of female individuals in adolescent BPD samples.[27] The most common comorbid disorders with BPD have known social-cognitive deficits, particularly externalizing[53] and internalizing[54] problems on Axis I and