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ASSESSMENT

Convergence in Reports of Adolescents' Psychopathology: A Focus on Disorganized Attachment and Reflective Functioning

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Although convergence in parent–youth reports of adolescent psychopathology is critical for treatment planning, research documents a pervasive lack of agreement in ratings of adolescents' symptoms. Attachment insecurity (particularly disorganized attachment) and impoverished reflective functioning (RF) are 2 theoretically implicated predictors of low convergence that have not been examined in the literature. In a cross-sectional investigation of adolescents receiving inpatient psychiatric treatment, we examined whether disorganized attachment and low (adolescent and parent) RF were associated with patterns of convergence in adolescent internalizing and externalizing symptoms. Compared with organized adolescents, disorganized adolescents had lower parent–youth convergence in reports of their internalizing symptoms and higher convergence in reports of their externalizing symptoms; low adolescent self-focused RF was associated with low convergence in parent–adolescent reports of internalizing symptoms, whereas low adolescent global RF was associated with high convergence in parent–adolescent reports of externalizing symptoms. Among adolescents receiving inpatient psychiatric treatment, disorganized attachment and lower RF were associated with weaker internalizing symptom convergence and greater externalizing symptom convergence, which if replicated, could inform assessment strategies and treatment planning in this setting.

When it comes to interrater agreement in reports of youths' psychological symptoms, low rates of convergence are the norm (De Los Reyes & Kazdin, 2005). In general, convergence in informant reports is lower in reports of internalizing as compared to externalizing behaviors (De Los Reyes et al., 2015; Duhig, Renk, Epstein, & Phares, 2000), perhaps because internalizing symptoms are less readily observable

(De Los Reyes & Kazdin, 2005). Degree of convergence in parent–youth reports has the potential to reveal important insight into the parent–child relationship and can have important implications for treatment planning (De Los Reyes, Henry, Tolan, & Wakschlag, 2009; De Los Reyes & Kazdin, 2005; De Los Reyes & Ohannessian, 2016; De Los Reyes, Thomas, Goodman, & Kundey, 2013). Generally speaking, convergence is higher among parent–child dyads with higher quality relationships (e.g., De Los Reyes & Kazdin, 2006).

Although ample research documents correlations between convergence in reports of youth's symptoms and

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parent–child relationship factors (e.g., De Los Reyes & Kazdin, 2006), including parent–child attachment quality, much remains to be understood regarding predictive interpersonal and intrapersonal factors underlying convergence. Here we provide the third exploration of the links between youth attachment and convergence in reports of youth’s psychopathology. Exploring our hypotheses within a high-risk sample of adolescents receiving psychiatric inpatient care, a population for whom informant convergence is likely to have the strongest impact on assessment and treatment, we focus on the form of attachment insecurity most robustly associated with psychopathology (disorganized attachment; Lyons-Ruth, Alpern, & Repacholi, 1993; Lyons-Ruth & Jacobvitz, 2008), and a psychological capacity known to be impaired in psychopathology (reflective functioning [RF]; e.g., Sharp, Croudace, & Goodyer, 2007), as predictors of low convergence.

Attachment Theory as an Organizing Framework

Attachment theory provides a compelling model for the investigation of psychological development as a function of co-constructed parent–child relationship quality (Bowlby, 1980), offering a lens through which to understand parent–child convergence. Emerging from parent–infant interactions is a set of implicit rules, called an internal working model of attachment (IWM; Bowlby, 1980; Hamilton, 2000), with considerable developmental continuity from which the child learns about the self, relationships, and the world. Parental responsiveness to infant needs results in attachment security, the internalized confidence that attachment figure(s) will be psychologically and physically available, whereas inconsistent or unresponsive parental care results in an insecure IWM (Bowlby, 1969).

In addition to these organized forms of attachment, which represent consistent strategies for responding to activations of the attachment system (Main, 2000), disorganized attachment is considered a breakdown in attachment strategy (Hesse & Main, 2000), epitomized by an infant who freezes (presumably in fear) upon reunion with an attachment figure. Disorganized attachment is thought to develop when, by virtue of having been exposed to frightening or frightened caregiver behavior (Madigan et al., 2006; Main & Hesse, 1990), such as extreme passivity, role reversal, abuse, withdrawal, or dissociative parental behavior (Lyons-Ruth, Bronfinan, & Parsons, 1999), young children are confronted with competing impulses to approach and avoid the parent. Disorganized attachment rates are low in general but are highest among high-risk samples (e.g., Madigan et al., 2006). Unsurprising, in comparison to children with secure and organized-insecure attachment, disorganized youth are at greater risk for psychopathology (Brumariu & Kerns, 2010; Colonesi et al., 2011; Fearon, Bakermans-Kranenburg, Van IJzendoorn, Lapsley, & Roisman, 2010; Lyons-Ruth et al., 1993; Lyons-Ruth &

Jacobvitz, 2008; O’Connor, Bureau, McCartney, & Lyons-Ruth, 2011), perhaps because they lack a coherent strategy for dealing with stressors (Main & Solomon, 1990). Due to the low base rate of disorganized attachment, researchers interested in examining the phenomenon often work with high-risk samples, in which the incidence of disorganized attachment is likely to be higher.

Convergence in Parent–Youth Reports: Inter- and Intrapersonal Correlations

Low convergence in ratings of youth psychopathology is linked with characteristics of both members of the parent–youth dyad, as well as the context of observation (De Los Reyes et al., 2015). We focus on inter- and intrapersonal attachment-based correlates of convergence.

Interpersonal Correlates

Attachment IWMs influence the awareness and disclosure of vulnerable internal experiences (Cassidy, 1994) and, therefore, could influence informant convergence. Secure children enjoy open access to their internal experiences and readily share these with trusted caregivers; in contrast, children with insecure attachment may be unaware of or unable to share with attachment figures details regarding their most vulnerable experiences due to their fears of jeopardizing their caregivers’ psychological or physical availability (Bowlby, 1980). Thus, from a theoretical perspective, insecure children should exhibit lower levels of convergence in reports of symptoms as compared to secure children. To date only two studies have evaluated the links between attachment and informant convergence, and both have explored these associations in community samples of adolescents and have exclusively focused on the differences between insecure-organized and secure youth. Using the Adult Attachment Interview as a measure of attachment (George, Kaplan, & Main, 1985), Berger and colleagues (Berger, Jodl, Allen, McElhaney, & Kuperminc, 2005) found that as compared to secure adolescents, both dismissing and preoccupied adolescents had greater discrepancies in symptom reports—dismissing adolescents had less convergence in informant reports of externalizing symptoms only (measured in terms of absolute agreement), whereas preoccupied adolescents were more likely to overreport both externalizing and internalizing symptoms relative to parent-reported youth symptoms. Further, using the continuous measure of attachment security on the Adult Attachment Interview (narrative coherence), Ehrlich, Cassidy, and Dykas (2011) found that greater adolescent attachment security was associated with greater convergence (absolute agreement) in reports of adolescent depressive symptoms and parent–adolescent conflict.

Although invaluable in revealing a link between informant convergence and attachment, the contribution of these

initial studies is tempered by recent advances in our statistical understanding that suggest that the difference score methodology (subtracting one reporter's score from that of another), which these studies employed, results in erroneous findings (Laird & De Los Reyes, 2013, for a demonstration of the risks of difference scores). Researchers now recommend the use of polynomial regressions to avoid the statistical problems raised by the use of difference scores.

In addition to the pressing need for informant convergence studies employing the polynomial regression analytic approach, there is also a mandate to explore links between disorganized attachment, the form of attachment associated with the gravest clinical risk (O'Connor et al., 2011), and informant convergence. Although no empirical work has explored the links between disorganized attachment and convergence, rich theorizing regarding disorganized youth's relationships with their parents enables the generation of hypotheses regarding their associations. In comparison to children with secure and organized-insecure attachment, children with disorganized attachment may have the poorest convergence with parents in perceptions of their internalizing symptoms. These children may be caught in an approach-avoid conflict with respect to the disclosure of depressive and anxiety symptoms, contending with dual impulses to run toward and away from their parents when they experience distress (Main & Hesse, 2000). The aftermath of this internal conflict may take the form of confused and contradictory communication with parents in times of need, which could result in low convergence between parent and youth perceptions of adolescent depression and anxiety.

Disorganized youth attachment may also be associated with convergence in reports of externalizing symptoms, though in the opposite direction. Because the internalizing source of disorganized children's behavior may elude comprehension or be frightening to contemplate for youth and parents alike, disorganized youth and their parents may naturally focus on adolescents' external behavior. This emphasis on behavior could lead to higher levels of convergence in reports of externalizing problems.

In addition to the general importance of studying the disorganized-convergence link, there is an urgent need for the links between disorganized attachment and convergence to be explored among populations with psychopathology symptoms in the severe range. The lack of focus on disorganized attachment in the informant convergence literature may in part be due to the low base rate of disorganized attachment (e.g., Bakermans-Kranenburg & Van IJzendoorn, 2009), but given the extremely high rate of disorganized attachment in clinical samples, as well as the potential treatment implications of informant discrepancies, work examining these questions is needed. However, to date, these relations have not been explored, constituting a striking gap in the literature given that low levels of convergence may have the farthest-reaching treatment implications for this group of youth. Although, based on attachment

theory and research, we anticipated that disorganized attachment would be associated with convergence, we recognized that the relatively greater symptom severity within clinical samples could result in greater agreement and the potential elimination of attachment-based differences in convergence. Indeed, the results of a recent meta-analysis suggested that parent-adolescent informant agreement is generally higher in clinical samples than what has been found in community samples (Rescorla et al., 2017), which may suggest that there is less variability to explain.

Intrapersonal Correlates

In attempting to make sense of the psychological capacities underlying patterns of convergence, researchers speculate that lower convergence in parent-child reports may reflect informants' lack of insight into their own and one another's experiences (Ferdinand, Van Der Ende, & Verhulst, 2004; Grills & Ollendick, 2002; Renk, Donnelly, Klein, Oliveros, & Baksh, 2008). However, much remains to be uncovered about this phenomenon. For instance, a unidirectional approach to understanding parent-child convergence is likely too simplistic, necessitating models that take into account bidirectional and dyadic effects. To have high convergence, either the parent must have a clear sense of the child's personality, thoughts, and feelings based on refined reflective processes, or the communication between the dyad members must be open and frequent (Borelli, St. John, Cho, & Suchman, 2016). Because parents of adolescents spend a great degree of time apart from their children, as compared to parents of younger children, they likely have fewer opportunities to directly observe their children's behavior (De Los Reyes & Kazdin, 2005), thereby increasing the importance of these reflective and communicative factors (Borelli et al., 2016).

One psychological capacity discussed, but scarcely examined, as a potential predictor of convergence in reports is mentalization (Borelli, Luthar, & Suchman, 2010), or the capacity to understand one's own and others' mental states (thoughts, feelings, intentions; Fonagy, Gergely, Jurist, & Target, 2002; Fonagy & Target, 1997). Adopting a mentalizing stance in understanding behavior has been operationalized as RF (Fonagy et al., 2002). RF can be self-focused (i.e., mentalizing that focuses on understanding one's own thoughts and feelings) or other-focused (i.e., mentalizing that focuses on understanding others' thoughts and feelings; Fonagy et al., 2002; Suchman, DeCoste, Leigh, & Borelli, 2010). RF can facilitate a more nuanced understanding of the inner life of the self and the other person, which in turn could aid communication between parents and children (Fonagy et al., 2002) and promote an enhanced awareness of the child's psychological struggles (Borelli et al., 2010; Ostler, Bahar, & Jessee, 2010). In contrast, low RF may confer risk for misunderstanding and discordance in perceptions of the child's experiences. For instance, when a child

has low self-focused reflective capacities, he or she may be unaware of underlying emotions and thoughts that drive behavior, making it difficult for the child to communicate these needs to others. A similar dynamic could occur if the parent has low other-focused RF – the parent may have a limited ability to understand the child’s behavior from the perspective of his or her mental states. In fact, people with poor RF engage in a process known as prementalizing, in which they view others’ mental states in a hostile or insensitive manner (Rutherford, Maupin, Landi, Potenza, & Mayes, 2016), such as when a parent claims that a 13-year-old is behaving disobediently because he wants to make the parent feel incompetent. Prementalizing circumvents the process of understanding behavior from the perspective of underlying mental states, resulting in inaccurate attributions of the cause of behavior to traits of the individual (Burkhart, Borelli, Rasmussen, Brody, & Sbarra, 2017).

Although no studies have directly examined RF for its association with informant convergence, one study (De Los Reyes, Lerner, Thomas, Daruwala, & Goepel, 2013) explored a construct related to mentalization—adolescents’ and parents’ abilities to decode others’ emotions—as a predictor of convergence in adolescent and parent reports of beliefs about adolescents’ daily tasks. These authors found that lower emotion recognition, assessed via a performance-based measure, was associated with greater parent–adolescent discrepancies. Thus, preliminary evidence points toward the notion that a poorer ability to mentalize for others may be related to lower convergence in perceptions of beliefs.

In addition to its role in understanding underlying psychological states, RF of both the adolescent and the parent may be implicated in convergence of perceptions of adolescents’ psychological symptoms (Borelli et al., 2010; Ostler et al., 2010), though the link between the two could depend on the type of symptom (Borelli et al., 2010). Given that internalizing symptoms exist as internal experiences, low self-focused RF could pose a challenge to accurately perceiving these symptoms. Specifically, an adolescent who has poor self-focused RF may be unaware of or unable to understand and express his or her internalizing symptoms, which could lead to low convergence. Similarly, if a parent is unable to understand his or her child’s mental states (i.e., if a parent has low other-focused RF), he or she may develop views of his or her child’s symptomology that are incongruent with the child’s actual experience of his or her symptoms, resulting in low convergence. Although no studies have explicitly examined RF as a predictor of convergence in informant reports of youth symptoms, one study involving school-age children of parents with substance use disorders found that children with lower mentalization scores had higher scores on an underreporting validity scale on a trauma symptom checklist (Ostler et al., 2010).

With respect to externalizing symptoms, high RF may actually impede informant convergence, whereas low RF

may facilitate it. Youth with low self-focused RF may be less focused on mental states and more focused on events occurring in the external world, which ironically may contribute to greater congruence in perceptions of externalizing behaviors. Similarly, parents with low other-focused RF may be better able to perceive their children’s externalizing behaviors without considering their children’s thoughts and feelings to distract or confuse them. With only theory to serve as a guide when considering the associations between convergence and RF, we acknowledge that our hypotheses are necessarily exploratory and that our findings would need replication.

The Current Investigation

Given that much remains to be understood about the association between attachment and parent–adolescent informant convergence, this study contributes to the literature in four ways: (a) providing the first examination of disorganized attachment and convergence; (b) investigating the relation between attachment and convergence in informant reports of psychopathology in a psychiatric inpatient sample, in which psychopathology symptoms are typically more readily observable (De Los Reyes & Kazdin, 2005), rates of disorganized attachment are higher, and the treatment implications of convergence are potentially the most significant; (c) by using statistical techniques recently shown to yield more accurate results (see Laird & De Los Reyes, 2013); and (d) by providing the first examination of one intrapersonal predictor of informant convergence, RF.

Hypotheses

As compared to youth with organized types of attachment, we predict that adolescents with disorganized attachment will have lower convergence in parent–youth reports of adolescent internalizing symptoms and higher convergence in reports of externalizing symptoms (Hypothesis 1). Second, we explore the links between RF and informant convergence (Hypothesis 2). Here we predict that lower adolescent self-focused RF and lower parental other-focused RF will be associated with lower convergence in reports of adolescent internalizing symptoms. We also predict that adolescents’ higher self-focused RF and parents’ higher other-focused RF will predict lower convergence in reports of externalizing symptoms.

METHOD

Participants

Participants and one of their parents (whichever parent was interested in participating) were recruited from an adolescent inpatient psychiatric facility treating 12- to 17-year-olds in a southern urban area of the United States. At this facility,

a milieu-based treatment is used that emphasizes improvements in social-cognitive capacity, emotion regulation, maladaptive behaviors, and family relations by combining cognitive-behavioral, family systems, and interpersonal-psychodynamic theoretical approaches. Adolescents participate in intensive psychopharmacologic and psychotherapeutic interventions in addition to structured therapeutic activities daily through their stay. The adolescent unit from which participants were recruited typically serves adolescents with a history of treatment refractory emotional and behavioral symptoms and length of stay ranges from 4 to 6 weeks. In the current study, we examine data from adolescents who were admitted into the facility between July 2009 and March 2013. Inclusion criteria were sufficient proficiency in English to consent to research and complete the necessary assessments, and exclusion criteria were a diagnosis of schizophrenia or another psychotic disorder, an autism spectrum diagnosis, or an IQ of less than 70.

After inclusion and exclusion criteria were applied, the sample included $N = 265$ ($M_{\text{age}} = 15.38$, $SD_{\text{age}} = 1.43$; 49.4% female adolescents; 14.3% adopted) and the primary caregiver who completed the intake assessment (80.2% mothers, 19.8% fathers). The median household income of the participants' families was between \$80,000 and \$89,999; a minority of the participants' treatment costs (8%) were covered by financial aid. The majority (66.2%) of parents held a bachelor's degree or less. The sample was ethnically representative of the area (87.4% Caucasian, 4.1% Asian, 2.2% African American, and 6.3% multiracial) but homogenous. Most youth (85%) had not previously been treated at the inpatient facility but had a family history of psychiatric problems (88.6%). A minority (28.8%) had attempted suicide within the last year or ever (34.6%). Average Global Assessment of Functioning score at admission was 41.4 ($SD = 58.81$). Upon admission, reasons cited that contributed to the current hospitalization in declining order of frequency included suicidal or self-injurious behaviors or plans; escalating oppositional, impulsive, or risky behavior; decline in functioning; failed outpatient, inpatient, or medication treatment; school problems or truancy; aggression or rage; substance use; transfer from an acute level of care; traumatic event; running away; diagnostic clarity; and legal problems.

Procedure

Written documentation of parental consent was obtained by the researchers on the day of admission to the unit, whereas adolescents provided assent for their participation. Youth and their parents completed online questionnaires and in-person interviews during the hospital stay. The majority of assessments were completed within the first 3 days of admission, although several assessments were delayed no later than 2 weeks into the patients' stay at the clinic. All questionnaires and interviews were completed during sessions with researchers in a private room on the in-patient

unit. There were no rewards or incentives offered for participation. For more details on the battery of assessments completed as part of the larger study, see Sharp et al. (2009).

Measures

Youth Attachment

The Child Attachment Interview (CAI; Target, Fonagy, & Shmueli-Goetz, 2003) is a semistructured interview for youth that assesses mental representations of attachment to a caregiver. The interview consists of 19 questions that address aspects of the child's current and past relationship with their caregivers (e.g., "What happens when Dad gets upset with you?"). The majority of the youth in this sample (97.4%) answered questions regarding two attachment figures (mother [figure] and father [figure]). Certified raters code the interview using eight 9-point scales (e.g., idealization) with a score of 1 indicating the absence of the construct and a score of 9 indicating a high level of the construct. Using scale scores and interview behavioral analysis, coders assign each participant a best-fitting attachment classification: secure, dismissing, preoccupied, or disorganized. Disorganized attachment is assigned when children exhibit behaviors including abrupt and distinct changes in affect, bizarre descriptions of events and associations, interrupted speech (e.g., lengthy, unexplained pauses or sudden halts in speech), confusing the identities of people in stories without explanation, talking about dead people as if they are alive, exhibition of hostile behaviors toward the interviewer, inappropriately familiar interactions with the interviewer and inconsistencies between verbal and nonverbal behavior (Shmueli-Goetz, Target, Fonagy, & Datta, 2008; Target et al., 2003). These markers most often, but not exclusively, appear during adolescents' discussion of loss, trauma, or frightening experiences.

Although the CAI was developed for use in middle childhood, with well-established reliability and validity across community and clinical samples of this age (e.g., Borelli, Somers, et al., 2016a, 2016b; Shmueli-Goetz, Target, Datta, & Fonagy, 2008; Target et al., 2003), it has more recently been evaluated among adolescents (see Privizzini, 2017, for a review). One study evaluated the psychometric properties of the CAI in the current sample of inpatient adolescents and found substantial interrater reliability and validity (Venta, Shmueli-Goetz, & Sharp, 2014). Other studies that used the CAI in adolescent samples (community, patient, and institutionalized) have also found good reliability with Kappa statistics ranging from .70 to .79 and intraclass correlations for scales ranging from .65 to .94 (Glazebrook, Townsend, & Sayal, 2015; Joseph, O'Connor, Briskman, Maughan, & Scott, 2014; Scott, Briskman, Woolgar, Humayun, & O'Connor, 2011). Validity has also been found in the prediction of self-harm and suicidality, parent-child relationship quality, and

psychiatric symptoms (Glazebrook et al., 2015; Jardin, Venta, Newlin, Ibarra, & Sharp, 2017; Joseph et al., 2014; Scott et al., 2011; Sharp et al., 2016; Venta, Sharp, & Newlin, 2015). CAI classification is not correlated with age, sex, socioeconomic status, ethnicity, verbal IQ, expressive language ability, classification on a nonrelational interview, or whether the child lives with only one parent or two parents (Borelli, Somers, West, Coffey, & Shmueli-Goetz, 2016; Target et al., 2003). In the current sample, interrater reliability obtained from double-coding of a sample of $n = 46$ randomly selected interviews was satisfactory, intraclass correlation coefficient(2)_{narrative coherence} = .64; $\kappa_{\text{disorganized/organized}}$ = .59_{mother} and .64_{father}.

Internalizing and Externalizing Symptoms

The Youth Self-Report and Child Behavior Checklist (YSR/CBCL; Achenbach & Rescorla, 2001) are, respectively, youth-report and parent-report measures of youth psychopathological symptoms. The YSR includes items assessing internalizing (*I would rather be alone than with others*; INTERN_{YOUTH}) and externalizing symptoms (*I destroy my own things*; EXTERN_{YOUTH}), and the CBCL includes corresponding items assessing the parent's perception of the youth's internalizing (*Would rather be alone than with others*; INTERN_{PARENT}) and externalizing symptoms (*Destroys his/her own things*; EXTERN_{PARENT}). Respondents rate each item on a 3-point Likert scale ranging from 0 (*not true*) to 2 (*very true or often true*), with higher scores signifying more severe symptom psychopathology. The reliability and validity of the YSR and CBCL have been demonstrated extensively (Achenbach & Rescorla, 2001). In this sample, internal consistency was acceptable, YSR: $\alpha_{\text{intern}} = .92$, $\alpha_{\text{extern}} = .90$; CBCL: $\alpha_{\text{intern}} = .85$, $\alpha_{\text{extern}} = .92$.

Reflective Functioning

We used two parallel questionnaires in this study to assess (a) adolescents' RF (Reflective Functioning Questionnaire for Youth [RFQY]; Sharp et al., 2009) and (b) parents' RF (Reflective Function Questionnaire [RFQ]; Fonagy & Ghinai, 2008), respectively. These questionnaires consist of 46 items loading onto two scales, one assessing *self-focused RF* (23 items: [reverse-scored] *I always know how I feel*; RFQY_{self}/RFQ_{self}) and one assessing *other-focused RF* (23 items: *In an argument, I keep the other person's point of view in mind*; RFQY_{other}/RFQ_{other}).

On the RFQY, items are rated on a 6-point scale ranging from *strongly disagree* to *strongly agree*. The RFQY measure demonstrates adequate construct, criterion, and convergent validity among the current sample of adolescent inpatients (Ha, Sharp, Ensink, Fonagy, & Cirino, 2013). In this study, we used RFQY_{self} as a predictor of convergence in reports of symptoms. Internal consistency of the scale was satisfactory ($\alpha_{\text{self-focused}} = .86$).

On the RFQ, participants rate items on a 7-point scale ranging from *completely disagree* to *completely agree*. Construct, convergent, and divergent validity of the RFQ have been demonstrated (Fonagy et al., 2016). Due to our desire to measure parents' capacities to mentalize regarding their adolescents, in this study, we used parents' RFQ_{other}, for which internal consistency was moderate ($\alpha_{\text{allparents}} = .65$).

Data Analytic Plan

First, we examined zero-order correlations among study variables and tested for gender differences in study constructs. We employed CBCL t scores in all analyses and therefore did not control for children's age or gender. To test all hypotheses, we followed recommendations for assessing informant convergence (Laird & LaFleur, 2016) and used a polynomial regression framework. We analyzed convergence rather than directional discrepancies based on prior findings suggesting correlations between absolute value discrepancies (i.e., low convergence), rather than directional discrepancies, and attachment (Berger et al., 2005; Ehrlich et al., 2011); using the polynomial approach to evaluating informant convergence reveals the presence of absolute, rather than directional, aspects of convergence (see Laird & LaFleur, 2016, and Laird & De Los Reyes, 2013, for descriptions of these different analytic approaches).

In a series of hierarchical multiple regressions, we used parent report as the independent variable (x) and adolescent report as the dependent variable (y), with disorganized attachment/RF as the moderator (z), which we included as a main effect on Step 1 of the model. Consistent with prior reports (Laird & LaFleur, 2016), in Step 2 we included the $x \times z$ interaction term, as well as the squared x and z variables. Finally, on Step 3 we included all interaction variables employing the squared and cubed x and z variables. The inclusion of these additional squared and cubed variables and their interaction terms ensures that any significant $x \times z$ interaction effects that appear are due to the $x \times z$ interaction itself rather than a nonlinear relationship between x or z and y . In analyses in which $z =$ children's disorganized attachment, we did not include z^2 and z^3 as these variables are equivalent to z when z is a dichotomous variable. Note that researchers contend that squared and cubed terms can be omitted from the model when they are not significant. In all analyses tested here, none of the squared and cubed interaction terms were significant, nor were the cubed x and z terms. Thus, per Laird's recommendation, we interpret the $x \times z$ interaction term and omit nonsignificant squared and cubed interaction terms, as well as cubed variables, from the presentation of the analyses.

To provide an additional, more specific probe of the pattern of low convergence with respect to Hypothesis 2 (RF-externalizing symptoms), we followed up our initial

convergence analysis with a test of discrepancies in informant reports. To accomplish this analysis, we used $EXTERN_{PARENT}$ as the independent variable but instead reversed the moderator and dependent variable, such that $EXTERN_{YOUTH}$ became the moderator and adolescent RFQ the dependent variable.

Following the initial analyses, we reran the models controlling for the other CBCL scale as well as the other attachment variable (e.g., controlling for RFQ_{self} and disorganized attachment when RFQ_{self} was the moderator) to ensure specificity of effects. All effects remained significant with the inclusion of these covariates. Further, although our initial intent was to examine how disorganized children compared to all children with organized attachment classifications, in a series of follow-up analyses we compared disorganized children to secure children only. Our analyses indicated the same pattern of effects. Due to the fact that none of these additional analyses altered the pattern of effects, we do not present them here.

RESULTS

A minority of youth was classified as having a disorganized attachment to their mother ($n = 53, 20.0\%$) and father ($n = 51, 19.2\%$). In line with prior research in this age range (Shmueli-Goetz et al., 2008), most (96.2%) of the children classified as disorganized with mother were also classified as disorganized with father. To ensure maximum precision, for the remainder of the analyses we use adolescents' attachment with respect to the parent who completed the intake assessment (i.e., the parent who provided the CBCL report).

Independent samples t tests revealed that female adolescents, $t(264) = 2.50, p = .01$, and female parents, $t(264) = 2.60, p = .01$, had significantly higher RFQ_{other}/RFQ_{other} scores. Parents of disorganized children reported lower RFQ_{other} than

parents of organized children, $t(264) = -1.82$, one-tailed $p = .03$. Zero-order correlations revealed that younger children were more likely to be classified as having disorganized attachment ($r = -.22, p < .001$) and that older children had higher RFQ_{self} ($r = .13, p = .03$; see Table 1). Disorganized attachment was only weakly associated with higher $INTERN_{YOUTH}$ ($r = .13, p = .03$) and was not significantly associated with any other clinical outcomes.

Hypothesis Testing

Disorganized Attachment and Internalizing Symptom Reporter Convergence

Controlling for main effects ($R^2 = .16, p < .0001$), a regression revealed that the step containing the $INTERN_{PARENT} \times$ Disorganized Attachment term significantly predicted $INTERN_{YOUTH}$ ($\Delta R^2 = .02, b = -.56, p < .01$; see Table 2). The simple slopes revealed that among adolescents with organized attachment, there was a significant positive association between parent and child reports ($b = .75, p < .0001$); however, among disorganized youth, parent, and adolescent reports were nonsignificantly associated ($b = .19, p = .30$; see Figure 1).

Disorganized Attachment and Externalizing Symptom Reporter Convergence

Controlling for main effects ($R^2 = .28, p < .0001$), the step containing the $EXTERN_{PARENT} \times$ Disorganized Attachment term significantly predicted $EXTERN_{YOUTH}$ ($\Delta R^2 = .01, b = .37, p = .04$; see Table 2). Among disorganized youth ($b = .91, p < .0001$), $EXTERN_{PARENT}$ and $EXTERN_{YOUTH}$ were more strongly positively correlated than they were among organized adolescents ($b = .54, p < .0001$; see Figure 1).

TABLE 1
Descriptive Statistics and Bivariate Correlations for Key Study Variables

Measures	Total ^a	Boys ^b	Girls ^c	1	2	3	4	5	6	7	8	
	M (SD)	M (SD)	M (SD)									
Adolescent Age	15.38 (1.42)	15.48 (1.38)	15.33 (1.45)	—								
$INTERN_{PARENT}$	70.90 (7.06)	70.26 (7.52)	71.30 (6.75)	-.03	—							
$EXTERN_{PARENT}$	64.99 (9.14)	64.51 (9.21)	65.28 (9.11)	.06	.28**	—						
$INTERN_{YOUTH}$	64.68 (12.03)	63.25 (12.06)	65.57 (11.97)	-.02	.37**	-.16**	—					
$EXTERN_{YOUTH}$	61.98 (10.49)	62.15 (11.08)	61.87 (10.13)	.08	.06	.52**	.31**	—				
RFQ_{other}	4.53 (.43)	4.50 (.44)	4.55 (.42)	-.001	.11	.01	-.06	-.07	—			
RFQ_{self}	4.42 (.77)	4.49 (.80)	4.38 (.74)	.09	-.19**	-.06	-.12*	-.06	-.06	—		
RFQ_{other}	4.25 (.50)	4.15 (.53)	4.31 (.47)	.13*	.03	-.14*	-.04	-.22**	.17**	.06	—	
Disorganized Att	—	—	—	-.22**	.03	.05	.13*	.06	.11	-.04	-.07	—

Note. RFQ = Reflective Function Questionnaire; RFQY = Reflective Functioning Questionnaire for Youth; att = attachment.

^a $N = 265$.

^b $n = 101$.

^c $n = 164$.

* $p < .05$. ** $p < .01$.

TABLE 2
 Regressions Examining the Interaction of Parent-Reported Symptoms and Adolescent Disorganized Attachment as a Predictor of Adolescent Reported Internalizing and Externalizing Symptoms

		Dependent Variables							
		Adolescent-Reported Internalizing				Adolescent-Reported Externalizing			
		ΔR^2	β/b	SE	95% CI	ΔR^2	β/b	SE	95% CI
Step 1	Parent Report	0.16***	.38***/.64***	1.39	[-4.56, .92]	.28***	0.53***/.60***	0.06	[.48, .72]
	Disorg Attachment								
Step 2	Parent Report \times Disorg	.02*	-1.45**/-.56**	0.22	[-.98, -.14]	.01*	1.03*/.37*	0.17	[0.04, 0.70]
	Parent Report ²								
Step 3	Parent Report ² \times Disorg	0.00	0.37/.00	0.00	[-.00, .00]	0.00	-1.39/.00	0.00	[-.00, .00]

Note. CI = confidence interval; Disorg = disorganized. * $p < .05$, ** $p < .01$, *** $p < .001$.

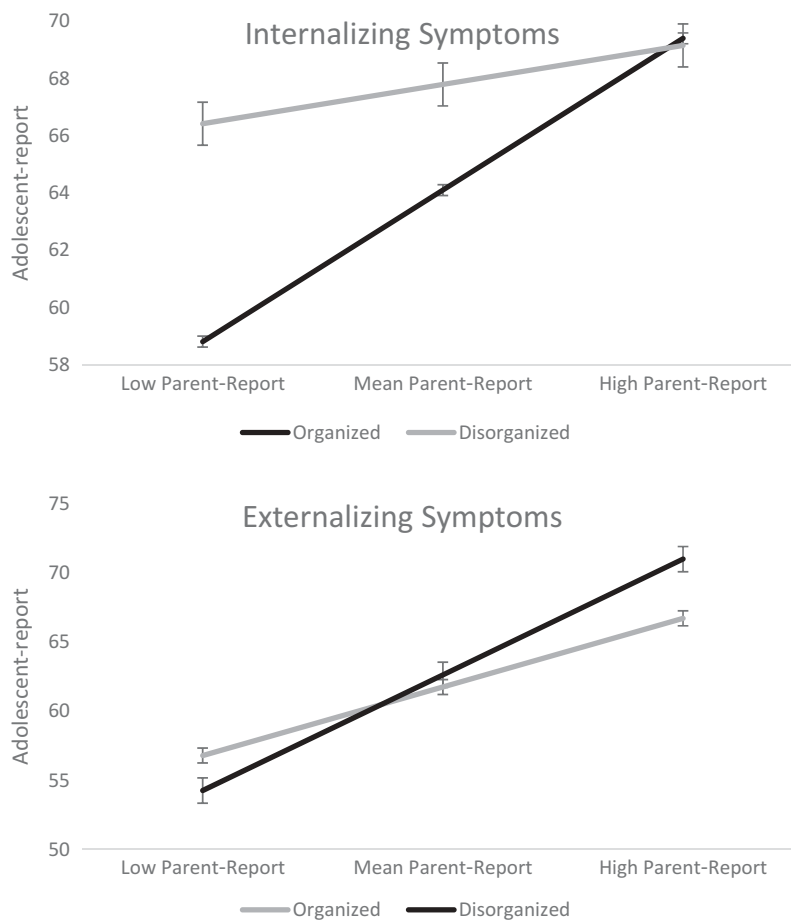


FIGURE 1 Results of polynomial regressions evaluating the degree of informant convergence in parent- and adolescent-reported internalizing and externalizing symptoms, as moderated by adolescent disorganized attachment. Note. Organized attachment = secure, dismissing, and preoccupied adolescents. Note that the overall pattern and significance remains when only comparing disorganized to secure adolescents.

TABLE 3
 Regressions Examining the Interaction of Parent Reported Symptoms and Adolescent Reflective Functioning as a Predictor of Adolescent Reported Internalizing and Externalizing Symptoms

	Dependent Variables							
	Adolescent-Reported Internalizing				Adolescent-Reported Externalizing			
	ΔR^2	β/b	SE	95% CI	ΔR^2	β/b	SE	95% CI
Step 1	0.17***				.29***			
Parent Report		.38***/.64***	1.39	[-4.56, .92]		0.52***/.68***	0.06	[-.47, .70]
RFQY _{self}		-0.05*/-1.13	1.39	[-3.88, 1.61]		-0.1/-1.08	0.58	[-2.22, 0.05]
Step 2	.01***				.02***			
Parent Report × RFQY		1.84*/0.47*	0.23	[0.02, 0.92]		1.03***/.37***	0.06	[-.28, -0.05]
Parent Report ²		1.14/0.44	0.22	[-.99, -.13]		0.06/.00	0.00	[-.00, .00]
RFQY _{self} ²		-1.25*/-.56*	0.14	[-0.14, -2.75]		-1.51/-.02	0.00	[-.00, .00]
Step 4	0.00				0.00			
Parent Report ² × Disorg		1.21/10.22	4.53	[2.89, 18.44]		18.31*/10.09*	4.53	[2.89, 18.44]
Parent Report × RFQY _{self} ²		0.03	0.79	[-2.66, 8.45]		6.22/3.21	0.79	[-2.66, 8.45]

Note. CI = confidence interval; RFQY = Reflective Functioning Questionnaire for Youth; Disorg = disorganized.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Reflective Functioning and Internalizing Symptom Reporter Convergence

Controlling for covariates and main effects ($R^2 = .17$, $p < .0001$), the step containing the $\text{INTERN}_{\text{PARENT}} \times \text{RFQY}_{\text{self}}$ term significantly predicted $\text{INTERN}_{\text{YOUTH}}$ ($\Delta R^2 = .01$, $b = .47$, $p = .04$; see Table 3). Although $\text{INTERN}_{\text{PARENT}}$ and $\text{INTERN}_{\text{YOUTH}}$ were positively correlated at all levels of youth $\text{RFQY}_{\text{self}}$, this positive association was stronger under conditions of higher $\text{RFQY}_{\text{self}}$ (low: $b = .42$, $p = .003$; mean: $b = .65$, $p < .00001$, high: $b = .89$, $p < .00001$; see Figure 2). These results suggest that higher self-focused youth RF is associated with greater convergence in internalizing symptoms.

In contrast, after controlling for covariates and main effects, parents' $\text{RFQ}_{\text{other}}$ did not significantly moderate the association between $\text{INTERN}_{\text{PARENT}}$ and $\text{INTERN}_{\text{YOUTH}}$ ($\Delta R^2 = .0007$, $b = .47$, $p = .64$).

Reflective Functioning and Externalizing Symptom Reporter Convergence

Controlling for main effects ($R^2 = .29$, $p < .0001$), the step containing the $\text{EXTERN}_{\text{PARENT}} \times \text{RFQY}_{\text{self}}$ term significantly predicted $\text{EXTERN}_{\text{YOUTH}}$ ($\Delta R^2 = .02$, $b = .37$, $p < .0001$; see Table 3). Although $\text{EXTERN}_{\text{PARENT}}$ and $\text{EXTERN}_{\text{YOUTH}}$ were positively correlated at all levels of $\text{RFQY}_{\text{self}}$, this positive association was stronger under conditions of lower $\text{RFQY}_{\text{self}}$ (high RF: $b = .41$, $p < .00001$; mean RF: $b = .58$, $p < .00001$, low: $b = .74$, $p < .00001$; see Figure 2), suggesting that lower $\text{RFQY}_{\text{self}}$ was associated with higher convergence in EXTERN.

To follow up this analysis, we examined whether discrepancies in externalizing symptoms predicted adolescents' $\text{RFQY}_{\text{self}}$. The interaction between $\text{EXTERN}_{\text{PARENT}}$ and

$\text{EXTERN}_{\text{YOUTH}}$ was significant ($\Delta R^2 = .03$, $b = -.002$, $p = .003$), with the findings suggesting that at high ($b = -.03$, $p = .01$), but not mean ($b = -.010$, $p = .17$) or low ($b = .007$, $p = .40$), levels of $\text{EXTERN}_{\text{YOUTH}}$ there was a significant association between higher $\text{EXTERN}_{\text{PARENT}}$ and lower $\text{RFQY}_{\text{self}}$ (see Figure 3).

In contrast, after controlling for covariates and main effects, parents' $\text{RFQ}_{\text{other}}$ did not significantly moderate the association between $\text{EXTERN}_{\text{PARENT}}$ and $\text{EXTERN}_{\text{YOUTH}}$ ($\Delta R^2 = .0001$, $b = .03$, $p = .87$).

DISCUSSION

Existing literature has consistently documented a lack of convergence in parent–youth reports of adolescent psychopathology, which presents numerous difficulties for assessment and treatment planning. Prior to this report, two studies had demonstrated links between convergence in parent–child reports of youth psychopathology and insecure attachment (Berger et al., 2005; Ehrlich et al., 2011), but recent advances in our statistical understanding suggest that the methods employed in these investigations could yield inaccurate results (see Laird & De Los Reyes, 2013), necessitating additional studies. Further, no prior investigations had explored disorganized attachment, youth RF, or parent RF as correlates of low convergence, or had assessed these relations among clinical samples, advances offered by the current investigation. Our findings generally suggested that adolescent—but not parent—attachment constructs were associated with lower internalizing symptom convergence and higher externalizing symptom convergence; we discuss these effects and their implications in turn below.

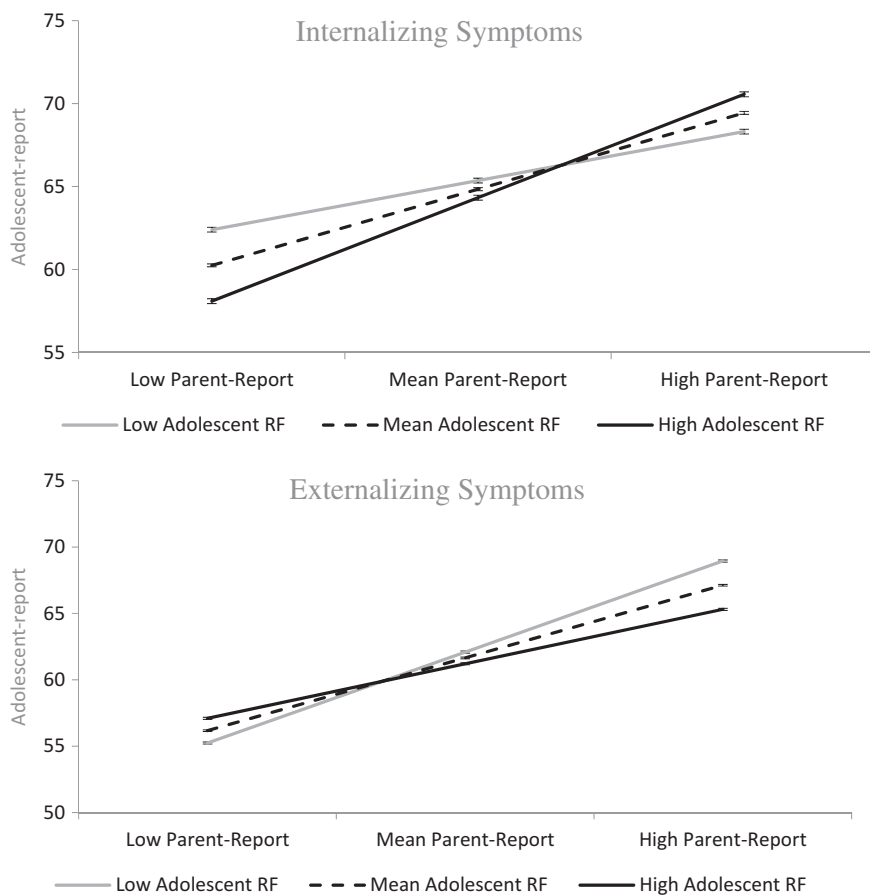


FIGURE 2 Results of polynomial regressions evaluating the degree of informant convergence in parent- and adolescent-reported internalizing and externalizing symptoms, as moderated by adolescents’ self-focused reflective function (RF).

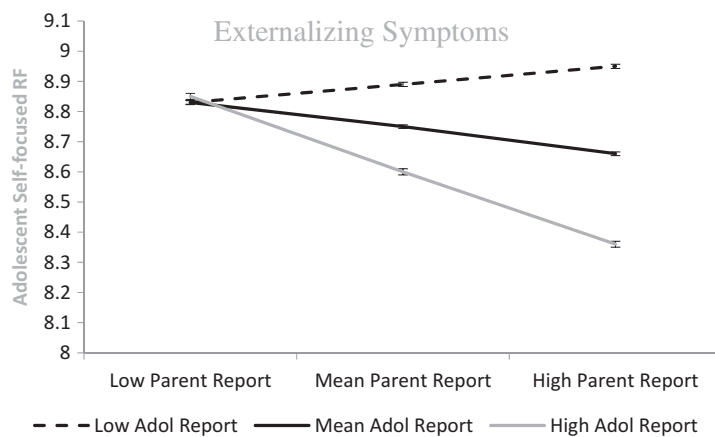


FIGURE 3 Results of a polynomial regression evaluating the discrepancy in parent- and adolescent-reported externalizing symptoms as a predictor of adolescents’ self-focused reflective function (RF). *Note.* Adol = adolescent.

Internalizing Symptoms

In support of our predictions, we found that adolescents with disorganized attachment and those with lower self-focused RF had lower convergence in parent–youth reports

of internalizing symptoms. These findings build upon literature suggesting that attachment insecurity is related to lower convergence in parent–child reports of psychopathology (Berger et al., 2005; Ehrlich et al., 2011) and support the

hypothesis that, using a different statistical technique to analyze the data, insecure (in this case, disorganized) attachment is associated with lower convergence in a psychiatric sample. Further, although in the past, researchers have speculated that RF could play a role in informant convergence (Borelli et al., 2010; Ostler et al., 2010), we provide the first evidence that lower levels of self-focused RF in adolescents are indeed associated with lower convergence in reports of internalizing symptoms.

The current findings do not enable us to ascertain the source or cause of the discrepancies in reports—meaning, it could be the case that adolescents with disorganized attachment or low RF inaccurately perceive their internalizing symptoms, that parents of disorganized adolescents misperceive their adolescents' symptoms, or that some combination of observer biases interact to create low levels of convergence. The results of one prior study suggested that even when adolescents' reports of social anxiety diverge from another metric of anxiety (in this case, their psychophysiological arousal), they have clinical significance (De Los Reyes et al., 2012), leading us to believe that adolescent endorsement of symptoms may be meaningful even in the absence of parent-endorsed adolescent symptoms.

Externalizing Symptoms

We predicted that adolescents with disorganized attachment and low RF would show higher convergence in reports of externalizing symptoms, although this hypothesis was speculative due to the paucity of prior work on this topic. In corroboration of prior research, we too found that across the sample, convergence was lower in reports of adolescents' internalizing as compared to externalizing behaviors (Duhig et al., 2000), which may be attributable to the fact that internalizing problems are less readily observable than externalizing problems (De Los Reyes & Kazdin, 2005). However, we found that adolescents with disorganized attachment or low RF demonstrated greater agreement in CBCL_{externalizing} as compared to other adolescents. We conjecture that lack of communication regarding internal states decreases agreement in reports of internalizing symptoms. In contrast, this same divide in perceptions of internalizing problems explains the higher externalizing problems convergence among adolescents with disorganized attachment and low RF. Lower RF could work mechanistically in this equation, although our cross-sectional design did not permit us to test this prediction: Lower levels of RF may lead disorganized youth to place greater emphasis on external behaviors as compared to organized children, or even mistakenly attribute internal states to externalizing symptoms. The focus of each member of the dyad may be more on observable behavior. This elevated focus on external states may increase accuracy in reporting on externalizing symptoms, and thus, increase levels of convergence. In contrast, youth with higher self-focused RF, who may focus more on

internal states, may report on CBCL_{externalizing} with less accuracy than disorganized adolescents.

In offering these interpretations, we note that we found only that parents of disorganized youth reported lower other-focused RF than parents of organized youth—disorganized youth did not report significantly lower self-focused RF than organized youth—reducing the plausibility of our speculative mechanistic explanation. In addition, our data did not suggest that disorganized adolescents have higher parent- or self-reported externalizing problems; rather, disorganized adolescents only had higher INTERN_{YOUTH}. Thus, we do not argue that dyads with disorganized adolescents report lower internalizing relative to dyads with organized adolescents, but, instead, that convergence in reports of internalizing problems may be weaker than convergence in reports of externalizing problems.

Surprisingly, parent RF was not associated with convergence of parent–adolescent reports with respect to internalizing or externalizing symptoms. This lack of effect could be due to measurement error (the internal consistency of this measure was low), or could indicate that the degree to which reports of adolescent symptoms converge relies more heavily on adolescents' mentalizing capacity than parents'. In the case of adolescent symptoms, the onus to perceive and disclose may be more prominently on the adolescent than the parent. In contrast, if we were assessing parent and adolescent agreement in reports of parent symptoms, parents' RF (potentially self-focused RF) might play a more salient role than adolescents'. This prediction can be tested in future studies.

Relatedly, it is worth noting that of all of the clinical scales, disorganized attachment was only significantly associated with INTERN_{YOUTH}, and only weakly at that. This is inconsistent with the results of prior investigations (e.g., O'Connor et al., 2011), which have found robust associations between disorganized attachment and clinical symptoms. In reflecting on this pattern in the data, we wonder whether the absence of attachment effects is related to the acuity of the sample; inpatient hospitalization typically occurs when youth are experiencing a psychiatric crisis. Because all of the adolescents in this sample were inpatients, our ability to detect attachment-based differences in symptoms may have been limited. Alternatively, for some adolescents, hospitalization (particularly when it occurs against the adolescent's wishes) can be extremely upsetting, which could impact the information provided in the research assessments. Unfortunately, we did not assess the timing of the assessments relative to hospital admission and therefore could not control for this variable in analyses.

Strengths and Limitations

As the first study to investigate the association between attachment and informant-convergence in clinical samples, as well as the first to explore disorganized attachment, we

believe that this study contributes to the existing literature. At the same time, there are factors that limit its generalizability. For instance, although the use of a clinical sample is critical for identifying whether attachment predicts convergence among youth with severe psychopathology, the results of this study may not be generalizable to adolescents with less severe psychopathology. In support of this assertion, it is noteworthy that organized forms of attachment insecurity were not associated with differing levels of convergence in this sample. Given that we used a different statistical methodology than was used in previous work (Berger et al., 2005; Ehrlich et al., 2011), it is unclear whether we identified a different pattern of effects because of the differences in our analytic strategy or because of sample differences. In addition, the interrater reliability for disorganized attachment was on the low side of acceptable in this sample. It may be that further specification in the rating of disorganized attachment on the CAI will improve the reliability in the coding; nonetheless, given the robust associations between disorganized attachment and risk, we contend that examining its association with convergence using the only measure available for assessing disorganized attachment in this age range is crucial. Finally, the observed effects were small, which raises questions about their practical significance.

Further, as most convergence research, including our study, focuses on adolescence (Ehrlich et al., 2011), future studies should examine these relations in parents and young children. In addition, the majority of the participants in our sample were female and Caucasian, limiting our ability to examine differences across parent- and family-level demographic factors, which are likely to be related to convergence. Finally, the cross-sectional design limits our ability to ascertain the directionality of the effects, as well as whether they emerge only during the intake phase of a psychiatric hospitalization. Replication of this study is necessary, as well as research that extends this work through the use of a longitudinal design and examination of other aspects of the parent-child relationship, such as interactional quality, parents' expressed emotion toward the adolescent, and conflict in the parent-child relationship.

Clinical Implications and Conclusion

If replicated and extended in longitudinal designs, these findings may have important implications for the assessment and treatment of psychopathology. Better understanding of the correlates of convergence in parent-youth reports of psychopathology will inform the treatment of children with disorganized attachment and low RF (De Los Reyes & Kazdin, 2005). When informant reports diverge, rather than dismissing the validity of both reporters' perspectives, clinicians may wish to consider both reports as valid, and to interpret the meaning of the divergence itself and what it

signifies about the adolescents' inter- and intrapersonal experiences. Sensitivity to convergence in parent-youth reports may lead clinicians to adjust treatment plans. Adolescents exhibiting low internalizing symptom convergence and high externalizing convergence with parents are more likely to have disorganized attachment and low RF. With respect to externalizing symptoms, it is unknown at this point whether convergence signifies greater clarity in the presentation of the symptoms or simply greater congruence in parent and youth focus on external as opposed to internal states. One speculation is that treatment of these adolescents may need to target the conflation of internal states with external behavior.

In summary, this study adds to the body of literature examining correlates of low convergence in reports of adolescent psychopathology, providing insight into two psychological factors associated with convergence. Disorganized attachment and low RF in adolescents predicted lower convergence in parent-youth reports of internalizing and higher convergence in reports of externalizing, suggesting that future research may wish to focus on these attachment constructs.

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