



Commentary

Advances in conceptual and empirical approaches to understanding the interpersonal context of youth depression: Commentary

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As one of the most prevalent psychiatric disorders, depression poses a significant burden to individuals, families, and society. Three well-established and robust epidemiological features of depression include: (a) a sharp rise in depression during adolescence; (b) the emergence of a gender difference in depression during adolescence, which remains consistent across the lifespan; and (c) high levels of continuity and recurrence in depression across development (for a review, see Hammen, Rudolph, & Abaied, 2014). Interpersonal theories of depression offer promising explanations for each of these phenomena. Consequently, in the past few decades, interpersonal theories have played a prominent role in understanding vulnerability to depression (for a review, see Rudolph, Lansford, & Rodkin, 2016a). Despite the growing sophistication of such theories, empirical research has lagged far behind. This Special Issue takes a crucial step toward bridging the gap between theory and research on the interpersonal context of youth depression, particularly within the peer group. In this commentary, I identify key advances reflected in the research reported across the articles and I discuss remaining gaps and future challenges for research aimed at testing and enriching interpersonal theories of youth depression.

1. Brief summary of interpersonal theories of depression

Coyne's (1976) seminal interpersonal theory of depression posits a "depressive social process" in which depression-linked characteristics and behaviors (e.g., low self-worth, excessive reassurance seeking, failure to accept support) interfere with relationships and elicit adverse reactions (e.g., negative feedback, rejection) from relationship partners. These interpersonal disturbances confirm negative self-views and intensify depressive symptoms, resulting in a self-perpetuating cycle of dysfunction (Joiner & Timmons, 2009). Reflecting a similar focus on transactional interpersonal processes, Hammen's (2006) stress-generation theory of depression highlights the idea that interpersonal stressors not only contribute to depression but also emerge from characteristics and behaviors of depressed and depression-prone individuals.

Building on these pioneering theories, developmentally informed interpersonal models (e.g., Rudolph, 2009; Rudolph, Flynn, & Abaied, 2008) consider: (a) how early social adversity can threaten psychological, biological, and social competencies in ways that set the stage for interpersonal vulnerability to depression; (b) how key developmental

transitions (e.g., entrance into secondary school, puberty) serve as a backdrop for intensified social challenges, which might amplify depression-linked interpersonal issues; (c) how a developmental perspective can contribute to understanding the emerging gender difference in depression during adolescence; and (d) how depression may interfere with normative patterns of growth and acquisition of stage-salient skills, leaving an interpersonal "scar" (Rohde, Lewinsohn, & Seeley, 1990) that persists across development. These ideas echo general developmental perspectives that highlight the dynamic and reciprocal unfolding of transactions between youth and their environments, which result in the selection (e.g., "niche-picking;" Scarr & McCartney, 1983) and construction (e.g., "interactional continuity;" Caspi, Elder, & Bem, 1988) of environments that intensify personal attributes of youth and account for continuity in adjustment over time.

One central tenet of these models is that depression can both emerge from, and contribute to, interpersonal disturbances. *Interpersonal risk* models, which focus on depression as a consequence of interpersonal skill deficits and relationship disruption, have received significant empirical attention. Research implicates a range of interpersonal risks in the peer domain as predictors of youth depression, including behavioral styles (e.g., excessive reassurance seeking, negative feedback seeking, anxious solitude, social withdrawal), exposure to peer group stressors (e.g., rejection, victimization, exclusion), and friendship difficulties (for reviews, see Rudolph, 2009; Rudolph et al., 2008; Rudolph, Lansford, and Rodkin, 2016a). In contrast, *interpersonal scar* or *symptom-driven* models, which focus on depression as an antecedent of interpersonal skill deficits and relationship disruption, have received far less scrutiny. However, an emerging body of research supports the idea that depressive symptoms undermine interpersonal behavior and compromise relationships in the short- and long-term (for reviews, see Rudolph, 2009; Rudolph et al., 2008; Rudolph, Lansford, and Rodkin, 2016a). Even less empirical research has directly evaluated transactional models, wherein interpersonal skill deficits and relationship disturbances account for continuity or exacerbation of depression over time, although limited research has revealed reciprocal effects between depression and peer victimization (as reviewed by Kochel and colleagues), interpersonal stress (Rudolph, Flynn, Abaied, Groot, & Thompson, 2009), and, to some extent, low social status (i.e.,

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social neglect by peers; Agoston & Rudolph, 2013).

2. Innovative contributions and future directions

Although prior efforts to validate interpersonal theories of youth depression hold promise, research on symptom-driven and transactional models is constrained by its limited conceptual and empirical focus. The articles presented in this Special Issue move the field forward with several commendable theoretical, methodological, and analytic contributions. Here I highlight the exciting progress reflected in this Special Issue and discuss additional lines of inquiry that will further advance theoretical models and empirical investigations of interpersonal processes in depression, with a focus on three themes: enriching interpersonal models of depression, elucidating and testing developmentally sensitive models, and using rigorous methodological designs and statistical analysis.

3. Enriching interpersonal models of depression

3.1. Contributions of the present research

One substantive contribution of this set of papers is their emphasis on identifying factors that moderate and mediate the contribution of depression to subsequent difficulties in the peer group. Increasing our understanding of individual and contextual factors that help to explain for whom, under what conditions, and how depression impacts interpersonal dysfunction not only expands interpersonal theories but also identifies valuable targets for intervention efforts with depressed youth.

In this vein, Kochel and colleagues explore the possibility that dyadic and group features of peer relationships modify the transactional association between depressive symptoms and peer victimization. Specifically, they propose that victimization may pose a stronger risk for subsequent depressive symptoms, and depressive symptoms may pose a stronger risk for subsequent victimization, in youth who lack a mutual best friendship and who experience low acceptance in the peer group, whereas optimal peer relationships may promote resilience in the face of victimization or depression. These authors argue that close friendships provide a context for developing skills related to conflict resolution, problem solving, and emotion regulation, and afford coping resources (e.g., emotional support, companionship) that may diminish vulnerability associated with victimization and depressive symptoms. Likewise, high peer acceptance may deter potential bullies from victimizing depressed youth and may provide a sense of belonging to victimized youth that buffers against depression. Perron-Gelinas and colleagues similarly argue that participation in team sports may protect depressed youth against peer rejection by providing opportunities to build personal competencies (e.g., self-control, assertiveness, emotion regulation) and social skills (e.g., cooperation, communication, leadership) and a sense of belonging or in-group identification that form the basis for healthy relationships. Consistent with these ideas, these two studies reveal that having a mutual best friend, high peer acceptance, and higher frequency of team sports participation buffer youth with depressive symptoms against subsequent victimization and peer rejection.

However, this set of studies further reveals that the nature and quality of social experiences determine their protective versus risk-enhancing effects. Indeed, having friends who experience elevated depressive symptoms and participating frequently in individual (rather than team) sports actually heighten risk for victimization (Schachter & Juvonen) and peer rejection (Perron-Gelinas et al.) following depressive symptoms. Thus, these studies highlight the nuances of interpersonal contexts that must be considered when determining their impact on depression-related interpersonal functioning. Understanding these subtleties is essential for developing appropriate prevention programs designed to improve social adjustment in depressed youth.

Schachter and Juvonen further extend symptom-driven models of depression by investigating one specific process through which depressive symptoms contribute to compromised peer relationships in the form of exposure to peer victimization. Interpersonal theories of youth depression implicate a wide range of possible mediating mechanisms accounting for the damaging effect of depressive symptoms on relationships, including the adverse nature of interacting with individuals who show high levels of negative affect and irritability, the harmful effects of excessive reassurance seeking or social withdrawal on close relationships, the tendency for peers to target youth who signal emotional vulnerability, and the stress-inducing impact of depressive social-cognitive tendencies (for reviews, see Rudolph, 2009; Rudolph et al., 2008). Yet, minimal research has directly investigated these possibilities.

Schachter and Juvonen provide a compelling explanation for how depressive symptoms may induce characterological self-blaming attributions about victimization, which increase the likelihood of youth perceiving themselves as increasingly victimized over time, perhaps by making them more sensitive to perceived intimidation or rejection. They further propose that this pathway will be strongest in youth whose friends also have elevated depressive symptoms because such friends may not provide effective support, instead exposing depressed youth to their own pessimistic views or engaging in co-rumination that amplifies self-blaming attributions. Confirming this process, the indirect effects of depressive symptoms on self-reported victimization via self-blaming attributions were significantly stronger for youth whose friends had high than low levels of depressive symptoms. This study represents one of the first efforts to test such a moderated-mediation model, and provides insight into why and when depressive symptoms contribute to subsequent peer victimization. It will be interesting for future research to replicate these effects using other informants of victimization to examine whether self-blaming attributions contribute only to perceived peer difficulties due to a cognitive bias or also to actual increases in difficulties as well as to determine whether self-blaming attributions trigger certain behavioral differences that elicit adverse peer reactions.

3.2. Future directions

Advancing beyond these studies will require further elucidation of the social-cognitive (e.g., attentional biases; appraisals; attributions), behavioral (e.g., social withdrawal; helplessness; co-rumination), and biological (e.g., neural, hormonal, and immunological responses to social stress) processes through which depressive symptoms exert an effect on interpersonal functioning and vice versa. Part of this endeavor will require distinguishing immediate versus short-term versus long-term effects of depressive symptoms. Some interpersonal consequences of depression may be acute sequelae of symptoms, such as increased conflict arising from irritability, or social isolation arising from anhedonia and withdrawal. Other consequences may emerge from depression-linked behaviors, such as excessive reassurance seeking, negative self-disclosure, and negative-feedback seeking, behaviors which may last beyond acute episodes and contribute to chronic peer rejection or dissolution of friendships. Yet other consequences may leave permanent scars that inhibit the development of healthy relationships many years down the line. For example, if depressed youth miss out on key opportunities to gain skills associated with developing close relationships (e.g., appropriately regulating emotions within relationships) or managing interpersonal stress (e.g., using proactive strategies such as problem solving and seeking support), they may have enduring interpersonal impairment throughout their lives.

Each of the studies in this issue examines the social consequences of depressive symptoms one year later (although Krygsman and Vaillancourt track these effects across eight grades). At one end of the continuum, more fine-grained analyses are needed to determine the immediate interpersonal effects of acute depressive symptoms using methodologies such as behavioral observations and ecological

momentary assessment. At the other end of the continuum, it will be important to determine whether depressive symptoms early in life interfere with normative developmental trajectories, exerting enduring effects on interpersonal skills and relationships even in the absence of subsequent depression. Expanding our understanding of both short- and long-term consequences of depression will be facilitated by identifying precise pathways through which depression compromises interpersonal skills and relationships.

Another central conceptual and empirical direction will be delineating the mechanisms that drive the effects of protective and risk factors. In these articles, several such mechanisms are proposed. For example, Kochel and colleagues and Perron-Gelinas and colleagues suggest that having mutual friendships and participating in team sports, respectively, can protect depressed youth by scaffolding opportunities to learn effective social skills (e.g., conflict resolution, emotion expression and regulation, communication) and providing a sense of emotional support and belonging. Likewise, peer group acceptance may promote resilience against adverse interpersonal effects of depression, such as peer victimization, by dissuading bullies from targeting youth with personal vulnerabilities. In contrast, Schachter and Juvonen suggest that having depressed friends may exacerbate the effect of depressive symptoms on characterological self-blame and consequent victimization by exposing youth to negative views and co-ruminative processes, and Perron-Gelinas and colleagues suggest that participating in individual sports may exacerbate the effect of depressive symptoms on peer rejection by heightening negative attributional processes. Direct investigations of these explanatory mechanisms would broaden theoretical models and would inform intervention programs.

Yet, it is important to recognize that depressed youth with and without protective factors may differ in other essential ways that contribute to their interpersonal competence. Depressed youth often lack close friends or are particularly likely to have friends with depressive symptoms due to assortative mating or contagion effects (see discussion in Schachter & Juvonen). Likewise, depressed youth may be more likely to participate in individual rather than team sports due to social withdrawal or lower levels of extraversion (see discussion in Perron-Gelinas et al.). Thus, those with healthy friendships or those who frequently participate in team sports may already possess competencies that explain why they avoid experiences such as peer victimization and rejection. If this is the case, simply encouraging depressed youth to make friends or to participate in team sports may not target the issues that prevent naturally occurring selection into health-inducing social contexts. Identifying and modifying characteristics of depressed youth that interfere with their engagement in healthy social relationships and contexts will be required in order to develop effective intervention programs.

4. Elaborating and testing developmentally sensitive models

4.1. Contributions of the present research

This set of studies also broadens the empirical database by embracing developmental perspectives on interpersonal theories of depression through (a) selection of critical periods of growth and development, or (b) direct analysis of developmental differences and change in the associations between depression and interpersonal functioning over time. Understanding the dynamic transactions between depression and the peer context requires a careful consideration of developmental factors that may influence the strength or nature of the associations, yet these issues have not received significant attention in prior research on symptom-driven or transactional models. All five papers in this issue consider school transitions and the transition to adolescence as critical stages of potential risk or opportunity. Developmental transitions have been described as “turning points” during which personal and environmental changes and reorganization may redirect developmental trajectories for better or for worse (Graber & Brooks-Gunn, 1996).

Whereas new challenges may create a social context of risk for some vulnerable youth, others may benefit from the chance to redefine or reshape social relationships and status in ways that promote positive growth.

Three of the papers focus on the transition to, and across, secondary school. Implicating middle school as a stage of risk, two studies find that depression predicted social difficulties from the first to second (Schachter & Juvonen) and second to third (Malamut and colleagues) years of middle school. Implicating the transition to secondary school as a stage of opportunity, Perron-Gelinas and colleagues find that frequency of team sports participation buffered depressed youth against rejection across the transition from primary to secondary school. Although rejection tends to be stable over time, the authors argue that the novel social environment of secondary school may offer depressed youth an opportunity to forge new relationships and improve their social status. Thus, these papers highlight the need to consider both costs and benefits of reorganization stemming from developmental transitions, suggesting that these junctures represent a prime opportunity to implement intervention programs.

The remaining two papers provide explicit comparisons of effects across developmental stages. Kochel and colleagues directly compare transactions between peer victimization and depressive symptoms during early adolescence (5th to 6th grade) and mid- to late-adolescence (9th to 10th grade). Consistent with expectations and developmental theory regarding the relative value placed on larger peer group acceptance versus more intimate relationships at these different stages, they find that peer group acceptance protects depressed youth against victimization in early but not mid- to late-adolescence, whereas having a mutual friend promotes resilience during both stages. Krygsmann and Vaillancourt track the reciprocal associations between depression and poor peer relations (rejection and victimization) from 5th through 12th grade and directly compare the strength of significant cross-lagged paths. Although depression predicted higher levels of both rejection and victimization across several one-year periods, one of the most robust paths was that from 8th grade depressive symptoms to 9th grade rejection, a lag that spanned the transition to high school. As the authors discuss, this may be another critical transition point when vulnerable youth, such as those with depressive symptoms, lack the ability to navigate changing and perhaps more demanding peer ecologies.

4.2. Future directions

Efforts to further elucidate developmental aspects of interpersonal theories will benefit from additional research comparing transactions between interpersonal competence and depression across various stages. Moreover, research suggests that the contribution of interpersonal stress to depression (Conley & Rudolph, 2009) as well as the contribution of depression to interpersonal stress (Rudolph, 2008) vary according to the timing of pubertal maturation, such that early maturation intensifies these associations. Operationalizing development using more proximal indexes such as pubertal status and timing, rather than distal markers such as age or grade, will provide further insight into which youth may be at particular risk. It also will be helpful to identify stage-specific risk and protective factors that dampen or intensify depression-interpersonal impairment associations; such efforts would have clear implications for prevention and intervention program during different periods of development.

Future research also needs to elaborate how interpersonal theories of depression can contribute to our understanding of the emerging gender difference in depression during adolescence. These five papers differ in their approach and findings regarding the role of gender, with some papers collapsing across (Kochel et al.), or adjusting for, gender (Krygsmann & Vaillancourt), others examining, but not finding, gender interactions (Malamut et al.; Schachter & Juvonen), and one paper finding a moderating role of gender (Perron-Gelinas et al.). These inconsistencies are likely due to the different role of various aspects of

peer relationships in the lives of girls versus boys (Rose & Rudolph, 2006). Thus, it will be critical to conduct theory-guided investigations that aim to better understand when and why certain aspects of interpersonal functioning serve a different role as antecedents or consequences of depression in girls and boys.

Finally, research needs to clarify how early family adversity (e.g., maternal depression, maltreatment, insecure attachment) and early peer adversity (e.g., chronic rejection or victimization) contribute to depression-linked interpersonal impairment. Early family adversity exposes youth to multiple forms of disruption that may undermine the development of adaptive interpersonal behaviors, leaving youth vulnerable to depression (for reviews, see Abaied & Rudolph, 2014; Rudolph et al., 2008). Consistent with this pathway, the contribution of maternal depression to youth depression is accounted for by disrupted relationships and social competence deficits (Hammen, Brennan, & Keenan-Miller, 2008; Hammen, Shih, & Brennan, 2004). Moreover, the depressed children of depressed mothers show more interpersonal dysfunction than the depressed children of nondepressed mothers (Hammen & Brennan, 2001), perhaps accounting for their earlier onset of depressive symptoms. Similarly, early peer adversity can interfere with the normative development of self-regulatory resources and sensitize youth to subsequent social cues in ways that put them at risk for depression (Rudolph, Lansford, and Rodkin, 2016a). Indeed, exposure to chronic peer rejection (Will, van Lier, Crone & Güroğlu, 2016) and peer victimization (Rudolph, Miernicki, Troop-Gordon, Davis, & Telzer, 2016b) across childhood predicts heightened neural sensitivity to exclusion and to in-group belonging (Telzer, Fowler, Davis, Miernicki, & Rudolph, in preparation) during adolescence, which in turn is associated with internalizing symptoms, including depression. Identifying the source of depression-linked interpersonal impairment as well as understanding the intersection between biological and social processes is therefore vital for developing effective intervention programs.

5. Using rigorous methodological designs and statistical analysis

5.1. Contributions of the present research

One of the most notable advances of this set of studies is their use of comprehensive research designs that tap several dimensions of the peer context. Kochel and colleagues use multi-informant report of multiple forms of victimization and assess the protective effects of both group-level and dyad-level peer relationships. Klygman and Vaillancourt assess peer victimization and rejection, and replicate their effects across parent- and self-reported depressive symptoms. Malamut and colleagues examine distinct indicators of success in the peer group: unpopularity and disliking. Schachter and Juvonen assess both peer victimization and friends' level of depressive symptoms. Finally, Perron-Gelinas and colleagues combine self- and peer report and assess peer rejection and sports participation. Collectively, the papers shed light on the role of multiple aspects of interpersonal experience in depression.

Even more noteworthy, the studies use prospective longitudinal designs and advanced analytic strategies that facilitate the simultaneous examination of reciprocal effects between interpersonal difficulties and depressive symptoms, including cross-lagged path analysis and structural equation modeling (Kochel et al.; Schwartz et al.), cascade models (Krygsman & Vaillancourt), and multilevel moderated-mediation (Schachter & Juvonen). These designs have been relatively rare in this field of inquiry but are essential for determining the relative explanatory power of interpersonal risk, symptom-driven or interpersonal scar, and transactional models of depression. Of interest, of the three papers that examined bidirectional effects, consistent support was found for symptom-driven models but little support was found for interpersonal risk models (although a transactional model improved the model fit over interpersonal risk only and symptom-driven only models in Krygsman & Vaillancourt study, none of the interpersonal risk paths

remained significant, calling into question the added value of these paths), illustrating the importance of simultaneously considering both directions of effect.

5.2. Future directions

A substantial history of research supports the validity of interpersonal risk models of youth depression (for reviews, see Rudolph, 2009; Rudolph et al., 2008; Rudolph, Lansford, and Rodkin, 2016a), and a more recent line of investigation upholds symptom-driven models. In research that explicitly examines reciprocal effects of peer-related interpersonal processes and depression, evidence for transactional models is mixed, with some research confirming bidirectional effects and other research supporting only one direction or the other (e.g., see discussion in Kochel et al. regarding peer victimization). Further research is needed to better understand the factors that help to account for these inconsistent effects.

One possible explanation for weaker interpersonal risk effects in certain studies may lie in the nature of the risk factors assessed. Although isolating components of peer experience may help elucidate the role of specific interpersonal processes in depression, this approach may weaken risk pathways if it is the case that multiple stressors within the peer context collectively contribute to depression. Indeed, for example, having high quality friendships buffers youth against the adverse emotional effects of peer victimization (Schmidt & Bagwell, 2007), suggesting that identifying profiles of interpersonal difficulties may be important. Also, research indicates individual differences in the effects of peer adversity on depression. For example, peer victimization predicts depression in youth with high levels of negative emotionality (Sugimura & Rudolph, 2012), high avoidance motivation (Llewellyn & Rudolph, 2014), fixed mindsets about peer relationships (Rudolph, 2010), critical self-referent cognitions (Prinstein, Cheah, & Guyer, 2005), heightened biological stress responses (Rudolph, Troop-Gordon, & Granger, 2011), or heightened neural sensitivity to exclusion (Rudolph, Miernicki, et al., 2016b) but not in youth without these personal vulnerabilities. Similarly, peer rejection predicts depression in girls with high but not low investment in peer acceptance (Prinstein & Aikins, 2004), and cumulative peer stress predicts depression in girls with poor but not strong executive function (Agoston & Rudolph, 2016). As discussed by Malamut and colleagues, the implications of peer processes and depression also may vary dramatically across diverse communities and cultural groups that differ in relevant social norms. Given this wide variability in the link between interpersonal risk and depression, studies that exclusively test main effects may fail to identify risky peer contexts.

Various methodological and analytic issues also may contribute to inconsistent findings regarding the transactional nature of peer difficulties and depression. Because depression tends to be more stable than peer experiences (as is the case in several of the studies in this issue), it may be harder to detect changes in depression than changes in peer experience, particularly using one-lag designs. According to transactional models, interpersonal difficulties not only predict initial increases in depression but also account for continuity in depression. Thus, analytic designs that consider not only increasing depression but also persistent depression may be helpful for better understanding the ongoing transactions between interpersonal experience and depression across development. Moreover, recent critiques of traditional cross-lagged designs (Berry & Willoughby, in press) suggest the need to adopt modeling approaches that disaggregate within-person versus between-person effects (e.g., autoregressive latent trajectory models; Bollen & Curran, 2005; state-trait models; Cole, Nolen-Hoeksema, Girgus, & Paul, 2006) to accurately track reciprocal associations over time. Application of such modeling approaches is likely to yield significant progress in fine-tuning interpersonal theories of depression.

6. Conclusion

The research described in this Special Issue reflects noteworthy progress toward enhancing and testing interpersonal theories of youth depression. Each of the papers provides a thoughtful conceptual framework regarding possible implications of depressive symptoms for dysfunction within the peer context, with attention to multiple dimensions of the peer ecology and consideration of under what conditions and how depressive symptoms undermine relationships. Moreover, the use of perspective longitudinal designs, often considering reciprocal effects along with developmental and cultural contexts, advances empirical efforts to test interpersonal theories. Collectively, these papers can inform interpersonal-oriented interventions for depressed youth. A fruitful future research agenda in this area will require continued elaboration of social-cognitive, behavioral, and biological pathways linking social difficulties and depression as well as personal and contextual factors that moderate these links along with ongoing refinement of methodological and analytic strategies for testing increasingly complex theoretical conceptualizations regarding the interpersonal context of youth depression.

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