

Interpersonal Relatedness, Self-Definition, and Their Motivational Orientation During Adolescence: A Theoretical and Empirical Integration

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The authors examined a theoretical model linking interpersonal relatedness and self-definition (S. J. Blatt, 1974), autonomous and controlled regulation (E. L. Deci & R. M. Ryan, 1985), and negative and positive life events in adolescence ($N = 860$). They hypothesized that motivational orientation would mediate the effects of interpersonal relatedness and self-definition on life events. Self-criticism, a maladaptive form of self-definition, predicted less positive events, whereas efficacy, an adaptive form of self-definition, predicted more positive events. These effects were fully mediated by the absence and presence, respectively, of autonomous motivation. Controlled motivation, predicted by self-criticism and maladaptive neediness, did not predict negative events. Results illustrate the centrality of protective, pleasure-related processes in adaptive adolescent development.

Two major models of personality development have recently been proposed. The first model, postulated by Blatt (1974) and Blatt and Blass (1996), focuses on the development of interpersonal relatedness and self-definition throughout the life span. The second model, put forth by Deci and Ryan (1985; Ryan & Deci, 2000a, 2000b), emphasizes psychological needs and the development of motivation throughout the life span. Despite considerable similarities between these two models, no explicit attempt has been made thus far at their integration. The present article reports such an attempt.

Interpersonal Relatedness and Self-Definition

Using a psychoanalytic object-relational and Piagetian cognitive–developmental approach, Blatt and colleagues postulated that interpersonal relatedness and self-definition are two

central and broad-based developmental processes throughout the life span (Blatt, 1974, 1995b, 1998; Blatt & Blass, 1996; Blatt & Shichman, 1983; Blatt & Zuroff, 1992). *Interpersonal relatedness* refers to the need to establish close, stable, nurturing, and protective relationships. *Self-definition* pertains to the need to establish a coherent, differentiated, stable, realistic, and positive sense of self. As Blatt and colleagues (cf. Blatt, 1995b; Blatt & Blass, 1996; Blatt & Shichman, 1983) argued, these two processes develop synergistically, such that the unfolding of one enhances the development of the other. For example, as children increasingly experience their primary caregivers as a “secure base,” they are able to more freely explore their environment and their internal processes. Such explorations enable the development of a richer, more multifaceted, and more autonomous sense of self, which in turn facilitates greater relational skills (Blatt, 1995b).

Blatt (1998) and Blatt and Zuroff (1992) argued that the successful negotiation and integration of these two central developmental processes are the hallmarks of optimal development, whereas an extreme, one-sided emphasis on either interpersonal relatedness or self-definition is likely to result in psychopathology. Optimally developing individuals are able to become involved in relations without losing their sense of self, and they strive for achievement and self-definition without neglecting interpersonal relationships. In contrast, individuals who are likely to emphasize interpersonal relatedness (i.e., the attainment of close and reciprocal relations) at the expense of self-definition develop a dependent personality style. Similarly, individuals who emphasize self-definition (i.e., achievement of self-esteem and sense of control) at the expense of interpersonal relatedness develop a self-critical personality style. Both types of individuals are characterized by different forms of defense and coping mechanisms, representational structures, vulnerability to life circumstances, and configu-

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rations of psychopathology (Blatt, Shahar, & Zuroff, 2001; Blatt & Shichman, 1983; Blatt & Zuroff, 1992).

Two and a half decades of research conducted with the adult and adolescent versions of the Depressive Experience Questionnaire (DEQ; Blatt, D'Afflitti, & Quinlan, 1976; DEQ-A: Blatt, Schaffer, Bers, & Quinlan, 1992) have supported these formulations (for reviews, see Blatt & Blass, 1996; Blatt et al., 2001; Blatt & Zuroff, 1992). The DEQ, a self-report measure of the ways in which individuals experience themselves and others, assesses three main constructs: dependency, self-criticism, and efficacy. *Dependency* assesses an intense investment in significant others guided by the quest to avoid abandonment. *Self-criticism* assesses strong needs for achievement to avoid feelings of inferiority and a loss of self-esteem. The third construct, *efficacy*, represents an emphasis on feelings of competence. In contrast to self-criticism, efficacy taps experiences of self-confidence and inner strength.

Recent psychometric investigations suggest that the first factor of the DEQ, dependency, actually comprises two facets, one representing maladaptive *neediness*, and the other more adaptive *relatedness* (Blatt, Zohar, Quinlan, Luthar, & Hart, 1996; Blatt, Zohar, Quinlan, Zuroff, & Mongrain, 1995; Henrich, Blatt, Kuperminc, Zohar, & Leadbeater, 2001; Rude & Burnham, 1995). Thus, the DEQ is a reliable and valid instrument for assessing adaptive and maladaptive dimensions of both interpersonal relatedness and self-definition.

Psychological Needs and Motivation

Self-determination theory (SDT) addresses the antecedents of healthy self-regulation and psychological well-being. The theory postulates three basic psychological needs, the fulfillment of which is prerequisite for the initiation of autonomously regulated behavior. These three needs are competence, autonomy, and relatedness (Deci & Ryan, 1985; Ryan, 1995; Ryan & Deci, 2000a, 2000b). In this framework these needs are defined as the nutrients essential for psychological growth (see Ryan & Deci, 2000b). The need for competence is based on White's (1959) conceptualization of effectance motivation as being an inherent human drive for mastery. The need for relatedness is conceptually rooted in both object relations theory (e.g., Winnicott, 1975/1992) and attachment perspectives (Bowlby, 1969) and reflects the need for connection or belongingness with others. Finally, the concept of autonomy is derived from both modern phenomenological approaches (e.g., DeCharms, 1968) and psychoanalytic ego psychology (e.g., Shapiro, 1989). Individuals experience autonomy when their actions are self-initiated or fully self-endorsed rather than controlled by forces experienced as alien to the self (Ryan, 1993). In domains or circumstances in which any of these needs is neglected, difficulties in engaging in autonomously regulated behavior ensue, and well-being is hypothesized to suffer.

SDT specifically distinguishes between intrinsic and extrinsic motivation (Ryan, 1995; Ryan & Deci, 2000a, 2000b). *Intrinsic motivation* refers to individuals' engagement in behavior because of satisfaction inherent in the behavior. *Extrinsic motivation* refers to engagement in behavior for reasons that are separable from the behavior per se, such as for rewards, avoidance of punishment, or the instrumental value of acting. Additionally, Ryan and Deci (2000a, 2000b) have argued that many behaviors by nature cannot be intrinsically motivated and that there are different levels of adaptiveness within extrinsic motivation. They have proposed a

continuum of extrinsic motivation that ranges from regulatory processes that are relatively controlled to those that are more self-regulated or autonomous. Movement along the continuum toward more autonomous forms of behavioral regulation is called *internalization*, which Grolnick, Deci, and Ryan (1997) defined as "the processes by which individuals acquire beliefs, attitudes, or behavioral regulations from an external source and progressively transform those controlled motivations into personal attributes, values or regulatory styles" (p. 139). Autonomous forms of extrinsic motivation (i.e., those that have been deeply internalized) are as adaptive as intrinsic motivation, the only difference being that they initially originated from outside the self (Ryan & Deci, 2000a, 2000b). Thus, when evaluating the quality of motivational orientations, the distinction between autonomous versus controlled is more important than the distinction between intrinsic and extrinsic.

Autonomous motivation (i.e., motivation that is intrinsic or has been more fully internalized) is enhanced by conditions that promote feelings of competence, autonomy, and relatedness. Relatedness is particularly important to internalization (Ryan & Deci, 2000a, 2000b). Because extrinsically motivated behaviors are by definition not intrinsically interesting and originate outside of the self, internalization is facilitated if these extrinsic behaviors are endorsed and valued by significant others to whom one feels connected. Conversely, if extrinsically motivated behaviors are valued by significant others from whom one feels alienated, one is less likely to internalize and integrate one's motivation for them. The needs for competence, autonomy, and relatedness are thought to be interrelated, with support for each need facilitating support for the others (Ryan, Sheldon, Kasser, & Deci, 1996).

Considerable research has demonstrated the effects of the needs for autonomy, relatedness, and competence on motivational orientation (e.g., Connell, Spencer, & Aber, 1994; Grolnick & Ryan, 1989; Ryan & Deci, 2000a, 2000b; Ryan, Stiller, & Lynch, 1994). Furthermore, individual differences in satisfaction of the three needs as well as in motivational orientations are associated with well-being and mental health (e.g., Kasser & Ryan, 1996; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Ryan & Deci, 2000b; Sheldon & Kasser, 1998).

A Theoretical Integration

On the surface, the two theories appear to address somewhat different developmental issues. Blatt and Blass (1996) are intrigued by individuals' ability to negotiate the two central developmental tasks of interpersonal relatedness and self-definition throughout the life span, with resultant increasingly complex and elaborated representations of self and significant others. Internal representations of self and others and their unfolding in actual development are therefore a primary focus of these investigators (e.g., Blatt, Auerbach, & Levy, 1997), and they strive to explain how these representations are developmentally formed and shaped and how they give rise to psychopathology (Blatt, 1995b).

SDT is primarily concerned with the facilitating conditions for human growth and well-being. Specifically, this theory elucidates the conditions that facilitate autonomously regulated behavior and positive experience. Ryan and Deci (2000a, 2000b) described ways in which individuals negotiate with contextual forces in the course of acting as well as the effects of socializing environments, such as parent and teacher support. Thus, SDT focuses on the

underlying motives for engaging in behavior, both adaptive and pathological, and the factors both in the social context and in prior development that give rise to these motives.

Despite addressing somewhat different developmental questions, the two theories converge in many respects, the most important of which is that both theories depict interpersonal relatedness and self-definition as two key human concerns (Bakan, 1966; Helgeson, 1994).

The themes of interpersonal relatedness and self-definition are explicated in both Blatt's theory and SDT, in somewhat different ways. As discussed by Blatt and Blass (1996), autonomy and competence are two distinct manifestations of self-definition. Thus, by "superimposing" Blatt's ideas on SDT, we propose that a successful evolution of interpersonal relatedness (i.e., "relatedness" in SDT terms) and self-definition (i.e., "autonomy" and "competence" in SDT terms) is a precondition for the initiation of autonomously regulated behavior.

What is to be gained by this theoretical move? We propose that by linking the two theories in such a way, each theory is considerably enriched, resulting in a deeper understanding of human development. Specifically, such integration yields the following gains:

1. Integrating personality/representational and motivational research. Drawing from Blatt's model of the mind (Blatt et al., 1997) with its focus on internal representations of self and others enables a theoretical and empirical exploration of basic personality/representational structures underlying autonomous and controlled motivation. Thus, a rapprochement is obtained between the relatively distinct field of personality development and mental representations and that of motivation.
2. "Phenomenolizing" interpersonal relatedness and self-definition. As summarized above, dependent and self-critical individuals are those who are preoccupied with interpersonal relatedness and self-definition (Blatt & Blass, 1996; Blatt & Zuroff, 1992). Linking dependency and self-criticism with SDT's motivational theory may facilitate understanding of the phenomenology underlying the two personality configurations. Specifically, it would enable a better appreciation of the motivational orientations characteristic of dependent and self-critical individuals, that is, the extent to which they are autonomously motivated or controlled.
3. Linking interpersonal relatedness and self-definition to adaptive functioning. Whereas Blatt's theory (Blatt & Blass, 1996) does consider issues of adaptive development, it focuses more fully on developmental psychopathology. In contrast, SDT places a stronger theoretical and empirical emphasis on adaptive development and superior performance (Deci & Ryan, 1987). By linking the two theories, a more comprehensive picture of both adaptive and maladaptive personality development can be obtained.

On the basis of these points, we hypothesized that individuals' motivational orientation, specifically, the extent to which they are autonomously motivated or controlled in their motivation, explains

the effects of dependency and self-criticism on adaptive and maladaptive outcomes. This general supposition is translated into the mediating model presented in Figure 1. We propose that maladaptive forms of interpersonal relatedness and self-definition (i.e., neediness and self-criticism) will predispose individuals to be less autonomously motivated and more controlled in their motivation, thereby leading to maladaptive functioning. Conversely, adaptive forms of interpersonal relatedness and self-definition will facilitate autonomous motivation, leading in turn to adaptive functioning.

The Present Study

We tested the model presented in Figure 1 in a large sample of adolescents. Because of the strong emphasis on the integration of interpersonal relatedness and self-definition as pivotal developmental tasks in adolescence in both Blatt's theory and SDT (Blatt & Blass, 1996; LaGuardia & Ryan, in press; Ryan & Lynch, 1989), this sample was particularly well suited for the purpose of the present study. Our adolescent participants were administered an extensive protocol, which included (a) the above described DEQ-A, with its Neediness, Relatedness, Self-Criticism, and Efficacy subscales; (b) a measure of autonomous motivation and controlled motivation; (c) the Child Depression Inventory (CDI, Kovacs, 1992); and (d) a measure of positive and negative life events (see descriptions below).

The CDI was used to control for adolescents' level of depression in examining the relations between adaptive and maladaptive forms and interpersonal relatedness and self-definition and autonomous and controlled motivation. This was important because adaptive and maladaptive forms of interpersonal relatedness and self-definition have been shown to be strongly related to depression (Blatt & Zuroff, 1992) and because we wanted to rule out depression as an alternative explanation for the relations between these personality constructs and the motivational constructs.

The positive and negative life events measure was used as a proxy of adaptive and maladaptive functioning, respectively. The rationale for such a selection relies on extensive research demon-

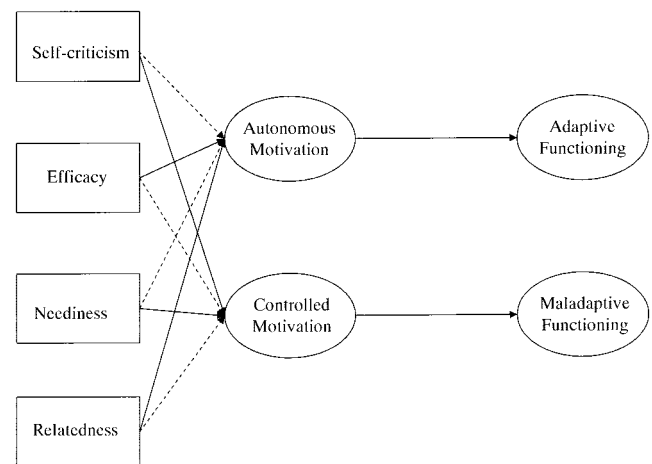


Figure 1. Conceptual model of the relations between the Depressive Experience Questionnaire constructs (i.e., Efficacy, Self-Criticism, Neediness, and Relatedness), motivational orientation, and adaptive functioning. Solid lines indicate hypothesized positive effects; dotted lines indicate hypothesized negative effects.

strating that negative events are generated by personality pathology, including the dimensions of neediness and self-criticism as measured by the DEQ (Priel & Shahar, 2000; Whiffen, Aube, Thompson, & Campbell, 2000), and that elevated levels of negative events predict maladaptive adaptation. This body of literature has also demonstrated that positive events are generated by personal resilience, leading in turn to adaptive functioning (Cohen & Hoberman, 1983; Kanner, Feldman, Weinberger, & Ford, 1991; Reich & Zautra, 1981).

To conclude, controlling for depressive symptoms, we hypothesized the following:

Hypothesis 1: Relatedness and efficacy, as adaptive modes of interpersonal relatedness and self-definition, will predict more positive events, an effect that will be mediated by the presence of autonomous motivation. These dimensions will also predict fewer negative events, an effect that will be mediated by the absence of controlled motivation.

Hypothesis 2: Neediness and self-criticism, as maladaptive modes of interpersonal relatedness and self-definition, will predict more negative events, an effect that will be mediated by the presence of controlled motivation. These dimensions will also predict fewer positive events, an effect that will be mediated by the absence of autonomous motivation.

Method

Participants

The 860 participants (51% female) were recruited from Grades 7, 8, and 9 of an urban district serving lower- to upper-middle class families. The seventh-grade ($n = 301$) and eighth-grade ($n = 306$) participants all came from the district middle school, and the ninth graders ($n = 253$) came from the district high school. In accordance with the district's demographics, approximately 68% classified themselves as European American, 4% as Hispanic, 17% as African American, and 11% as Other. The overall active-consent participation rate was 73%.

Measures

Interpersonal relatedness and self-definition. We assessed interpersonal relatedness and self-definition with the DEQ-A (Blatt et al., 1992). This instrument is based on the adult version of the DEQ (Blatt et al., 1976). Items of the adult version of the DEQ were modified so as to be congruent with the experiential world of participants from early (about ages 11 to 12) to late adolescence. Of the original 66 items of the DEQ, 42 were rephrased and simplified to make them more appropriate for adolescents. Principal-components analysis conducted on the DEQ-A in this sample, which was consistent with previous research on the DEQ and DEQ-A (Blatt et al., 1992; Leadbeater, Kuperminc, Blatt, & Herzog, 1999), yielded three orthogonal factors: Dependency, Self-Criticism, and Efficacy. As described earlier, Dependency assesses needs for obtaining and maintaining close, nurturing, and protective interpersonal relations (e.g., "Without the support of others who are close to me, I would be helpless"). Self-Criticism taps tendencies of setting high self-standards and engaging in a critical stance toward the self when these standards are perceived as unmet (e.g., "If I fail to live up to expectations, I feel unworthy"). Finally, Efficacy reflects feelings of competence, confidence, and inner strength ("I have many inner strengths and abilities"). Responses to the DEQ-A are given on a 7-point scale (*strongly agree* to *strongly disagree*). The reliability and validity of these DEQ factors are at acceptable levels (Blatt, Hart, Quinlan, Leadbeater, & Auerbach, 1993; Blatt et al., 1992).

As described earlier, recent psychometric work (Blatt et al., 1995, 1996; Henrich et al., 2001) has suggested that the Dependency factor of the DEQ-A comprises two subscales. The first subscale, representing adaptive relatedness capacities, was labeled Relatedness. The second subscale, pertaining to maladaptive dependence or neediness, was labeled Neediness. As demonstrated by Blatt et al. (1995, 1996) and by Henrich et al. (2001), these two subscales correlate with clinical and interpersonal outcomes in expected ways. In the present study, we used the Self-Criticism and Efficacy factors, as well as the Relatedness and Neediness subscales of the DEQ-A.

Autonomous and controlled motivation. Two sets of 24 items adapted from Ryan and Connell's (1989) Self-Regulation Questionnaire (SRQ) were used to assess motivational orientations in academic and social domains. Nine items in each domain measured autonomous motivation, that is, reasons that are either intrinsic or well internalized, for engagement in schoolwork and for making and maintaining friendships (e.g., liking and enjoying it, finding it personally valuable). Fifteen items in each domain measured controlled motivation (e.g., to get praise, to show that you can do it better than others can). Each of the four scales had good internal consistency ($\alpha = .93$ for autonomous academic motivation; $\alpha = .91$ for autonomous social motivation; $\alpha = .93$ for academic controlled motivation; $\alpha = .90$ for social controlled motivation), as did composite scales of global autonomous motivation ($\alpha = .93$; and controlled motivation, $\alpha = .95$). Ryan and Connell have established internal and criterion validity for the SRQ. The autonomous and controlled motivation orientations have been shown to have differential patterns of association with measures of perceived competence as well as with indices of coping, anxiety, and enjoyment (Ryan & Connell, 1989).

Adaptive and maladaptive functioning. We assessed adolescent adaptive and maladaptive functioning using the Brief Adolescent Life Event Scale (BALES; Shahar, Henrich, Reiner, & Little, 2003). This 36-item life event scale taps both positive and negative events from six life domains: family relations, relations with close friends, relations with peers, school events, work and nonschool events, and health and body-related events. Importantly, item wording was guided by various action-theory perspectives that depict individuals as actively shaping their environment and development (e.g., Brandtstadter, 1998; Lerner, 1982). Accordingly, BALES items were worded in terms of participants' action ("I argued with a family member") or lack thereof (e.g., "I was not allowed [by my parents] to do something that I wanted to do").

Reliability and validity coefficients of this instrument have been reported by Shahar et al. (2003). These investigators also confirmed a second-order factor structure of the BALES, whereby two second-order factors, Negative Events and Positive Events, are both indicated by three first-order factors. The Negative Events second-order factor is indicated by a Negative Interpersonal Events (NIE) factor and by a Negative Achievement Events (NACE) factor. The Positive Events second-order factor is indicated by a Positive Interpersonal Events (PIE) factor and by a Positive Achievement Events (PACE) factor. In turn, NIE and PIE are indicated by respective negative and positive items of the family, close friends, and peer domains, whereas NACE and PACE are indicated by respective negative and positive items of the school, work, and health and body-related events (see Shahar et al., 2003).

Depressive symptoms. The Child Depression Inventory (CDI; Kovacs, 1992), a commonly used depressive symptoms inventory, was used to measure participants' depressive symptoms. The CDI is a self-report questionnaire assessing depressive symptoms in children between 8 and 14 years of age. It is essentially a downward extension of the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Kovacs (1992) introduced several additional items that tap areas of school, aggression, and other social-peer relations that are relevant to children and adolescents. The scale contains 27 items; each item consists of three statements graded in severity and assigned numerical values from 0 to 2. A total score is computed by adding the numerical values assigned to each marked choice. The possible score for the CDI ranges from 0 to 54.

Coefficient alpha of the scale is typically mid .80s, and in the present study it was higher ($\alpha = .92$).

Recent factor analyses of the CDI suggested that this instrument comprises more than a single Depression factor (cf. Kovacs, 1992). The most recent factor analytic study, conducted by Craighead, Smucker, Craighead, and Illardi (1998), addressed several methodological problems in previous research and yielded two factors that tap internalizing and externalizing symptoms. The Internalizing factor includes 15 items addressing symptoms such as sadness, anhedonia, and self-hate. The Externalizing factor includes 5 items tapping school problems and misbehavior. In the present study, we followed Craighead et al.'s (1998) findings and constructed two indicators of adolescent depressive symptoms, one representing internalizing symptoms (Intsymp, $\alpha = .89$) and the other representing externalizing symptoms (Extsymp, $\alpha = .62$). The remaining 7 items were not used in the present study.¹

Procedure

The instruments were administered as part of a larger protocol consisting of three batteries of questionnaires, which were administered at the end of the spring semester across three sessions separated by approximately 1 week. Participants remained in their classroom while a trained assistant guided them through the protocol and answered any questions. Each session took approximately 35 min to complete. The order of the three questionnaire batteries was counterbalanced.

Results

Analytic Strategy

The analytic strategy employed in the present study was structural equation modeling (SEM; Hoyle & Smith, 1994) using LISREL 8.51 software (Jöreskog & Sörbom, 1996) with maximum likelihood (ML) estimation. Latent constructs were computed for the CDI, the four motivation scales, and the positive and negative adaptation scales. Parceled indicators were used following the guidelines of Kishton and Widaman (1994) and Little, Cunningham, Shahar, and Widaman (2002).² Two parceled indicators, the Intsymp and Extsymp scales, were used to specify the CDI's latent construct. For the motivation constructs, three 3-item parcels of items assessing joy (1), liking (2), and personal investment (3) were used to specify the autonomous motivation constructs in both the academic and social domains. For controlled motivation, the 15 items in each of the two domains were randomly parceled into three 5-indicator parcels per domain. All parcels were of acceptable internal consistency (α s = .76–.89). Information on the parcelling of the BALEs is available in Shahar et al. (2003).

Analyses were conducted in three stages. In the first stage, we adhered to the two-step approach described by Anderson and Gerbing (1988) and established the measurement model of the latent constructs (depression, motivation, and life events constructs) prior to examining the structural relations between them. In this model, we specified two second-order motivational factors—autonomous and controlled motivation, representing the shared variance of each motivational orientation in the social and academic domains—and two adaptation constructs, representing positive and negative life events. In other words, both the motivation and life events constructs were represented by second-order factors in the model. These constructs were correlated with the DEQ–A factor scores for self-criticism, neediness, relatedness, and efficacy, and the CDI.

Because we hypothesized that the motivation constructs would mediate the relationship between the DEQ–A factors and life events, in the second stage we examined the structural relations between the four DEQ constructs (i.e., self-criticism, neediness, relatedness, and efficacy) and the two second-order life events constructs (positive and negative), controlling for depressive symptoms. Such a “direct effects” model constitutes a prerequisite for testing more complex mediating models (Baron & Kenny, 1986; Davis, 1985). In the third stage, we tested the entire mediating model, including the motivation constructs, again controlling for depressive symptoms.

In all SEM analyses, model fit was estimated using four fit indices: The non-normed fit index (NNFI; Bentler & Bonett, 1980; values above .90 represent an acceptable fit), the comparable fit index (CFI; Bentler, 1990; values above .90 represent an acceptable fit), the incremental fit index (IFI; values above .90 represent an acceptable fit), and the root mean square error of approximation (RMSEA; Steiger, 1980; values below .08 represent an acceptable fit). We did not use the chi-square fit index, except to compare the fit of nested models, because of its extreme sensitivity to large sample sizes. At each stage, we used multigroup analyses following Little's (1997) guidelines to test for moderating effects of gender. Little recommended using the Δ NNFI to test for measurement equivalence and Δ chi-square (i.e., the chi-square differences between nested models) to test for equivalence in the latent beta path estimates.

Stage 1: Measurement Model

The measurement model fit the data well (NNFI = .90, CFI = .92, IFI = .92, RMSEA = .066). Correlations among the manifest indicators are presented in the Appendix. Factor loadings are presented in Table 1. Correlations among the latent constructs are presented in Table 2. Note that to identify and represent the two second-order autonomous motivation and controlled motivation

¹ Craighead et al. (1998) reported that three externalizing symptoms (i.e., misbehavior, disobedience, and aggression) loaded significantly on both Internalizing and Externalizing factors. In the present study, these items were used to form the Extsymp indicator but not the Intsymp one.

² In Shahar et al. (2003), we used Kishton and Widaman's (1994) “internal-consistency” approach to creating parcels for multidimensional constructs for the life events scale, which has 12 facets across four domains. Thus for life events we constructed three parcels per domain, each parcel consisting of three items measuring the same facet. To be consistent in this study, we applied the same technique to the CDI and autonomous motivation constructs, which have 2 and 3 facets, respectively. However, the controlled motivation construct consists of 5 facets, so we used the “domain-representative approach” (Kishton & Widaman, 1994; Little et al., 2002) to be consistent with having no more than three parceled indicators per construct. Our rationale for doing this was that (a) even though the motivation constructs do consist of different facets, these facets are so highly intercorrelated that the motivation constructs are essentially unidimensional, and (b) having three indicators per latent construct has been shown to be better than five (Little et al., 2002), so we wanted to consistently have three indicators per construct. To ensure that using the domain-representative parcelling approach for the controlled motivation construct did not affect our results, we tested the model with the indicators reparceled using the internal consistency approach. The results were virtually identical.

Table 1
Factor Loadings of Latent Constructs

Parcel	CDI	Autonomous academic motivation	Autonomous social motivation	Controlled academic motivation	Controlled social motivation	Negative home	Negative school	Positive home	Positive school
Intsymp	.81								
Extsymp	.80								
Autonomous academic 1		.89							
Autonomous academic 2		.99							
Autonomous academic 3		.81							
Autonomous social 1			.92						
Autonomous social 2			.92						
Autonomous social 3			.81						
Controlled academic 1				.96					
Controlled academic 2				.81					
Controlled academic 3				.94					
Controlled social 1					.90				
Controlled social 2					.87				
Controlled social 3					.80				
Home negative 1						.56			
Home negative 2						.67			
Home negative 3						.70			
School negative 1							.60		
School negative 2							.80		
School negative 3							.73		
Home positive 1								.65	
Home positive 2								.78	
Home positive 3								.61	
School positive 1									.61
School positive 2									.78
School positive 3									.72

Note. CDI = Child Depression Inventory.

factors in an unbiased manner (Little, Lindenberger, & Nesselroade, 1999), we set each construct's factor loadings to be equivalent. The controlled motivation factor explained 66% of the variance in each of its two indicators (academic controlled motivation and social self-regulation), and the autonomous motivation factor explained 41% of the variance in each of its two indicators. The two global factors of autonomous motivation and controlled

motivation were mildly correlated ($r = .16, p < .05$), which is expected given that both represent some form of motivated behavior (Ryan, 1995; Ryan & Connell, 1989). These results indicate that there is indeed enough shared variance between the social and academic domains to allow for higher order constructs of a more global motivational orientation. For information on the higher order life event constructs, see Shahar et al. (2003).

Table 2
Latent Construct Correlations

Construct	CDI	Self-criticism	Efficacy	Neediness	Relatedness	Autonomous motivation	Controlled motivation	Negative adaptation
Self-criticism	.60**							
Efficacy	-.17**	-.19*						
Neediness	.26**	.19**	.21**					
Relatedness	.10*	-.12**	.39**	.66**				
Autonomous motivation	-.49**	-.68**	.41**	-.08	.19**			
Controlled motivation	.05	.11**	.32**	.29**	.28**	.13**		
Negative life events	.45**	.39**	.03	.33**	.23**	-.28**	.10*	
Positive life events	-.19**	-.37**	.20**	-.09*	.06*	.56**	.06	.17**

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

Self-criticism correlated negatively with autonomous motivation and positively with controlled motivation, as well as negatively with positive life events and positively with negative life events. Efficacy correlated positively with both autonomous motivation and controlled motivation, as well as with positive life events. Neediness correlated positively with controlled motivation and negative life events and had a slight negative correlation with positive life events. Relatedness correlated positively with autonomous motivation, controlled motivation, and negative life events. Finally, depressive symptoms correlated negatively with autonomous motivation and negative life events and negatively with positive life events.

Stage 2: Direct Effects Model

Before testing the mediational properties of the motivation constructs, we calculated a direct effects model to examine the patterns of unique associations between the DEQ constructs and positive-negative life events. An initial saturated model was computed, and then a more parsimonious model was computed including only significant effects. The Δ chi-square between the two models was nonsignificant. The model with only significant effects fit the data marginally well (NNFI = .87, CFI = .90, IFI = .90, RMSEA = .079). The results are presented in Figure 2. Self-criticism predicted more negative life events ($\beta = .24, p < .01$) and fewer positive life events ($\beta = -.34, p < .01$) and fewer positive life events ($\beta = -.34, p < .01$). Efficacy predicted more positive life events ($\beta = .12, p < .01$). Neither neediness nor relatedness was uniquely associated with positive life events, but both had effects on negative life events ($\beta = .12, p < .01; \beta = .16, p < .01$, respectively). The CDI predicted more

negative life events ($\beta = .25, p < .01$). There were no moderating effects of gender.

Stage 3: Motivation Mediating Model

The motivation constructs were added to the above model to examine (a) the unique patterns of effect of the DEQ-A constructs on autonomous and controlled motivation, controlling for depression, and (b) whether the motivation constructs mediated the associations between the DEQ-A and the life events constructs. As in Stage 2, a saturated model was initially computed followed by a more parsimonious model that only estimated significant pathways. The Δ chi-square between the two models was not significant, and the second model fit the data well (NNFI = .91, CFI = .92, IFI = .92, RMSEA = .065). The results are presented in Figure 3. We first describe the patterns of unique association between the DEQ-A and the motivation constructs and then the indirect, mediational effects of the DEQ-A constructs on the life event constructs.

Self-criticism strongly predicted less autonomous motivation ($\beta = -.62, p < .01$) and had a modest albeit statistically significant effect on controlled motivation ($\beta = .13, p < .01$). Efficacy predicted more autonomous motivation ($\beta = .27, p < .01$) and controlled motivation ($\beta = .30, p < .01$). Neither neediness nor relatedness had unique effects on autonomous motivation. Controlled motivation was positively predicted by neediness ($\beta = .20, p < .01$) but not by relatedness, a result that was consistent with our hypotheses. Finally, the effects of depressive symptoms on autonomous and controlled motivation were nonsignificant.

Our mediating hypotheses were supported regarding autonomous motivation but not controlled motivation. Autonomous mo-

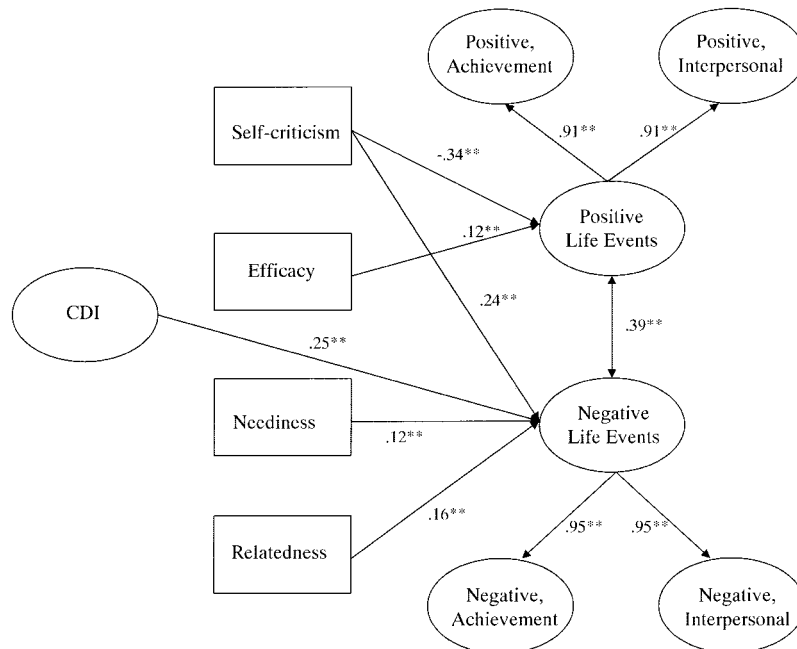


Figure 2. Direct effects model: standardized parameters of the effects of the depressive symptoms and the Depressive Experience Questionnaire (DEQ) variables (i.e., efficacy, self-criticism, neediness, and relatedness) on life events. Although not shown, correlations are estimated among DEQ constructs and between them and the Child Depression Inventory (CDI; see Table 2). ** $p < .01$.

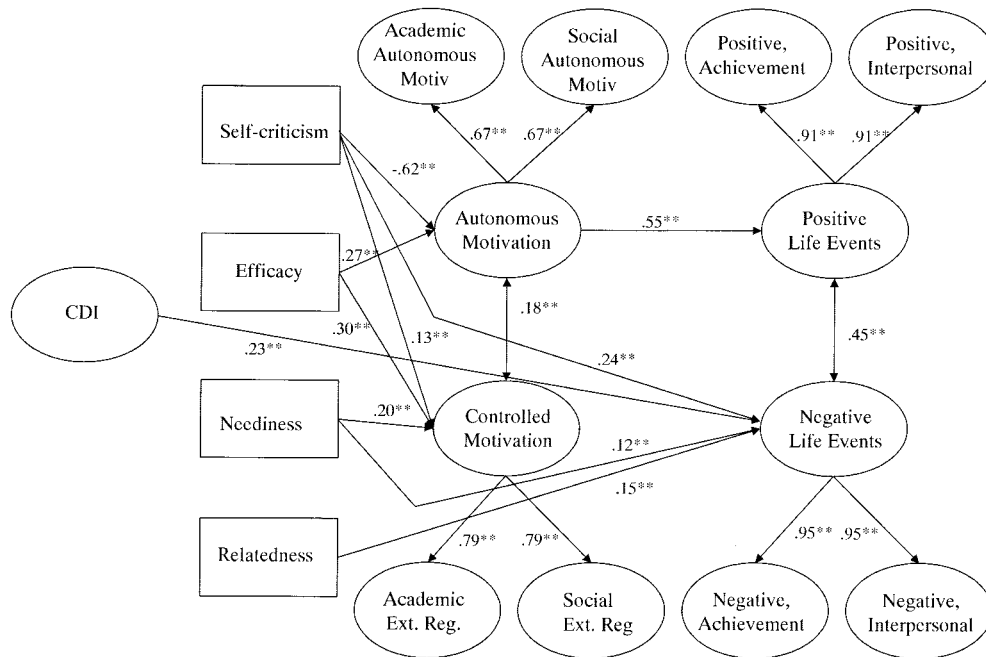


Figure 3. Mediation model: standardized parameters of the effects of the depressive symptoms and the Depressive Experience Questionnaire (DEQ) variables (i.e., efficacy, self-criticism, neediness, and relatedness) on motivational orientation and life events. Although not shown, correlations are estimated among DEQ constructs and between them and the Child Depression Inventory (CDI; see Table 2). ** $p < .01$.

tivation strongly predicted more positive life events ($\beta = .55, p < .01$) and fully mediated the effects of self-criticism and efficacy on positive life events. The indirect effects of self-criticism and efficacy on positive life events were both statistically significant ($\beta = -.34, p < .01$; $\beta = .15, p < .01$, respectively). Controlled motivation had no effect on negative life events and thus could not mediate any of the effects of the DEQ-A factors. In fact, the effects of the DEQ-A and the CDI on negative adaptation were virtually unchanged from the direct effects model presented in Figure 1. There were no moderating effects of gender.³

Given the limitations of the cross-sectional data, we attempted to further address direction of effects in two manners: (a) by testing two “inverted” models and (b) by testing nonrecursive models of the relations between motivation and the DEQ.

In the first inverted model, the dependent variables were autonomous and controlled motivation, the independent variables were self-criticism and efficacy, and the mediators were life events (see Little, Lopez, & Wanner, 2001; and Zuroff & Duncan, 1999; for a similar approach to comparing SEM models in cross-sectional designs). We found very weak mediating effects in this inverted model. Even though there were significant indirect effects of self-criticism and efficacy on autonomous motivation via positive life events, the residual direct effects of the two DEQ-A variables were still significant. In fact, these effects did not drop much in magnitude (i.e., for self-criticism, $\beta = -.35$, down from $-.55$; for efficacy, $\beta = .22$, down from $.27$). In the second inverted model, the dependent variables were life events, the independent variables were autonomous and controlled motivation, and the mediators were the DEQ-A variables. The only significant direct effect was between autonomous motivation and positive events ($\beta = .65, p < .01$), and this effect was not mediated at all by any of the DEQ-A

variables, ($\beta_{\text{autonomous motivation}} = .62$), $\Delta\chi^2(4, N = 860) = 3.57, ns$, when mediating paths from the DEQ-A variables were included. Thus, the model presented in Figure 3 appears to be the most plausible one in the context of our cross-sectional design.

We also examined the possibility of reciprocal relations between the DEQ variables and the motivation constructs by conducting several nonrecursive SEM models in which self-criticism and efficacy both predict and are predicted by autonomous motivation, and neediness both predicts and is predicted by controlled motivation. Because nonrecursive models might yield unstable solutions, a stability index was devised to assess the stability of nonrecursive elements in the model (Bentler & Freeman, 1983; Fox, 1980). Values above 1 of this stability index designated unstable nonrecursive models, which was the case in all but one of the models tested. Fortunately, the single stable model pertained to the strongest and most important relations found in the present study—those between self-criticism and autonomous motivation,

³ We also explored interactions among the DEQ-A constructs, and between these constructs and depression, in predicting motivational orientations. No statistically significant interactions were found among the DEQ-A constructs. Three significant interactions between depression and the DEQ-A constructs were found. Participants’ depression reduced the deleterious effect of self-criticism on autonomous motivation and the protective effect of efficacy on autonomous motivation. Additionally, participants’ depression increased the effect of neediness on controlled motivation. Nevertheless, the post hoc nature of these hypotheses and the fact that, in general, interactions are less replicable than main effects (Chaplin, 1991) have led us to emphasize the main effects obtained in this study and to refrain from interpreting these interactions until they are replicated in future studies.

stability index = .006. We found that self-criticism significantly predicted autonomous motivation ($\beta = -.46, p < .001$) whereas autonomous motivation did not predict self-criticism ($\beta = -.01, ns$), results that are consistent with our theoretical considerations.

Discussion

In the context of a large sample of early adolescents, we found partial support for a mediating model based on the integration of Blatt's (1974) theory of personality development and Deci and Ryan's (1985) SDT. Specifically, controlling for depressive symptoms, we found that autonomous motivation fully mediated the relation between adaptive and maladaptive representations of the self, as measured by DEQ-A efficacy and self-criticism, and adaptive functioning, as measured by the generation of positive life events. We did not find similar mediating effects involving relatedness, a result that was contrary to our predictions. Neither did we find support for the expected mediating role of controlled motivation in the relations between neediness and self-criticism and poor functioning, as measured by negative life events. Nevertheless, our study represents an important first step in integrating Blatt's theory of interpersonal relatedness and self-definition with Deci and Ryan's SDT. These findings also shed light on the role of protective, pleasure-related processes in adaptive adolescent development. We discuss these and related issues in turn and conclude with limitations and suggestions for further research.

Integration of Blatt's Theory and SDT

Adolescent self-criticism was associated with reduced autonomous motivation and elevated levels of controlled motivation. This finding extends the depiction of self-criticism as a severe vulnerability factor (Blatt, 1995a; Blatt et al., 2001; Shahar, 2001) by shedding light on one of the mechanisms, or mediators, of the adverse effect of self-criticism. As expected, the absence of such autonomous motivation is in turn related to adolescents' failure to generate positive life events.

The expected findings that adolescents' efficacy was associated with more positive life events and that this effect was fully mediated by autonomous motivation are consistent with tenets from both Blatt's theory and SDT. This finding provides further support for Blatt and colleagues' argument that efficacy reflects an adaptive form of self-definition (Kuperminc, Blatt, & Leadbeater, 1997; Shahar, Gallagher, Blatt, Kuperminc, & Leadbeater, 2002). At the same time, this finding is consistent with SDT's postulate that the attainment of a sense of confidence in one's competence is a prerequisite for autonomous motivation (Ryan, 1995).

However, efficacy was also associated with elevated, rather than reduced, levels of controlled motivation. Although not hypothesized, this finding is consistent with Deci and Ryan's (1985, 1987) argument that the need for competence (i.e., efficacy) can accompany both autonomous and controlled forms of motivation. Indeed, SDT has emphasized that competence alone does not ensure healthy self-regulation (Ryan & Deci, 2000b). It therefore follows that the DEQ-A Efficacy factor is associated with being motivated, which in most circumstances is a preferable state to helplessness or amotivation (Ryan, 1995).

We found that neediness predicted more controlled motivation, a result that is consistent with our hypotheses. However, although relatedness was positively correlated with autonomous motivation,

when we examined the effect while controlling for the remaining variables, the effect of relatedness on autonomous motivation was no longer statistically significant. An examination of Table 1 suggests that this nonsignificant effect resulted from controlling for the equivalent effect of efficacy. Specifically, efficacy and relatedness were correlated, and efficacy was also positively correlated with autonomous motivation, exerting a unique effect, namely, controlling for the remaining variables. This pattern suggests that whereas elevated relatedness is indeed associated with elevated autonomy, relatedness does not contribute to autonomy over and above the effects of efficacy. Also note that relatedness predicted more negative life events. In sum, our findings pertaining to the DEQ-A Relatedness subscale suggest that although relatedness is a more adaptive facet of interpersonal concerns than is neediness, it differs somewhat from SDT's conceptualization of relatedness. Even though the items of the DEQ-A Relatedness subscale address a relatively adaptive form of coping with interpersonal concerns (Blatt et al., 1995, 1996; Henrich et al., 2001), they were formulated in the context of measuring vulnerability to depression and thus might not be optimal for tapping the most adaptive form of interpersonal relatedness.

Depression and Protective, Pleasure-Related Processes: The Absence Principle

Whereas recent studies document elevated and clinically significant levels of depression in adolescence (Gotlib, Lewinson, & Seeley, 1995; Lewinson, Solomon, Seeley, & Zeiss, 2000), our study qualifies the role of depression in adolescent adaptation. When both effects of adolescent personality and depressive symptoms were examined, the former construct but not the latter predicted adolescent motivational orientation. Moreover, whereas both adolescent personality (self-criticism, neediness, and relatedness) and depression predicted negative events, only adolescent personality (self-criticism and efficacy) predicted positive events. These findings are consistent with previous studies in which self-criticism, as measured either by the DEQ or by other instruments, was found to exert a greater effect on functioning than depressive symptoms (Priel & Shahar, 2000; Shahar, Blatt, Zuroff, Krupnick, & Sotsky, in press; Shahar & Priel, in press).⁴

The most striking of these effects is represented by the indirect path linking self-criticism, autonomous motivation, and positive

⁴ In a series of investigations, Shahar and colleagues examined the effects of depressive symptoms and self-criticism on social context variables such as stressful events and social support (Priel & Shahar, 2000; Shahar, Blatt, et al., in press; Shahar & Priel, in press). In all these studies, the investigators found that when the effects of depressive symptoms and self-criticism on the social context were modeled in the same structural equation, only the effects of self-criticism were statistically significant. This consistent pattern, which was obtained with different measures of self-criticism, depressive symptoms, and social context variables, attests to the uniquely powerful effect of self-criticism (for reviews, see Blatt, 1995a; Shahar, 2001, 2002), life events, and social support. However, caution should be exercised in interpreting the null findings of depressive symptoms on the social context in the presence of self-criticism. Rather than suggesting that depression does not predict the social context, these findings could be construed as suggesting that the active ingredient in the effect of depression on the social context is personality related. Additionally, the possibility that some unidentified feature of these studies suppressed the effect of depression on the social context cannot be ruled out.

events. This indirect path embodies two intriguing patterns. First, the magnitude of the effects included in this path is markedly stronger than the magnitude of the other statistically significant effects in the model. Second, whereas autonomous motivation predicted adaptive functioning (i.e., positive events), controlled motivation did not predict poor functioning (i.e., negative events).

Taken together, these two patterns suggest that the absence of positive, protective, and pleasure-related processes might be more developmentally detrimental than the presence of negative, adverse, and externally controlling processes. This pattern, which we label the *absence principle*, has also been found in other fields of developmental psychopathology. For example, mounting evidence indicates that individuals' inability to experience daily positive affect, also termed "anhedonia," predisposes individuals to a full-blown episode of major depression and resultant suicide more than these individuals' tendency to experience negative affect (Clark & Watson, 1991; Laurent et al., 1999; Loas, 1996). Similarly, the absence of positive life events contributes to the development of psychological distress over and above the presence of negative events (Shahar & Priel, 2002). Furthermore, the absence of expected social support in close relations might be as stressful and demoralizing as the presence of a serious crisis (Harris, 1992). These examples, which are consistent with the emerging movement of positive psychology in psychological research (Masten, 2001), point out the centrality of protective, pleasure-related processes to development and psychopathology.

This absence principle raises the question of why self-critical adolescents would refrain from engaging in rewarding behaviors. Research to date suggests that the answer may lie in the type of values and imperatives that are internalized by these individuals in the course of their development. As discussed by Blatt (1995a), self-criticism evolves in the context of a harsh and demanding upbringing, in which parents strongly encourage the child to succeed yet do not provide positive feedback to the child when he or she does. The child thus learns to push himself or herself further toward the attainment of increasingly unrealistic standards. It seems plausible that in this process, children learn to disengage from their inner cues as to which behaviors are pleasurable or not and to attune to those behaviors that are likely to be approved of by others.

Limitations and Suggestions for Further Research

It is important to note that the present study relied on a cross-sectional design, which is generally limited in testing causal hypotheses (Kobasa, 1985). Compelling theoretical considerations have led us to treat the DEQ constructs reflecting internal representations of self and others as causal factors, Deci and Ryan's (1985) motivational constructs as mediators, and the life event variables as outcomes. Moreover, we found that an SEM model consistent with these theoretical considerations fully accounts for the effects of self-criticism and efficacy on positive life events, whereas the inverted models we tested yielded less comprehensive and coherent results. Nevertheless, a final determination of the exact causal relations between interpersonal relatedness, self-definition, and motivation orientations awaits future longitudinally designed studies.

Another limitation pertains to the instruments used in the present study to measure interpersonal relatedness, self-definition, and motivational orientation. First, because all of these are self-

report instruments, they share method variance that might have inflated the magnitude of the associations found between the study constructs. It is therefore incumbent on investigators in the field to develop non-self-report measures of these constructs and to use these measures in assessing the relations between interpersonal relatedness, self-definition, and the motivation orientations. Second, although the measures used here are well validated and extensively used in developmental and clinical research, they are not the only measures of their respective constructs, and it is possible that slightly different results would be obtained with different measures. For instance, the neediness and relatedness facets of the DEQ, which pertain to adaptive and maladaptive aspects of interpersonal relatedness and self-definition, have been identified only recently (Blatt et al., 1995). Although current data as to the validity of these two constructs is encouraging (Blatt et al., 1995, 1996; Henrich et al., 2001), an important avenue for further research would be to examine the relations between neediness and relatedness and other measures of interpersonal relatedness, as well as to compare the relations between interpersonal relatedness and motivation that are obtained using different measures.

Another important avenue for future research is the examination of the role played by adolescents' attachment style in the link between the DEQ-A constructs and motivation. Recent work in SDT has directly related security of attachment to autonomy support (La Guardia, Ryan, Couchman, & Deci, 2000). Similarly, several authors have pointed out similarities and differences between Blatt's theory of interpersonal relatedness and attachment theory (Blatt & Homann, 1992; Blatt & Zuroff, 1992; Zuroff & Fitzpatrick, 1995). One notable similarity is the emphasis in both theories on "mental maps" of relationships that are labeled *internal representations of self and others* in Blatt's theory and *internal working models* in attachment theory. However, interpersonal relatedness and self-definition are broader-based than internal working models in that they refer to other forms of personality organization in addition to internal mental maps.

Recently, researchers have pointed out the possibility that maladaptive aspects of interpersonal relatedness and self-definition, as measured by the DEQ, provide fine-grained distinctions between various forms of insecure attachment, with dependency relating to anxious/insecure attachment, and self-criticism relating to avoidant/insecure attachment (Bagtos & Leadbeater, 1994; Zuroff & Fitzpatrick, 1995). These very preliminary findings highlight the exciting possibility that security of attachments formed early in childhood (Bowlby, 1969) might contribute to the development of interpersonal relatedness and self-definition (Blatt & Homann, 1992), which in turn leads to differential motivational orientations and differential effects of personality on the social context. It is our hope that in the future researchers will address this complex chain of effects in an effort to elucidate the ways in which children and adolescents actively contribute to the very social environment that shapes their development (Lerner, 1982).

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Appendix

Correlations Among Parceled Indicators

Indicator	1	2	3	4	5	6	7	8	9	10
1. Intsymp										
2. Extsymp	.65									
3. Self-criticism	.48	.48								
4. Efficacy	-.18	-.10	-.20							
5. Neediness	.15	.28	.19	.21						
6. Relatedness	-.01	.17	-.12	.40	.66					
7. Aut. acad. 1	-.29	-.22	-.36	.28	-.03	.08				
8. Aut. acad. 2	-.27	-.23	-.35	.27	-.03	.11	.90			
9. Aut. acad. 3	-.37	-.27	-.47	.33	-.06	.11	.79	.73		
10. Aut. soc. 1	-.23	-.19	-.46	.20	-.06	.12	.34	.32	.45	
11. Aut. soc. 2	-.21	-.20	-.46	.21	-.06	.10	.37	.35	.49	.84
12. Aut. soc. 3	-.23	-.18	-.38	.23	-.07	.10	.31	.27	.50	.75
13. Cntrl. acad. 1	.01	.00	.10	.28	.25	.23	.25	.26	.17	-.07
14. Cntrl. acad. 2	.06	.07	.12	.27	.22	.19	.19	.20	.09	-.09
15. Cntrl. acad. 3	.02	.03	.10	.27	.24	.24	.25	.26	.18	-.07
16. Cntrl. soc. 1	.01	.01	.05	.18	.18	.18	.10	.11	.04	.00
17. Cntrl. soc. 2	.05	.03	.05	.17	.13	.14	.10	.10	.04	-.03
18. Cntrl. soc. 3	.08	.06	.09	.14	.19	.18	.02	.03	-.04	-.01
19. Home neg. 1	.19	.26	.22	.02	.17	.13	-.20	-.23	-.19	-.08
20. Home neg. 2	.19	.17	.22	-.02	.20	.12	-.11	-.11	-.14	-.14
21. Home neg. 3	.19	.27	.29	.13	.28	.20	-.03	-.04	-.08	-.21
22. School neg. 1	.36	.26	.29	-.10	.11	.06	-.19	-.16	-.20	-.13
23. School neg. 2	.23	.28	.27	.02	.24	.19	-.11	-.10	-.11	-.10
24. School neg. 3	.22	.30	.26	.02	.25	.19	-.10	-.09	-.07	-.09
25. Home pos. 1	-.12	-.13	-.27	.11	-.08	.03	.20	.19	.28	.29
26. Home pos. 2	-.05	-.11	-.21	.03	-.02	.08	.18	.21	.21	.23
27. Home pos. 3	.01	-.07	-.11	.05	.01	.03	.12	.15	.14	.10
28. School pos. 1	-.24	-.24	-.34	.20	-.11	.02	.24	.24	.33	.24
29. School pos. 2	-.08	-.15	-.30	.29	-.08	.05	.28	.28	.35	.24
30. School pos. 3	-.03	-.11	-.21	.10	-.05	.03	.16	.17	.20	.21

Note. Intsymp = internalizing symptoms; Extsymp = externalizing symptoms; Aut. = autonomous; acad. = academic; soc. = social; Cntrl. = controlled; neg. = negative; pos. = positive.

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
.74																		
-.06	-.05																	
-.08	-.09	.77																
-.04	-.04	.91	.76															
-.02	-.02	.51	.54	.50														
-.02	-.02	.51	.55	.50	.78													
-.03	-.04	.49	.54	.49	.71	.69												
-.10	-.03	-.06	-.03	-.08	.00	.04	.03											
-.16	-.07	.05	.08	.06	.08	.08	.07	.44										
-.24	-.16	.15	.18	.15	.13	.09	.10	.33	.47									
-.08	-.09	.01	.03	.02	.03	.05	.29	.34	.41	.37								
-.10	-.07	.05	.08	.07	.05	.05	.16	.40	.48	.51	.54							
-.09	-.07	.00	.02	.01	.04	.00	.00	.35	.39	.55	.46	.58						
.27	.30	-.04	-.05	-.03	-.04	-.02	-.09	.02	-.00	-.01	-.00	.10	.09					
.26	.24	-.04	-.02	-.02	-.00	.04	-.01	.09	.20	.03	.14	.16	.11	.54				
.09	.05	.09	.10	.09	.06	.10	.09	.06	.18	.19	.20	.18	.18	.27	.53			
.23	.19	.02	-.00	.02	-.04	.00	-.05	-.07	-.10	-.15	-.28	-.05	-.04	.43	.36	.21		
.28	.22	.10	.06	.13	.05	.05	.04	.04	.04	-.01	.01	.07	.08	.46	.44	.41	.52	
.20	.15	.02	.06	.05	.06	.05	.05	.06	.13	.04	.12	.12	.18	.35	.48	.53	.40	.55

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