

DIFFERENTIATION OF SELF AND ATTACHMENT IN ADULTHOOD: RELATIONAL CORRELATES OF EFFORTFUL CONTROL

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ABSTRACT: This study tested relations between differentiation of self, adult attachment, and effortful control in a sample of 225 adults. Results indicated that adult differentiation of self uniquely predicted greater effortful control, after accounting for variance due to attachment security. Greater ability to take “I” positions in relationships, along with lower emotional reactivity (ER) and attachment anxiety, were unique predictors of effortful control. Significant relationships emerged between dimensions of attachment and differentiation of self, with strongest associations observed between attachment avoidance and emotional cutoff ($r = -.78$), and attachment anxiety and ER ($r = -.60$).

KEY WORDS: Bowen theory; differentiation of self; adult attachment; effortful control.

The field of family therapy has a longstanding interest in the role that family systems play in facilitating healthy development or competence among individual members. Among relational theories of development, Bowlby’s attachment (Ainsworth, 1989; Bowlby, 1982, 1988) and Bowen’s family systems (Bowen, 1978; Kerr & Bowen, 1988) theories each provide a framework for understanding how internalization of family of origin experiences facilitates the development of self-

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regulation or effortful control. Self-regulation is viewed as a distinct aspect of human temperament and is defined as the ability to actively modulate arousal and emotion feelings (Derryberry & Rothbart, 1988; Rothbart, Ahadi, & Evans, 2000). Individuals who are capable of self-regulation can engage in conscious effortful control of their attention (i.e., flexibly shift and focus attention), emotion feelings (i.e., down-regulate negative emotions such as fear and anger, or optimize positive emotions such as interest and joy), and behavior (i.e., engage in adaptive approach behaviors or inhibit maladaptive behavioral responses) (Derryberry & Rothbart, 1988, 1997; Rothbart et al., 2000).

While effortful components of temperament (i.e., self-regulation or effortful control) are within the purview of voluntary, conscious control, the two remaining aspects of temperament—arousal and emotion—are considered more reactive phenomena that lie largely outside of one's voluntary control (Derryberry & Rothbart, 1988, 1997; Kochanska, Murray, & Harlan, 2000; Rothbart et al., 2000). Self-regulation or effortful control is an important dimension of temperament, since it enables an individual to suppress reactive tendencies, modulate emotion feeling, and engage in purposeful behavior. The capacity for effortful control develops in early childhood (Kochanska, Coy, & Murray, 2001; Rothbart, Ellis, Rueda, & Posner, 2003), and is a strong predictor of psychological adjustment and social functioning in adulthood. For example, greater effortful control corresponds with the ability to delay gratification and regulate fear reactions in children (Kochanska, 1993; Rothbart, Ahadi, & Hershey, 1994), and with less negative emotional arousal and more effective coping with stressful life events (Fabes & Eisenberg, 1997). Adults who demonstrate greater effortful control score higher on personality dimensions of agreeableness and conscientiousness (Jensen-Campbell et al., 2002), and lower on indices of neuroticism and shyness (Derryberry & Reed, 1994; Eisenberg, Fabes, & Murphy, 1995).

Two central concepts in Bowlby's attachment theory and Bowen's family systems theory—attachment and differentiation of self, respectively—have been employed by family theorists and researchers to help account for individual differences in self-regulation, based on variations in relational experiences in one's family of origin and/or current intimate relationships. From the perspective of contemporary attachment theory (e.g., Bowlby, 1988; Lopez & Brennan, 2000), capacity for effortful control depends on the experience of secure attachment relationships with caregivers, which leaves an individual with a felt sense of security and positive internal working models of self and others in adulthood (i.e., low anxiety and avoidance).

According to Bowen's family systems theory (1976, 1978), an individual's level of self-differentiation—the ability to distinguish between thoughts and feelings, and to think clearly in the midst of strong emotion—enables or constrains the capacity for effortful self-control.

While considerable research exists linking quality of attachment representations with capacity for self-regulation (e.g., Fuendeling, 1998; Lopez & Brennan, 2000), empirical support for Bowen's proposition that differentiation of self is associated with greater self-regulatory skill is lacking. Thus, the first purpose of this study was to examine convergence and divergence between Bowen's concept of differentiation of self and Bowlby's concept of attachment security. The second purpose was to test theoretical propositions that the capacities for self-differentiation and attachment security are associated with greater self-regulation or effortful control.

DIFFERENTIATION OF SELF

Differentiation of self involves the (intra-personal) capacity to distinguish the thinking and feeling systems and the (interpersonal) ability to preserve autonomy within the context of deep intimacy with important others (Bowen, 1976, 1978). Thus, greater differentiation involves the ability to engage in thoughtful examination of situations, to maintain full awareness of one's emotions, and to experience strong affect or shift to calm, logical reasoning when circumstances dictate. More differentiated adults are thought to be more capable of reflecting on, experiencing, and modulating their emotions, coping with uncertainty and ambiguity, and remaining calm in intimate relationships (Bowen, 1978; Kerr & Bowen, 1988). Therefore, as one's basic level of differentiation increases, so does one's capacity to distinguish between thinking and feeling processes, regulate strong emotion, and think clearly under stress:

There are varying degrees of "fusion" between the emotional and intellectual systems in the human. The greater the fusion, the more the life is governed by automatic emotional forces that operate...and the less [one] is able to consciously control [one's] own life (Bowen, 1978, p. 305).

Thus, less differentiated persons are thought to be more emotionally reactive and to have difficulty thinking clearly under stress and maintaining a solid sense of self in close relationships (Bowen, 1978; Kerr & Bowen, 1988).

Interpersonally, greater self-differentiation enables development of an autonomous self in emotionally committed relationships. Less differentiated individuals engage in interpersonal distance regulation to manage anxiety (Kerr, 1992), while more differentiated persons are comfortable with intimacy and refrain from using fusion or emotional cutoff (EC) to regulate internal tension. According to Bowen (1978; Kerr & Bowen, 1988), those who tend to fuse with others become overwhelmed by real or perceived separations from significant others, while those who gravitate toward emotional cutoff (EC); tend to become anxiously reactive when faced with emotional intimacy. Research has linked adult differentiation problems with greater psychological distress (Peleg-Popko, 2002; Skowron & Friedlander, 1998; Tuason & Friedlander, 2000), coping and problem solving deficits (Murdock, Gore, & Horosz, 1998), career decision-making problems (Larson, 1995; Larson & Wilson, 1998), marital discord (Kosek, 1998; Skowron, 2000), and even physical child abuse potential (Skowron, 2001).

Though we could locate no research that directly tested Bowen's proposition that differentiation of self is associated with greater self-regulation in adulthood, we reasoned that the dimensions of self-differentiation characterized by less emotional reactivity (ER) and greater ability to take "I" positions (IP) in relationships with others (e.g., Skowron, Holmes, & Sabatelli, 2002) would be particularly relevant for the capacity for greater self-regulation or effortful control. Since lower differentiation of self is characterized by emotional overwhelming, and impairment in one's ability to distinguish thoughts from feelings and think clearly under stress, we reasoned that individuals who are less differentiated would also demonstrate lower effortful control.

ADULT ATTACHMENT

Bowlby (1988) described the attachment system as a stress-activated regulatory system that promotes development of security through the provision of sensitive, reliable parenting in which an individual's responsiveness to threatening stimuli (i.e., anxiety, fear) is managed relationally with help from one's caregiver (Lopez & Brennan, 2000). Over time in a secure relationship, the protective and regulatory functions performed by one's caregiver are gradually internalized so that in adulthood, one has achieved the capacity to self-soothe in stressful or anxiety-provoking situations, and experience comfort and satisfaction with intimacy and autonomy. In contrast,

experiences with relationships characterized by insecure attachment lead to the development of secondary strategies for (a) managing anxiety associated with real or perceived threats, and for (b) eliciting assistance from caregivers (Lopez & Brennan, 2000).

Two dimensions—*anxiety* and *avoidance*—have emerged from research on adult attachment as critical underlying domains on which security and insecurity of attachment can be distinguished (Ainsworth, Blehar, Waters, & Wall, 1978; Brennan, Clark, & Shaver, 1998; Lopez & Brennan, 2000). Anxiously attached individuals respond to stress through hyper-activation of the attachment system and tend to be preoccupied with the availability of attachment figures. Conversely, avoidant individuals deactivate or suppress the attachment system when under stress, and tend to deny the importance of attachment relationships and avoid intimacy with others (Lopez & Brennan, 2000).

In contrast to the paucity of research examining relations between self-differentiation and self-regulatory control, considerable research on dimensions of adult attachment has documented consistent associations between relational security and effortful control in adulthood. For example, secure attachment in adulthood has been associated with better affect regulation, more flexible and accurate appraisals of self and others, greater tolerance for ambiguity, greater awareness of self and the mental states of others, and mature autonomy and relatedness with others (e.g., Fuendeling, 1998; Lopez & Brennan, 2000).

Two relatively orthogonal dimensions of attachment security exist—*anxiety* and *avoidance*—which in turn correspond with distinct methods of expressing and managing attachment-related emotions (e.g., Cassidy, 1994; Fuendeling, 1998; Lopez & Brennan, 2000). Specifically, more anxious adults have been shown to use a maximizing or heightening style of emotion regulation, while more avoidant adults tend to employ an inhibiting style of emotion regulation. Anxious individuals tend to exaggerate their emotional experiences in relationships, procrastinate more, have difficulty concentrating, and become easily distracted by interpersonal concerns (Hazan & Shaver, 1987; Mikulincer, 1998). They tend to perseverate on negative feelings associated with attachment distress (Birnbaum, Orr, Mikulincer, & Florian, 1997; Fraley & Shaver, 1998), and have better recall of anxious and sad events (Mikulincer & Orbach, 1995). Anxious individuals tend to experience more negative affect in the midst of relationship conflict and report feeling less confidence in their ability to manage their own strong negative emotion (Creasey & Hesson-McInnis, 2001).

In contrast, avoidant individuals tend to engage in chronic suppression of the attachment system, in which attention is diverted away from both distressing stimuli and attachment related thoughts and feelings (Birnbaum et al., 1997; Fraley & Shaver, 1998; Mallinckrodt, 2000; Mikulincer, 1998). When distressed, avoidants are less likely to seek social support (Magai, 1996), and more likely to maintain an exaggerated façade of self-reliance (Mikulincer, 1998). Moreover, avoidants appear less confident about their ability to successfully manage relationship conflict and less skilled in using positive conflict management than secures (e.g., love, affection, validation, stop actions, and leveling) (Creasey & Hesson-McInnis, 2001).

Interestingly, research evidence suggests that the avoidantly-attached individual tends to deactivate only the conscious cognitive perceptions of attachment-related affect, while continuing to experience physiological manifestations of attachment-related distress. For example, Sroufe and Waters (1977) observed in a Strange Situation Test that avoidant children were not overtly distressed by their mothers' absences, though they showed elevated heart rates. Main, Kaplan, and Cassidy (1985) documented a similar pattern of increased autonomic arousal with defensive denial of attachment needs during distressing attachment experiences. More recently, Dozier and Kobak (1992) observed a similar phenomenon in adults, whereby avoidants repressed awareness of negative emotion that remained present at the physiological level, in terms of heightened skin conductance.

ATTACHMENT, SELF-DIFFERENTIATION, AND EFFORTFUL CONTROL

In sum, we sought to examine the convergence and divergence between Bowlby's (1982) concept of attachment security and Bowen's (1978) concept, differentiation of self. We hypothesized that greater differentiation of self (i.e., lower ER, fusion, EC, and better skill at taking an IP in relationships) would be associated with lower attachment anxiety and avoidance. Second, we tested whether greater differentiation of self and lower attachment anxiety and avoidance would predict greater effortful control. Though we hypothesized that our results would confirm existing research documenting relations between dimensions of attachment and self-regulation, we were interested in testing Bowen's theoretical assertion that greater differentiation of self is associated with greater regulatory control. Thus we examined whether variance associated with differentiation of

self-predicted self-regulation skills, over and above adult attachment security.

METHOD

Participants

Participants were 225 adults, 177 women (79%) and 47 men (21%; one gender unspecified) with a mean age = 37.12 (SD = 11.85). Individuals who were in committed, intimate relationships at the time of the study comprised a majority (59.8%) of the sample (i.e., married respondents = 43.4%, remarried = 3.5%, and co-habiting = 12.9%, respectively), while the remaining participants were single, never married (22.5%), separated or divorced (17.5%), widowed (0.3%), and 2.1% with unknown relationship status. Most (71.9%) participants were employed, and were middle-class, with median household incomes ranging from \$50,000 to \$60,000. The ethnic composition of the sample was 5.4% biracial/multiracial, 1.1% African-American, 0.6% Asian-American, 0.6% Latino/a, 1.6% Native American, and 88.3% Caucasian/European-American. Participants' highest levels of education were as follows: 10.4% high school graduates; 42.2% some college/technical training; 21.9% bachelors degree; 19.7% masters degree; and 0.3% doctorate, MD, or JD. Over half (62.6%) reported a history of counseling or psychotherapy, with mean satisfaction = 2.24 (SD = 1.08) on a 1 (very satisfied) to 4 (very dissatisfied) scale.

Instruments

The differentiation of self inventory-revised. (DSI-R; Skowron & Friedlander, 1998; Skowron & Schmitt, 2003). The DSI-R is a 46-item self-report measure that focuses on adults, their significant relationships, and current relations with family of origin. Participants rate items using a 6-point Likert-type scale, ranging from 1 (not at all true of me) to 6 (very true of me). The DSI contains four subscales: ER, EC, IP, and Fusion with Others (FO). The ER scale assesses the tendency to respond to environmental stimuli on the basis of autonomic emotional responses, emotional flooding, or emotional lability. The IP scale contains items that reflect a clearly defined sense of self and the ability to thoughtfully adhere to one's convictions even when pressured to do otherwise. The EC scale consists of items reflecting fears of

intimacy or engulfment in relationships, and the accompanying behavioral defenses against those fears. The FO scale reflects emotional over-involvement with significant others and over-identification with one's parents—taking in parental values, beliefs and expectations without question.

Subscale scores are calculated by reversing raw scores on all items on the ER, EC, and FO subscales and one item on the IP subscale. Scores on all items are then summed across a subscale and then divided by the number of items on the subscale, such that scores on each subscale also range from 1 to 6, with high scores reflecting greater differentiation of self, specifically, less ER, EC, and FO, and more skill in taking IP in relationships. Internal consistency reliabilities of the DSI-R and its subscales reported by Skowron and Schmitt (2003) were good: DSI full scale = .92, ER = .89, IP = .81, EC = .82, and FO = .85. Theoretically based relationships between DSI scores and less chronic anxiety, less symptomatology (Skowron & Friedlander, 1998), greater marital satisfaction (Skowron, 2000), and problem-focused coping styles (Murdock et al., 1998) provided evidence for construct validity. Confirmatory factor analyses support its multidimensional factor structure (Skowron & Friedlander, 1998).

The experiences in close relationships scale. (ECR; Brennan et al., 1998). The ECR is a 36-item self-report inventory of adult attachment, developed based on 14 existing self-report measures of attachment, and composed of two higher order scales measuring attachment anxiety and attachment avoidance. The Anxiety scale assesses preoccupation with relationships, fears of rejection, and desire to merge with others. The Avoidance scale contains items that measure discomfort with closeness and dependency, denial of attachment needs, and compulsive self-reliance. Individuals rate each item based on how they generally feel in relationships, on a scale of 1 (disagree strongly) to 7 (agree strongly). Higher scores indicate greater attachment anxiety or avoidance, respectively. Internal consistency reliabilities were high in this sample: Anxiety = .92, Avoidance = .92. Evidence in support of the ECR's construct validity is based on significant positive relations with relationship health and satisfaction, and negative relations with binge drinking under stress and drinking to reduce anxiety (Brennan & Shaver, 1995).

Effortful control scale. (ATQ-S-EC; Rothbart et al., 2000). The ATQ-S-EC scale is a 19-item self-report measure of effortful control on the Adult Temperament Questionnaire-Short Form (ATQ-S), formerly

known as the Physiological Reactivity Questionnaire (Derryberry & Rothbart, 1988). Effortful Control measures the ability to focus and shift attention (e.g., "It is hard for me to focus my attention when I am distressed," R), inhibit undesirable approach behaviors (e.g., "When I'm excited about something, it's usually hard for me to resist jumping right into it before I've considered the possible consequences"), and perform an action in spite of strong desires to avoid such action (e.g., "I can make myself work on a difficult task even when I don't feel like trying"). Items are rated on a 7-point Likert scale from 1 (extremely untrue of you) to 7 (extremely true of you). Total ATQ-S-EC scores range from 1 to 7, with higher scores indicating greater effortful control. Correlations between effortful control scores on the ATQ short and long forms are high: $\alpha = .96$ (Rothbart, 2001), and Cronbach's α for effortful control was .77 in the current sample. Evidence for the construct validity of the ATQ-S-EC has been established through factor analyses and support for predicted relations with the Big Five personality scales (Rothbart et al., 2000). Effortful control has been associated with the Big Five personality dimensions, namely conscientiousness, openness to experience, and lower neuroticism (Ahadi & Rothbart, 1994).

Procedure

Participants for this study were solicited on the World Wide Web via news groups focusing on family and parenting issues, relationships, and genealogy, since research has documented the equivalence of Internet-based (computer) and paper-and-pencil versions of questionnaires, irrespective of gender (Lunz & Deville, 1996; Miles & King, 1998). A letter was posted introducing the study, explaining its focus on individuals' experiences in close relationships, and providing the web address for the survey and instructions for logging on to the password-protected web site. Interested individuals located the survey web site, selected an anonymous identification (which facilitated collating individual questionnaires as they were submitted), and used the password provided in the letter to access the questionnaires. Questionnaires were presented in a random order followed by a brief demographic survey. These volunteer participants completed and submitted each questionnaire separately. Approximately 620 hits were recorded for the website, and, of those hits, 255 individuals submitted responses to the questionnaires, yielding a 41% return rate. Of those submitted, 30 were deleted for missing responses on at least one questionnaire, resulting in a final sample of 225 adults. A large

portion of the sample was employed in earlier revisions to the DSI Fusion with Others subscale, detailed in Skowron and Schmitt (2003).

RESULTS

Preliminary Analyses

Multiple regression (MR) and analysis of variance (ANOVA) were conducted to test for effects of age, gender, ethnicity, marital status, level of education, and experience in therapy respectively, on the DSI-R, ECR, and TQ-S-EC scales. A family-wise alpha of .01 was used to control for Type I error. No age or education differences emerged in the MR analyses. Consistent with previous research (e.g., Skowron, 2000; Skowron & Friedlander, 1998), reliable gender differences were observed only on the DSI-R ER scale. Results indicated that men reported less emotional reactivity (actually higher ER scores) ($M = 3.52$, $SD = 1.02$) than did women ($M = 3.03$, $SD = 1.05$): $F(1,221) = 12.13$, $p < .001$. Therefore, gender was included as a covariate in the remaining analyses. Results of other ANOVAs indicated that no differences in the predictor or criterion variables were associated with ethnic group, marital status, or therapy. Table 1 displays correlations between participants' DSI subscales, attachment dimensions, and effortful control scores. Significant relations emerged

TABLE 1
Intercorrelations Among the Differentiation of Self, Attachment, and Effortful Control Scales

<i>Instrument</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1. DSI ER	—						
2. DSI IP	.56**	—					
3. DSI EC	.39**	.24**	—				
4. DSI FO	.66**	.54**	.25**	—			
5. ECR Anxiety	-.60**	-.43**	-.35**	-.50**	—		
6. ECR Avoidance	-.22**	-.15*	-.78**	-.10	.24**	—	
7. ATO-S Effortful Control	.50**	.51**	.29**	.45**	-.42**	-.14*	—

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

Higher scores on the DSI scales indicate greater differentiation, specifically, less emotional reactivity, greater ability to take an "I" position, less emotional cutoff, and less fusion with others. Higher ECR scores represent greater attachment anxiety and attachment avoidance. Higher ATQ-S effortful control scores indicate greater effortful control.

among DSI subscales, ECR Anxiety, and ATQ-S-EC scores. Attachment and differentiation of self-scores were highly related, with the ECR attachment avoidance and DSI EC scales most highly correlated ($r = -.78$), followed by ECR anxiety and DSI ER scales ($r = -.60$).

Differentiation of Self and Adult Attachment

Two hierarchical regression analyses were conducted to test relations between the four DSI subscales and two criterion variables: attachment anxiety and attachment avoidance, separately, after controlling for gender. Due to the orthogonal nature of the two attachment dimensions (e.g., $r = .12$; Brennan & Shaver, 1995), separate regression models were tested for predicting anxiety and avoidance. A family-wise alpha was set at $\alpha = .025$. The regression of ECR anxiety scores onto the four DSI subscales, after controlling for gender, was significant: $\Delta F(4,217) = 36$, $\Delta R^2 = .40$, $p < .0001$, indicating that 40% of the variability in attachment anxiety scores was shared with differentiation of self scores, over and above gender. Greater emotional reactivity, emotional cutoff, and fusion with others, and problems taking an "I" position in relationships, together were associated with greater attachment anxiety. Interpretation of the β weights, and t -values,

TABLE 2

Hierarchical Multiple Regression of Effortful Control onto Gender, Attachment, and Differentiation of Self-Variables

Predictor variable	B	SE	β	R^2	ΔR^2	F	ΔF	Sr
Step 1				.00 ^a			.00	
Gender	.01	.13	.00					.00
Step 2 (ECR)				.18 ^b			23.26**	
Attachment anxiety	-.26	.04	-.41**					-.40
Attachment avoidance	-.03	.04	-.05					-.05
Step 3 (DSI)				.19 ^c			16.27**	
Emotional reactivity	.14	.06	.19*					.15
"I" position	.28	.06	.31**					.29
Emotional cutoff	.13	.08	.16					.11
Fusion with others	.07	.06	.09					.08

* $p < .03$, ** $p < .0001$.

^a R^2 and $F(1,221)$ for Step 1.

^bdf (3,219) for Step 2.

^cdf(7,215) for Step 3.

Table 2 indicate that greater emotional reactivity, emotional cutoff, and fusion with others were each significantly and uniquely related to greater attachment anxiety.

Next, a second hierarchical regression was used to test relations between attachment avoidance and differentiation. Gender was entered into the model in step 1, followed by the four DSI subscales in step 2, which yielded a significant increment in the prediction of attachment avoidance: $\Delta F(4,217) = 89.04$, $\Delta R^2 = .62$, $p < .0001$. Follow-up *t*-tests on the individual regression coefficients revealed that EC was a significant unique predictor of attachment avoidance, in that greater emotional cutoff predicted greater attachment avoidance. Gender served a suppressor function in the equation, based on its null bivariate correlations with attachment avoidance ($r = .05$) and EC ($r = .03$), combined with its significant standardized regression coefficient in the regression equation along with the four DSI subscales. Thus, in spite of its null correlation with ECR Avoidance scores, gender increased the variance accounted for in ECR Avoidance scores by suppressing variance in the one or more of the DSI scales that was irrelevant to ECR Avoidance scores. Follow-up analyses conducted to identify targets of the suppressor function were conducted, in which each of DSI subscales was omitted, one at a time, and changes in regression coefficients for gender examined (Tabachnick & Fidell, 1989). Only the deletion of DSI EC yielded a substantial reduction in the β weight for gender, indicating that gender functioned to suppress variance in DSI EC scores irrelevant to ECR Avoidance scores, and thus enhanced the strength of the relationship between DSI EC and ECR Avoidance scores.

Adult Attachment, Differentiation of Self, and Self-Regulation

To test the hypotheses that (a) relational variables of attachment and differentiation predicted capacity for self-regulation, and (b) that differentiation of self-scores would provide incremental prediction of self-regulation scores over and above adult attachment dimensions, a three-step hierarchical regression analysis was conducted with seven predictors: gender (step 1); anxiety and avoidance (step 2); ER, IP, EC, and FO (step 3); and a single criterion variable, effortful control scores as shown in Table 2. A significant increment was observed in step 2 with entry of ECR anxiety and avoidance scores: $\Delta F(2,219) = 23.26$, $\Delta R^2 = .18$, $p < .0001$. Lower attachment anxiety and avoidance, taken together, predicted greater effortful control scores, after controlling for the effects of gender. Attachment anxiety emerged as a significant

unique predictor of effortful control scores: $t(219) = -6.42$, $sr = -.40$. The step 3 entry of the four self-differentiation scores was significant as well: $\Delta F(4,215) = 16.27$, $\Delta R^2 = .19$, $p < .0001$, indicating that greater differentiation of self predicted greater effortful control. Nineteen percent (19%) of the variability in effortful control scores could be understood as a function of differentiation of self scores, over and above gender and attachment dimensions. ER and IP problems each uniquely predicted lower effortful control scores: $t(215) = 2.19$, $sr = .15$, and $t(215) = 4.49$, $sr = .29$, respectively. In other words, less ER and greater ability to take IP in relationships corresponded with greater effortful control.

DISCUSSION

This study tested convergence between Bowen's (1978) concept of differentiation of self and Bowlby's (1982) notion of attachment security. Results confirmed significant relations between dimensions of differentiation and adult attachment, with the four aspects of self-differentiation predicting 40% of the variability in attachment anxiety and 62% of the variance in attachment avoidance. Specifically, attachment anxiety was most closely associated with ER while attachment avoidance showed a strong zero-order correlation with EC. These findings suggest that while the constructs of attachment security and self-differentiation tap distinct dimensions of relational experience, they also share at least two similar, underlying dimensions, namely the dialectic needs for intimacy and autonomy in human experience. These findings are consistent with other research (e.g., Campbell, Adams, & Dobson, 1984; Grotevant & Cooper, 1985; Rice, Fitzgerald, Whaley, & Gibbs, 1995) concluding that the maintenance of positive connections with caregivers and partners goes hand in hand with the achievement of mature autonomy.

Just as recent research on adult attachment has confirmed Ainsworth's observations that there are two underlying dimensions of anxiety and avoidance on which security of attachment experiences vary (e.g., Brennan et al., 1998; Lopez & Brennan, 2000), emerging research on self-differentiation (e.g., Kosek, 1998; Skowron, 2000) points to the central role of both ER and EC as significant predictors of relational functioning. Thus attachment security, characterized by low anxiety regarding the availability of attachment figures and low avoidance of others, enables individuals to manage stress without anxious overreliance on or avoidance of one's attachment figures (Dozier & Kobak, 1992; Fuendling, 1998). Likewise, Bowen (1978)

discussed the existence of two competing life forces that propel individuals toward autonomy and togetherness, operating in dialectical tension. Two primary dimensions of differentiation of self—low ER and EC—are thought to enable individuals to self-soothe when anxious while staying engaged in important relationships.

While these data support the centrality of autonomy and togetherness forces underlying attachment security and differentiation of self, frequently these constructs are oversimplified in the literature. For example, differentiation of self is often equated with separation from others and achievement of an independent identity, whereas attachment security is often viewed as solely synonymous with close connection with caregivers or partners. In fact, differentiation of self involves the capacity to achieve an autonomous sense of self while remaining in intimate, emotionally connected relationships. Similarly, secure attachment is characterized by an ability to access support from attachment figures when under stress, enabling the development of self-reliant, autonomous behavior.

In addition, we found evidence that gender functioned as a suppressor variable, enhancing the relationship between ER and avoidance. In a case of classical suppression (Cohen & Cohen, 1975), bivariate correlations between gender and EC and gender and avoidance were essentially zero. Yet in the presence of EC, gender became a significant predictor of avoidance. Thus, removal of variance associated with gender differences served to strengthen the unique relationship between avoidance and EC.

Second, we examined the utility of Bowen (1978) family systems theory and Bowlby's (1982) attachment theory for predicting self-regulation or effortful control in adulthood. Results confirmed that adults who reported less attachment anxiety and avoidance and were more differentiated—that is, less emotionally reactive, cutoff from or fused with others, and better able to take IP in relationships—were most capable of achieving effortful attentional and behavioral control. These findings are consistent with other research (e.g., Kemp & Neimeyer, 1999; Kenny & Donaldson, 1992; Lopez, Mitchell, & Gormley, 2002; Mikulincer, Shaver, & Pereg, 2003; Paley, Cox, Burchinal, & Payne, 1999) documenting relations between adult attachment insecurity and problems with self-management or effortful control.

Moreover, the results provide the first established link between differentiation of self and self-regulatory control. Specifically, differentiation of self accounted for 19% of the variability in effortful control, over and above relations with attachment anxiety and avoidance.

Closer inspection showed that greater ability to take an “I” position in one’s relationships along with less emotional reactivity each uniquely predicted greater effortful control. Further, reversing entry of the attachment and differentiation variables into the hierarchical regression showed that attachment was not associated with effortful control in significant unique ways. Thus while the collective dimensions of self-differentiation and attachment security were both associated with self-regulatory control, the only unique relations observed were between intrapsychic dimensions of self-differentiation and effective self-regulation in adulthood. That is, greater ability to take an IP in one’s relationships and lower ER corresponded with greater effortful control—the ability to shift and focus attention, thoughtfully activate adaptive behavior, and inhibit maladaptive behavior.

In sum, these results lend support to Bowen’s proposition (1978; Schnarch, 1997) and preliminary research (e.g., Skowron et al., 2003) suggesting that one’s ability to engage in conscious effortful control of behavior involves greater differentiation between thinking and feeling systems; in other words, the capacity to self-soothe when anxious, to think clearly in the midst of strong emotion, and to maintain a clear sense of self in one’s intimate relationships with others.

In contrast, relations between EC or avoidance and effortful control were moderate by comparison, and neither was uniquely associated with effortful control. Bowen (1978; Kerr & Bowen, 1988) has argued and research on adult attachment (e.g., Dozier & Kobak, 1992; Main et al., 1985) has shown that cutoff and avoidance, respectively, represent defensive reactions to relational anxiety in which that anxiety is pushed out of conscious awareness through physical and/or psychological distancing in relationships. Weak relations between attachment avoidance, EC, and effortful control may exist if attachment avoidance and EC represent (a) emotionally unregulated deficits in adaptive relational approach behaviors for some individuals, or (b) defensive use of effortful control through deactivation of attachments for others. In other words, it may be that for some, the phenomena on relational avoidance/cutoff represents an emotionally regulated way in which effortful (i.e., attentional and behavioral) control is employed in the service of maladaptive defenses, in order to shift one’s conscious attention away from the experience of relationship distress, and/or toward denying the importance of relationships. For others, avoidance or cutoff may be associated with an emotionally unregulated form distancing in relationships to manage distress.

Limitations

Several limitations of the current research should be noted. These include the low ethnic diversity of the sample and the use of an internet-based survey to target a broad, national/international sample of participants. Likewise, while this study employed psychometrically sound, self-report measures of attachment, differentiation, and effortful control, follow-up investigations are needed that incorporate neurobiological indices of self-regulation (i.e., vagal tone, skin conductance, and/or cortisol levels) in order to cross-validate these findings. New observational measures of differentiation also are needed to help uncover important dimensions of family communication patterns that signify successful balance of individuality and togetherness, and conversely, to understand maladaptive transactions that underlie emotional reactivity and emotional cutoff in relationships. Likewise, given that parents' capacities for effortful control have recently been linked to positive child outcomes (Eisenberg et al., 2003; Salmon & Pereira, 2002), future research examining Bowen's ideas about the multigenerational transmission process could test whether self-differentiation among parents, measured using observational and self-reported methods, predicted greater effortful control and behavioral competence among their children.

Clinical Practice

Given the correspondence between differentiation of self, attachment security, and effortful control, we offer a couple of suggestions for clinical practice based on these findings. First, with respect to assessment of client presenting concerns, these results suggest that clients who present in therapy as emotionally reactive, anxiously preoccupied with relationships, and/or struggling to create or maintain a clear sense of self in their relationships with others (i.e., insecurely attached or undifferentiated), may also have difficulty regulating their own behavior.

Likewise, assessment of clients presenting with difficulties engaging in effortful control—that is, problems shifting and focusing attention, inhibiting maladaptive behaviors (i.e., perfectionism or procrastination, excessive use of alcohol or drugs), or initiating adaptive behaviors, (e.g., completing school or work-related tasks, moderating substance use)—is likely to uncover important relational impairments as well.

According to Bowen (1978), self-regulation involves the ability to distinguish fact from feeling and choose to “be thoughtful about the

facts that stimulate feelings and...think through actions, despite powerful feelings" (Meyer, 1998, p. 90). Thus, "a successful effort to improve one's level of differentiation and reduce anxiety strongly depends on a person's developing more awareness of and control over his emotional reactivity" (Kerr & Bowen, 1988, p. 127).

Since attachment and differentiation are both multidimensional constructs, a comparative analysis of client scores may help to determine which aspects of attachment and differentiation (i.e., ER, problems taking an IP, difficulty with autonomy or intimacy) are associated with the client's unique difficulties with effortful control. For example, procrastination may signify difficulty expressing one's own ideas or discomfort with autonomy, while problems with substance abuse might be more closely linked with ER or difficulty self-soothing under stress. Some adult attachment researchers (e.g., Johnson & Whiffen, 1999; Mallinckrodt, 2000) suggest therapists should tailor interventions to clients' attachment styles; that is, avoidant clients may need help facilitating greater affect awareness and expression, while anxious clients may require help managing or toning down affect (regulating emotion) and engaging cognitive processing of emotion. Likewise, Bowen (1978) suggested that strengthening one's ability to think about feelings is essential for improving level of self-differentiation. Future research is needed to determine whether relational/family therapies that focus on strengthening self-differentiation or attachment security are capable of enhancing effortful self-control.

Persons suffering from impairments in effortful control may be offered individual or conjoint family therapy (e.g., Bowen, 1978; Johnson & Whiffen, 1999; Meyer, 1998; Titelman, 1998) that focuses on strengthening attachment security and/or self-differentiation. For example, family systems therapy is designed to decrease reactivity and facilitate development of insight or awareness into the life forces operating in one's family system (McGoldrick & Carter, 2001). Bowen therapists seek to teach clients about the principles of self-differentiation, encourage clients to maintain regular contact with family members by establishing person-to-person relationships, and help clients identify and extricate themselves from the primary family triangles in which they participate (Kerr & Bowen, 1988; Meyer, 1998; Titelman, 1998). In turn, a client in Bowen therapy gradually comes to accept responsibility for self as he or she becomes less emotionally reactive and better able to take "I" positions in relationships with others. It stands to reason that in this process, clients become capable of greater conscious effortful control as they begin to formulate

personal life principles that have been neglected in response to high anxiety or in exchange for fitting in with the crowd or approval from important others (Meyers, 1998; Skowron, Wester, & Azen, 2004). As a client learns to hang on to self in his or her intimate relationships and to think clearly when feeling anxious, he or she becomes better able to self-soothe while remaining in close relationships, rather than demanding one's partner be responsible for soothing these anxieties (Schnarch, 1997). Through the process of accepting greater responsibility for self and formulating one's personal life principles, self-differentiation may be strengthened, along with one's capacity for greater effortful control.

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