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Comparing Measures of Attachment : “To Whom one Turns in Times of Stress,” Parental Warmth, and Partner Satisfaction

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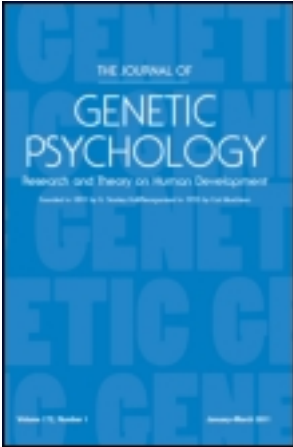
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Comparing Measures of Attachment: “To Whom one Turns in Times of Stress,” Parental Warmth, and Partner Satisfaction

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ABSTRACT. The Attachment and Clinical Issues Questionnaire (ACIQ; M. A. Lindberg & S. W. Thomas, 2011), was developed over an 18-year period containing 29 scales. The purpose of the present study was to test (a) the validity of the attachment scales in terms of how they predict to whom one turns in times of stress and for affective sharing, and (b) how the attachment scales compared with the Experiences in Close Relationship Questionnaire (ECR) in terms of concurrent, convergent, and discriminant evidence. The relevant secure scales of the ACIQ predicted to whom one turned in Study 1, and Study 2 demonstrated good convergent evidence with the ECR, but superior concurrent evidence in predicting partner satisfaction, and superior discriminant evidence in differentially correlating with mother and father warmth. Thus, the ACIQ passed essential validity and psychometric tests and was a more robust measure than the ECR with these defining characteristics of attachment.

Keywords: addictions, attachment measure, ECR, marital satisfaction, parental warmth and sensitivity

Although attachment theory has been a central focus in developmental research for almost five decades (Cassidy & Shaver, 2009), there has been a rather limited development of new assessment techniques that have kept up with the observations and potential applications in developmental psychology. This deficit in measurement is especially apparent with measures that can extend from adolescents through old age, tapping shifts in attachment processes that might be occurring during different sensitive periods expanding over a majority of development. The two dominant measures of attachment for adolescents and adults to date have been the Experiences in Close Relationships Questionnaire (ECR; Brennan, Clark, &

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Shaver, 1998), and the Adult Attachment Interview (AAI; Main & Goldwyn, 1984; Main, Kaplan, & Cassidy, 1988). The ECR is a survey measure while the AAI is based on a clinical interview.

The ECR, a focus for comparisons in this article, was developed by Brennan et al. (1998) with a factor analytic strategy. In contrast to viewing attachments as consisting of attachment styles, they suggested that the secure, avoidant, preoccupied, and anxious or resistance attachment styles could be broken down into two general personality constructs, avoidance and anxiety. The ECR has been found to predict several attachment and clinical phenomena with moderate correlation coefficients (Mikulincer & Shaver, 2003). In light of this apparent success, Mikulincer and Shaver (2007) stated that new measures would have to pass through a gauntlet if they are to be considered. They suggested that this gauntlet had two major aspects. The first part of this gauntlet was that many of the landmark studies would need to be repeated in improved forms when new and better attachment measures were developed. The second aspect of this gauntlet suggested that new measures would have to demonstrate superior concurrent, convergent, and discriminant evidence as compared with the ECR.

Lindberg and Thomas (2011), in an attempt to create a developmental instrument that could be used clinically and for research, recently proposed new measures of attachments and clinical issues, the Attachment and Clinical Issues Questionnaire (ACIQ). Coming from a dynamic systems approach to developmental theory, they reasoned that attachments could vary substantially between mothers, fathers, and partners and that the notion of a single internal working model of attachments in adults might be limited. Further, they reasoned that other emotions and contexts (such as peers, family, and religious affiliations) could also be important in providing a better picture of security versus psychopathology in complex relational developmental dynamic systems.

The 29 scales of the ACIQ were based on naturalistic observations of patients in hospitals, treatment centers, and 12-step groups; attachment theory; and the clinical literature dealing with the addictions and depression. The attachment scales were taken from classic attachment theory, but in line with more recent formulations, included relations to mother, father, and partner (see Lindberg & Thomas, 2011, for a discussion of these sources and background). The factor analyses on the 29 scales of the ACIQ found that eight factors loaded on different attachment figures and sets of clinical issues rather than ubiquitous attachment styles, as suggested by older attachment measures. Examples of the 29 scales of the ACIQ can be seen in Appendix A.

The results of Lindberg and Thomas (2011) were also in line with the developmental hypothesis that partner and father attachments are different than attachments to mother, and that family and peer relations as well as clinical issues need to be considered separately. In addition to the previously mentioned attachment scales, and in line with developmental systems theories, scales were developed to measure relations with peers and religious organizations. Further, two

family scales and two sex scales were also developed. It also contains the clinical scales of shame, mistrust, jealousy, withdrawal, control, denial of feelings, anxiety, anger, perfectionism, abusiveness, and rumination that have been found to be important in clinical settings and discriminating between alcoholics versus controls (Lindberg & Lindberg, 2007). The attachment scales have also been shown to be excellent predictors of the effects of divorce (Lindberg, McMillion, & Thomas, 1999). In regressions predicting problems for the adolescents from divorced families such as shame, anxiety, avoidant partner, and parental divorce status, the variable "divorce" was dropped in the equations with the attachment scales carrying the weight in predicting the adolescent problems. The ACIQ also has fake good and fake bad scales, and is fairly immune from social desirability, as measured by the Marlow Crowne scale (Lindberg & Thomas, 2003). Last, it contains method malingering scales, wherein it is possible to determine if the test is being taken via a random response set by just filling in answers without reading or understanding the questions (Lindberg & Thomas, 2003). Lindberg & Thomas (2011) concluded that this approach to attachment and relational functioning could more properly reflect the continuity and change suggested by the originators of attachment theory (Ainsworth, 1964; Bowlby, 1973; Harlow, 1953).

The ACIQ was also designed to overcome several methodological and theoretical problems that have been found with the ECR. A first problem with the ECR is that because the ECR has assumed that attachment operates as a cross situational consistent personality-like construct, it has neglected the possibility that attachments to mothers and fathers can be different (Lamb 1977; 2005; Parke, Power, & Gottman, 1979). Second, the factor analytic approach behind the creation of the ECR has left open the possibility that because of its use of so many items for each of its scales, the scales could show good coefficient alphas because it has been shown that as scale length increases, coefficient alphas also increase and thus tap qualitatively distinct psychological processes (Schmitt, 1966). Third, several researchers have pointed out that the ECR leaves out sexual arousal and intimacy dimensions of partner relations (Hazan & Zeifman, 1994). Fourth, several scholars have noted that attachment relationships to partners are different than to parents and that adolescents and adults can have several different attachment patterns depending on the attachment figure in question (Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996; Bowlby, 1973; Bretherton, 1990; Cozzarelli, Hoekstra, & Bylsma, 2000; Kobak, 1994; Lewis, 1994; Main, Kaplan, & Cassidy, 1988; Overall, Fletcher, & Friesen, 2003; Pierce, & Lydon, 2001). A final problem with the ECR is that it does not contain malingering scales, and there are few, if any, studies showing how much it is affected by social desirability.

The ACIQ seeks to address the deficits left by the ECR. However, it is important to be sure that the ACIQ attachment scales have more power than the older attachment measures in predicting standard attachment phenomena. Two introductory studies were selected for presentation here to provide initial tests of the gold standard attachment criterion, to whom one turns in times of stress, and to

test convergent, concurrent, and discriminate evidence for the ACIQ's attachment scales.

STUDY 1

Study 1. Does the ACIQ Accurately Predict to Whom one Turns in Times of Stress and for Affective Sharing?

Study 1 was designed to test whether the ACIQ predicts the litmus test of attachment theory thereby establishing significant concurrent evidence; to whom one turns in times of stress and for affective sharing (Ainsworth, 1964, 1972, 1989; Ainsworth, Bleher, Waters, & Wall, 1978; Ainsworth & Wittig, 1969; Harlow, 1953). It can be recalled that Harlow (1953) presented a mechanical teddy bear making noise in an attempt to frighten the motherless infant monkey. He then used the measure of to whom the infant turned in this time of stress, the wire or cloth surrogate mother, as his chief measure of attachment security. It can be recalled by even introductory students that the infant turned to the cloth surrogate mother. In similar fashion, Ainsworth et al. (1978) used separation of mother and child to provide stress, and then examined how infants functioned in the reunion episodes.

In line with these pioneers, we attempted to test a similar turn-to operational measure based on the work of Monck (1991). Thus, in Study 1 participants filled out the ACIQ and Monck's survey by selecting the first person they would have turned to for assistance in times of stress and the sharing of positive events in hypothetical situations when growing up during the school years. The events from Monck (1991) were financial debt, trouble with the police, unplanned pregnancy, sexual harassment, winning a trip, and to have fun. Choices in this study included mother, father, partner, friend, or no one. It was predicted that the secure mother attachment scale would predict the number of times an individual would turn to mother first, the secure father scale would best predict the number of times an individual would turn to father first, and the secure partner scale would best predict the number of times an individual would turn to a partner first on these questions about affective sharing.

Method

Participants

Participants included 403 high school and college students. Participants for the high school sample were taken from Grades 9–12. The 233 high school students, 105 young men and 128 young women, were from a rural area of Appalachia and were of primarily lower socioeconomic backgrounds, with 40% of the sample reporting a yearly family income under \$21,000. Forty participants were age 14 years, 49 were 15 years old, 66 were 16 years old, and 78 were 17 years and older. The 184 college students, 51 men and 119 women, were enrolled in

introductory psychology and were also from Appalachia. They were aged 17–21 years and primarily from middle-class socioeconomic backgrounds, with 20% of the sample reporting a yearly family income below \$21,000. Ninety-five percent of the sample was Caucasian.

The Attachment and Clinical Issues Questionnaire (ACIQ).

The ACIQ consists of 29 scales (see Appendix A for the number of questions per scale and representative questions for each scale). The scales varied in length from 5 to 14 items. It takes the typical participant anywhere from a half hour to an hour to complete.

Procedure

The participants first filled out the ACIQ and then answered the questions posed by Monck (1991) in a single session that took about an hour. The instructions for participants taking the ACIQ give the participants the following definitions of mother, father, and partner:

The word “partner” refers to your most important spouse, fiancé, steady date or a significant romantic interest in your life. If you are not currently involved in such a relationship, think about your most significant past partner and answer the questions with that relationship in mind. If you never had a steady or meaningful relationship in your life, leave the questions on partners blank. Questions about your family, mother, and father refer to the family you grew up in. When answering questions about members of your family, think about who or what was true, typical, or most important while you were growing up (during the school age years). If you didn’t have a mother or father figure, leave those questions blank.

In the six hypothetical dilemmas posed by Monck (1991), participants were asked to select the person to whom they would turn for assistance in the following hypothetical situations when growing up during the school years in a forced choice format: financial debt, trouble with the police, unplanned pregnancy, sexual harassment, winning a trip, and to have fun. The alternatives for the forced choice format included mother, father, partner, friend, or no one. The number of selections for mother, father, partner, friend, and no one were totaled for each participant to be predicted in five different regressions by the attachment scales of the ACIQ.

Results and Discussion

The analyses of the “turn to” questions consisted of several steps. First, the number of selections for mother, father, partner, friend, and no one was totaled for each participant across the six “turn to” questions, creating a range from 0 to 6 reflecting the number of “turn to” questions. We used this sum of positive and negative times selected for each figure to keep this construct as it has been used

in the literature (when separated into positive and negative events, the measures revealed the same results). Thus, for simplicity and fidelity with the Monck measure, we used the summed "turn to" calculations in the analyses. Numbers of times each figure was selected (mother, partner) were then added together and divided by six to yield a mean "turn to" response. Scores for each choice were used as dependent variables for the mother, father, partner, friend, and no one regressions and scores on the 29 scales of the ACIQ were used as independent variables in stepwise multiple regressions. Gender was entered as 1 for young men or men and 2 for young women or women. Significance levels to serve as enter and exit parameters in the equations were set at $p < .05$. Table 1 presents the results for the five regressions.

As can be seen in Table 1 (A), the ACIQ scale absorbing the most variance for the "turn to mother" measure was the secure mother scale. This was followed by low scores on the secure father scale, and in line with research by Benson, Harris, and Rogers (1992), tended to be female. Other scales entering the regression were the shame, family suppression of feelings, codependent or enmeshed mother, peer relations, and abuser. Overall, this model accounted for 33% of the variance. It should be noted that the peer relations and abuser scales, when considered individually, did not significantly correlate with the turn to mother measure.

Looking at the results for number of times they reported turning to father in Table 1 (B), those participants who scored higher on turn to father scored high on the secure father scale (18% of the variance) and low on secure mother (5%). Young men and men also tended to score higher than young women and women on turn to father (3%). This model accounted for 26% of the variance and with the results from the first regression, converges with the results of Youniss and Ketterlinus (1987). They found that daughters believed they were better known by their mothers, whereas sons believed they were better known by their fathers.

Again as predicted, turn to partner was best predicted by scoring high on the secure partner scale (9% of the variance) and low on the secure father scale (4%; see Table 1 [C]). These individuals also tended to be women (3%), scored higher on the codependent or enmeshed partner scale (6%), and scored lower on the codependent or enmeshed mother scale (6%). This model accounted for 25% of the variance.

Individuals scoring high on the turn to friend measure tended to score low on the secure partner scale, score high on peer relations, and low on the secure mother scale (see Table 1 [E]). These individuals also tended to score high on avoid father, perfectionism, and anger. It should be noted that the anger scale did not correlate significantly with the turn to friend dependent variable. This model accounted for 17% of the variance.

The best predictors for those most likely to turn to no one for assistance tended to score low on the secure partner scale and tended to be young men or men (see Table 1 [D]). In addition, they tended to score low on the codependent or enmeshed partner scale and high on the withdrawal scale. They also scored low on

TABLE 1. Regression Analyses for the “Turn To” Variables

Scale	Partial model				
	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	<i>R</i> ²
A. Turn to mother (<i>n</i> = 344)					
SECMOT	.11	.02	1.43	.17	.17
SECFAT	-.06	.01	.75	.07	.24
GENDER	.08	.02	.45	.03	.27
SHAME	-.10	.03	.36	.01	.28
PEER	-.05	.02	.27	.02	.30
ABUSER	.05	.02	.18	.01	.31
CODMOT	.06	.02	.18	.01	.32
FAMSUP	-.04	.02	.14	.01	.33
B. Turn to father (<i>n</i> = 331)					
SECFAT	.10	.01	2.17	.18	.18
SECMOT	-.06	.01	.58	.05	.23
GENDER	-.07	.02	.35	.03	.26
C. Turn to partner (<i>n</i> = 354)					
SECPART	.05	.01	.31	.09	.09
SECFAT	-.02	.01	.10	.04	.13
GENDER	.06	.01	.31	.03	.16
CODPART	.08	.02	.50	.03	.19
CODMOT	-.08	.02	.47	.06	.25
D. Turn to friend (<i>n</i> = 356)					
SECPART	-.06	.01	.50	.04	.04
PEER	.06	.01	.37	.03	.07
SECMOT	-.05	.01	.35	.04	.11
AVFAT	.04	.01	.26	.02	.13
PERF	.07	.02	.24	.02	.15
ANGER	-.05	.02	.15	.02	.17
E. Turn to no one (<i>n</i> = 332)					
SECPART	-.03	.01	.11	.07	.07
GENDER	-.04	.01	.11	.03	.10
AVPART	.05	.01	.13	.02	.12
ANGER	.04	.01	.07	.02	.14
CODPART	-.03	.01	.06	.02	.16
CODMOT	.03	.01	.06	.02	.18

Note. Variables measured in terms of who they selected when confronted by hypothetical stressors growing up such as financial debt, trouble with the police, unplanned pregnancy, sexual harassment, or for affectively sharing a positive experience such as winning a trip, and to just have fun. See the appendix for abbreviations. Negative signs refer to negative relationships between the variables (1 = male, 2 = female).

the avoidant partner scale. The anger scale did not significantly correlate directly with this dependent variable. This model accounted for 18% of the variance.

Several caveats should be mentioned with respect to the previous results. First, it should be emphasized that the above dependent variables were not statistically independent. The wording of questions by Monck (1991) created scales that correlated negatively with each other. For example, if one were secure with both parents, but if one was more secure to mother than father, then one might list mother and never father in this format. This would translate into having the secure mother scale predict turn to mother, but that secure father would correlate negatively due to this measurement problem. These measurement issues also might have figured into lowering the amount of variance accounted for by each model. A second related problem with this measure was that there was no way to know whether scoring low on a specific type of attachment figure necessarily suggested attachment avoidance. Third, because so many regressions were used, the possibility of chance findings is increased. Thus, similar studies should probably be done using Likert-type scales and different observational measures to further test these and related issues. However, what was most relevant in this study was that the appropriate secure scores predicted to whom one would turn. This is what attachment theory said they should predict: secure mother scale predicting turn to mother, the secure father scale predicting turn to father, and the secure Partner scale predicting turn to partner.

To summarize, the secure scales of the ACIQ did what attachment theory expected them to do, predict the secure base behavior of to whom they would turn when stressed and for affective sharing. Each of the secure scales to mother, father, and partner were the best predictors in the regression analyses for turning to the relevant attachment figure in question.

STUDY 2

Study 2. Tests of Convergent, Concurrent, and Divergent Evidence

If the ACIQ is to be regarded as an addition to the study of attachment phenomena from adolescence to old age, it must demonstrate not only convergent evidence by correlating significantly with established measures of attachment such as the ECR, but also superior concurrent and discriminate evidence.

Relationship satisfaction has been extensively studied with self-report measures, and has been considered as one of the most important consequences of adult attachment. Mikulincer and Shaver (2007) reviewed 100 studies and found that all variations in attachment security predicted relationship satisfaction. They concluded that attachment issues are ubiquitous in couple relationships and represent fundamental concurrent evidence for attachment theory. Thus, new measures of attachment not only should correlate with older measures showing convergent evidence, they must show superior concurrent evidence in predictions of partner satisfaction, which was tested in Study 2.

An even more fundamental postulate of attachment theory is that one of the best predictors of attachment security is sensitivity, responsiveness, and warmth (Bowby, 1969). Warmth and sensitivity have historically been shown to be among the best predictors of attachment security (Adam, Gunnar, & Tanaka, 2004; Ainsworth et al., 1978; Atkinson et al., 2000; Cohen, Cowan, Cowan, & Pearson, 1992; Crowell & Feldman, 1989; De Wolff & van Ijzendoorn, 1977; Goldsmith & Alansky, 1987; van den Boom, 1994; Ward & Carlson, 1995). In examining the correlational, experimental, and cross-cultural studies, van Ijzendoorn and Bakermans-Kranenburg (2004) found that the associations between sensitivity and responsiveness and attachment security are consistent. Although there is debate whether parental warmth and attachment security refer to the same or different underlying constructs (MacDonald, 1999), there is not much debate that they should be strongly related.

This relationship between attachment and parental warmth is reasoned here to be an important intersection between attachment research on the one hand, and parenting research on the other. Historically, one of the most powerful accounts of parental warmth and sensitivity has come from the theories of parenting offered by Baumrind (1967, 1971). In her classic work, she gathered information on child-rearing practices by observing parents' interactions with their preschool children at home and in laboratory settings. She theorized that parenting could be described as varying along two dimensions: parental responsiveness and warmth versus parental strictness and guidance. The responsiveness dimension was said to refer to the parents' tendencies to be accepting and responsive to their children. Responsive parents were found to be more often engaging in open discussions and verbal give and take. From this, it would be expected that measures of parental responsiveness deriving from Baumrind's conceptualizations (Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Maccoby & Martin, 1983) would correlate strongly with ACIQ measures of security of attachment, and that these would be superior to those offered by the ECR. The additional proviso to the parenting and attachment conceptualizations offered here would be that there would also be discriminative evidence for mother and father warmth and attachment when considered separately.

In summary, Study 2 was designed to test whether the ACIQ would demonstrate superior correlations with scales of partner satisfaction on the one hand, and mother warmth and father warmth and responsiveness on the other, as stipulated by classic attachment theory outlined previously. The following were the major hypotheses of this study.

Hypothesis 1 (H_1): We predicted that the ACIQ attachment scales would correlate significantly with the ECR scales of avoidance and anxiety, providing convergent evidence.

Hypothesis 2 (H_2): When entered into forward selection regression equations, we predicted that if the ECR scales were entered first, the relevant security

scale of the ACIQ would add to the variance in predictions of mother warmth, father warmth, and partner satisfaction. However, if the relevant security scale of the ACIQ was entered first, the ECR scales would not add much to the equations.

Hypothesis 3 (H_3): We predicted that the ACIQ would demonstrate good discriminate evidence as compared with the ECR scales of avoidance and anxiety, in that the secure mother scale of the ACIQ would be the best predictor of mother warmth, the secure father scale of the ACIQ would be the best predictor of father warmth, and that partner satisfaction would be best predicted by the secure partner scale.

Method

Participants

College students taking introductory psychology participated and were from a university located in Appalachia. There were 100 participants aged 17–21 years, and 10 were older than traditional college students, ranging in age from 22–49 years. There were 41 men and 69 women. This sample was demographically similar to Study 1.

Procedure

Testing was done on two different days, seven days apart. On one day, participants completed the ACIQ. On the other day, they took the ECR along with the measures of parenting and partner satisfaction. The orders were counterbalanced. The ECR was administered in two forms, one giving the standard instructions, and the other instructing the participants to answer in terms of their partner. The ECR has 36 items, with 18 items tapping an avoidance dimension and 18 tapping an anxiety dimension. For a discussion of how these scales correlate with other dimensions and how the scales were constructed, see Brennan et al. (1998), and for a review of the correlates of these measures, see Mikulincer and Shaver (2003).

The parenting measures were those developed by Lamborn et al. (1991), and can be seen in their appendix. This instrument asks participants to report on how they were parented while growing up. Because it was theoretically interesting to explore each parent with this measure, we turned scales for family warmth and responsiveness into separate ones for mother and then father. Thus, the same questions were asked as in Lamborn et al.'s 1991 study, but in this case, they were asked for each parent separately. This generated scales for mother warmth and father warmth.

Results and Discussion

Convergent Evidence

Hypothesis 1 predicted that the ECR and the relevant attachment scales of the ACIQ would correlate at acceptable levels. In line with other studies using the ECR and the advice of one of the authors of this scale (P. R. Shaver, personal communication, December 9, 2003), the derived security scales were not used and only the more psychometrically appropriate avoidance and anxiety scales were used in the correlations. These correlations can be seen in Table 2.

It should be emphasized that the scales of the ACIQ and the ECR correlated significantly with one another in expected directions. For example, the avoidant partner scale of the ECR correlated significantly with the ACIQ avoidant partner scale, $r(103) = .36, p < .001$, and the anxiety scale of the ECR correlated significantly with the ACIQ anxiety scale, $r(109) = .54, p < .001$. Of the 116 correlations tested, 66 were significant, a number 10 times greater than expected by chance (6). This is important because it shows that several ACIQ scales shown to be independent of one another all correlated with the ECR scales. This suggests that the ECR scales might represent several different constructs rather than a single clean, crisp construct. This could explain why it correlates at low levels with several different phenomena but not strongly with the attachment variables used in these and other studies.

This possibility that the ECR is a multidimensional construct was noted in Mikulincer and Shaver's (2003) critique that generic self-report attachment measures were not designed in a component-by-component fashion, and the items range from ones concerned with relationships in general to ones concerned with a particular partner. In more carefully examining the items of the ECR it can be seen this argument can be easily expanded. For example, in the ECR there are items that deal with relationship partners, one's own fears of general abandonment, fears of being close to peers, general anxiety, and one's perceived sense of being one who scares others off. Thus, as suggested previously, these items may be tapping several different constructs that are related but distinct.

It is now important to examine Table 2 again, but from a more global level because it might be revealing something different about the vast bodies of literature regarding the ECR. For example, it can be seen that the ECR overall scales correlated with 24 ACIQ scales that have been found to tap different constructs in the present studies and in others forthcoming. Furthermore, although the avoidance and anxiety scales of the ECR correlated with the attachment scales, they correlated as well and even better with the clinical scales. Last, although the ECR avoidance scale correlated with the present avoidance scales, it was demonstrated here that avoidance depends on the attachment figure in question.

Although the previous reasoning about the ECR explains why it would be possible to predict a wide range of phenomena with the ECR, it does not answer the

TABLE 2. Correlations Between the ECR Scales of Avoidance Overall (Avoido), Anxiety Overall (Anxietyo), ECR Avoidance Partner (Avoidp), and Anxiety Partner (Anxietyp) With the 29 Scales of the ACIQ

Scale	Avoido	Anxietyo	Avoidp	Anxietyp
Amb father	.08	.21*	.08	.11
Amb mother	.19*	.17	.13	.13
Amb partner	.15	.23**	.12	.28**
Avoid father	.10	.20	.06	.14
Avoid mother	.26**	.24**	.19*	.24**
Avoid partner	.35***	.15	.36***	.24**
Cod/Preoc father	-.13	.02	-.15	.04
Cod/Preoc mother	.01	.17	.03	.24**
Cod/Preoc part	-.34***	.17	-.40***	.23*
Secure father	-.25**	-.14	-.21*	-.03
Secure mother	-.17	-.08	-.14	-.05
Secure partner	-.36***	-.19	-.37***	-.18
Abuser	.20*	.04	.17	.1
Anger	.24**	.19*	.23*	.21*
Anxiety	.31***	.54***	.22*	.45***
Control	.25**	.30***	.16	.32**
Denial	.49***	.38***	.37***	.45***
Famrigid	-.17	-.20*	-.19*	-.13
Fsupp of feelings	.42***	.16	.32***	.16
Jealousy	-.30**	.27**	-.22**	.33***
Rumination	.35***	.46***	.23**	.43***
Peer	-.43***	-.28**	-.31***	-.22*
Perfectionism	.04	.05	.01	.12
Religion	-.23*	.03	-.17	.10
Sex arousal	.03	-.15	.04	-.09
Shame	.28**	.38***	.20*	.32***
Sex intimacy	-.34***	-.15	-.31**	-.11
Mistrust	.58***	.25**	.51***	.26**
Withdrawal	.53***	.23**	.48***	.30***

Note. The numbers of participants per observation ranged from 96 to 109. ACIQ = Attachment and Clinical Issues Questionnaire.

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

following question: If the two scales of the ECR are multidimensional constructs, then how can they have such high coefficient alphas? As noted in the introduction, it is possible to observe high coefficient alphas if the scale is long enough even when the scale is multidimensional (Schmitt, 1966). To empirically demonstrate this with the present data, we added our different and empirically distinct avoidant attachment scales to mother, father, and partner together into one ACIQ avoidance scale. When we calculated the coefficient alpha, we found it to be .85, similar to

the ECR avoidance scale of .89 in this study. Thus, the ACIQ can get a similar overall avoidant scale with similar coefficient alphas, but as was seen from the discriminate data and the previous studies, be multidimensional in nature.

In summary, although the relevant attachment scales of the ACIQ correlated with the ECR, the correlations and regressions demonstrated that the mother, father, and partner avoidance scales were empirically distinct. Combining them into a general overall avoidance scale like the ECR did not fit the data presented here or elsewhere (Baldwin et al., 1996; Bowlby, 1973; Bretherton, 1990; Cozzarelli et al., 2000; Kobak, 1994; Lewis, 1994; Lindberg & Thomas, 2011; Main et al., 1988; Overall et al., 2003; Pierce & Lydon, 2001).

Concurrent Evidence

Another purpose of this study was to test for concurrent evidence by examining how the ECR and the ACIQ predict partner satisfaction, mother warmth, and father warmth. The correlations between the ACIQ attachment scales and the ECR with the measures of partner satisfaction and mother and father warmth can be seen in Table 3. In predictions of partner satisfaction, mother warmth, and father warmth, the ECR avoidance scale squared correlations showed that they accounted for an average of 8% of the variance whereas the relevant scales of the ACIQ averaged 42%. We return to this table again when discussing discriminate evidence.

To test the second set of hypotheses about concurrent evidence and whether the ACIQ adds significant predictive power above and beyond the ECR, several regressions were performed. The first set of regressions used the partner satisfaction measure as the dependent variable (Table 4). The forward stepwise regressions were performed by first entering the partner scales of the ECR, and then only the ACIQ secure partner scale and not all 29 ACIQ scales to provide a more conservative test of the ACIQ. The two scales of the ECR had semipartial correlations of .12 for avoidance and .05 for anxiety when its scales were the only scales in the model. When the ACIQ secure partner scale was entered along with them, they dropped to only .02 each and the ACIQ scale's partial correlation was .29. Almost the same patterns were found with stepwise models. Thus, in addition to providing convergent evidence that the ACIQ predicts the same things as did the ECR, the regression analyses demonstrated that the ACIQ absorbs most of the variance of the ECR in addition to more than doubling the overall amount of variance accounted for.

When the two scales of the ECR were entered first to predict mother warmth, the squared semipartial correlation was .06. Adding the secure mother ACIQ scale to the model dropped the ECR scales to .01, which was insignificant, and the ACIQ secure mother scale's squared semipartial correlation was .33. These results are presented in Table 5 and it can be seen that the stepwise regression models converged on these results.

TABLE 3. Correlations of the ECR Scales and the ACIQ Attachment Scales With the Partner Satisfaction Scale, and Scales of Mother Warmth (Mwarm) and Father Warmth (Dwarm)

Scale	Partsat	Mwarm	Dwarm
ECR avoido	-.33***	-.24**	-.28**
ECR anxietyo	-.24	-.04	-.21*
ECR avoidp	-.40***	-.21*	-.30***
ECR anxietyp	-.30***	-.05	-.20*
Secure father	.13	.12	.69***
Secure mother	-.01	.60***	.13
Secure partner	.67***	.12	.11
Amb father	-.06	-.08	-.06
Amb mother	.01	-.55***	-.14
Amb partner	-.32***	-.08	-.11
Avoid father	-.12	-.03	-.42***
Avoid mother	-.0	-.47***	-.12
Avoid part	-.43***	.11	-.06
Cod/Preo father	.18	.01	.37***
Cod/Preo mother	.0	.06	-.1
Cod/Preo part	.39***	.13	.17
Sex intimate	.47***	.12	.08

Note. ACIQ = Attachment and Clinical Issues Questionnaire; ECR = Experiences in Close Relationship Questionnaire.

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

In predicting father warmth, the ECR scales squared semipartial correlations were .07 for avoidance and .02 for anxiety. Adding the secure father scale of the ACIQ decreased these ECR scales to .01 and the ACIQ secure father scale's squared semipartial correlation was .39 in the model. Table 6 shows that these results were also obtained in stepwise models. It should be emphasized again that it was only through comparisons of the theoretically most important ACIQ scales that comparisons were made. Therefore, even when fewer ACIQ scales than ECR scales were used, they were empirically more powerful than the ECR.

Discriminant Evidence

The next sets of comparisons were designed to test the third hypothesis about discriminate evidence. In examining Table 3 again, it can be seen that the ACIQ scale of avoidant mother was strongly inversely related to the mother warmth scale, $r(109) = -.47, p < .001$, but neither the avoidant partner scale, $r(104) = .11, p = .24$, nor the avoidant father scale $r(107) = -.03, p = .75$, were significantly related. Further, the ACIQ avoidant partner scale was significantly inversely related

TABLE 4. Summaries of Forward and Stepwise Regressions for the Two Scales of the ECR and the ACIQ Secure Scales as Predictors of Partner Satisfaction

Step	Variable(s) predicting partner satisfaction	<i>B</i>	<i>SE</i>	<i>B</i>	<i>sr</i> ²	<i>F</i>	<i>p</i>	Adj. <i>R</i> ²
Hierarchical models								
1	ECR avoidance-partner	-.34	.08	-.40	.16	18.95	<.001	.15
2	ECR avoidance-partner	-.30	.08	-.35	.12	18.95	<.001	
	ECR anxiety-partner	-.18	.07	-.23	.05	6.78	<.01	
								.19
3	ECR avoidance-partner	-.12	.07	-.14	.02	3.42	.07	.48
	ECR anxiety-partner	-.13	.06	-.16	.02	4.79	.03	
	ACIQ secure-partner	.48	.06	.59	.29	56.94	<.00	
Stepwise regression								
1	ACIQ secure-partner	.55	.06			81.28	<.001	.48
2	ACIQ secure-partner	.52	.06			74.20	<.001	
	ECR anxiety-partner	-.14	.06			5.84	.02	
3	ACIQ secure-partner	.48	.06	.59	.29	81.28	<.001	.48
	ECR anxiety-partner	-.13	.06	-.16	-.02	5.84	.02	
	ECR avoidance-partner	-.12	.07	-.14	-.02	3.42	.07	

Note. ECR = Experiences in Close Relationship Questionnaire; ACIQ = Attachment and Clinical Issues Questionnaire; *sr*² = squared semipartial correlation; Hierarchical: Step 1 Model *df* = 1, 102; Step 2 Model *df* = 2, 101; Step 3 Model *df* = 3, 98; Stepwise: Step 1 Model *df* = 1, 100; Step 2 Model *df* = 2, 99; Step 3 Model *df* = 3, 98.

to partner satisfaction, $r(103) = -.43$, $p < .001$, but partner satisfaction was not significantly related to either the avoidant mother scale, $r(102) = .00$, $p = .99$, or the avoidant father scale, $r(102) = -.12$, $p = .20$. This can also be seen when looking down the security scales of the ACIQ. When looking at secure to father, mother, and partner on the ACIQ, it can be seen that they average $R^2 = .42$ while when looking at correlations with the relevant figure on the measures of warmth and satisfaction, but only $R^2 = .01$ for other attachment figures. When the best ECR scale, the avoidance scale, is examined across the three measures it averaged only 8% of the variance. Thus, intervening variable logic would reason that we should talk of at least three or more kinds of attachment avoidance, security for mother, father, and partner, and that combining them as is done by the ECR does not allow the necessary distinctions between attachments to mothers versus fathers versus partners.

TABLE 5. Summaries of Forward and Stepwise Regressions for the Two Scales of the ECR and the ACIQ Secure Scales as Predictors of Mother Warmth

Step	Variable(s) predicting mother warmth	<i>B</i>	<i>SE</i>	<i>B</i>	<i>sr</i> ²	<i>F</i>	<i>p</i>	Adj. <i>R</i> ²
Hierarchical models								
1	ECR avoidance—overall	-.25	.10	-.24	.06	6.50	.01	.05
2	ECR avoidance—overall ECR anxiety—overall	-.25	.10	-.24	.06	6.50	.01	
3	ECR avoidance—overall ECR anxiety—overall ACIQ secure—mother	-.10	.08	-.10	.01	1.70	.19	.36
		.52	.07	.59	.33	61.10	.001	
Stepwise regression								
1	ACIQ secure—mother ^a	.54	.07	.60	.37	61.10	.001	.36

Note. ECR = Experiences in Close Relationship Questionnaire; ACIQ = Attachment and Clinical Issues Questionnaire; *sr*² = squared semipartial correlation; Hierarchical: Step 1 Model *df* = 1, 107; Step 2 Model *df* = 1, 107; Step 3 Model *df* = 2, 105; Stepwise: Step 1 Model *df* = 1, 106.

^aECR anxiety and avoidance—overall measures did not meet .15 level of significance criterion for model entry.

Summary of Study 2

The results of this study supported the three hypotheses tested. First, strong correlations were found between the ACIQ attachment scales and the ECR scales of avoidance and anxiety. They supported H_2 in that regression analyses demonstrated that when the relevant security scales of the ACIQ were added to the ECR scales in predicting partner satisfaction, mother warmth, and father warmth, they doubled the amount of variance accounted for. However, when the relevant secure ACIQ scales were entered first, the ECR scales added next to nothing. Last, H_3 was supported in that good discriminate evidence was found for the ACIQ because the secure mother scale of the ACIQ was the best predictor of mother warmth, the secure father scale of the ACIQ was the best predictor of father warmth, and that the secure partner scale was the best predictor of partner satisfaction.

General Discussion

In summary, these studies were designed to make a preliminary case for the validity and utility of the attachment scales of the ACIQ. The gauntlet suggested by Mikulincer and Shaver (2007) was a high one when they stated that many of

TABLE 6. Summaries of Forward and Stepwise Regressions for the Two Scales of the ECR and the ACIQ Secure Scales as Predictors of Father Warmth

Step	Variable(s) predicting father warmth	<i>B</i>	<i>SE</i>	<i>B</i>	<i>sr</i> ²	<i>F</i>	<i>p</i>	Adj. <i>R</i> ²
Forward selection entering ECR scales first								
1	ECR avoidance–overall	-.33	.11	-.28	.08	9.00	.01	.07
2	ECR avoidance–overall	-.33	.11	-.26	.07	9.00	.003	
	ECR anxiety–overall	-.20	.10	-.18	.03	3.69	.06	.09
3	ECR avoidance–overall	-.11	.08	-.09	.01	1.93	.17	
	ECR anxiety–overall	.11	.08	-.09	.01	1.53	.22	.47
	ACIQ secure–father	.59	.06	.65	.39	93.50	.001	
Stepwise regression entering ACIQ secure father first								
1	ACIQ secure–father ^a	.62	.06	.68	.47	93.50	.001	.47

Note. ECR = Experiences in Close Relationship Questionnaire; ACIQ = Attachment and Clinical Issues Questionnaire; *sr*² = squared semipartial correlation; Hierarchical: Step 1 Model *df* = 1, 106; Step 2 Model *df* = 2, 105; Step 3 Model *df* = 3, 103. Stepwise: Step 1 Model *df* = 1, 105.

^aECR anxiety and avoidance–overall did not meet .15 level of significance criterion for model entry.

the landmark studies would need to be repeated in improved forms when new attachment measures are developed. A second criterion for new measures would be that they should demonstrate superior concurrent, convergent, and discriminant evidence than the established measures as well. The present studies attempted to cross these challenges. First, in Study 1, the secure scales of the ACIQ predicted the litmus test of Harlow (1953) and Ainsworth (1964); to whom one would turn in times of stress and for affective sharing. It is important to note that the ECR never passed through this test.

Study 2 compared the ACIQ to the ECR. Although correlating with the ECR demonstrating convergent evidence, the ACIQ accounted for more of the variance in predictions of partner satisfaction, mother warmth, and father warmth, providing superior concurrent evidence. The relevant scales of the ACIQ accounted for substantial additional unique variance when entered after the ECR, and the scales of the ECR contributed little when they were entered after the relevant ACIQ scales. In addition, the correlations demonstrated good discriminate evidence for the different security scales of the ACIQ in that they differentially correlated

with partner satisfaction, mother warmth, and father warmth. Thus, the ACIQ succeeded in these essential psychometric and validity tests.

AUTHOR NOTES

Marc A. Lindberg is a professor of psychology at Marshall University. Contact him for the test and assistance in scoring the ACIQ, because he will hold the copyright. **April Fugett** is an assistant professor of psychology at Marshall University. Her current research interests are reading, technology and learning, experimental design, and psychometrics. **Stuart W. Thomas**, of Marshall University, specialized in quantitative psychology. He died of ALS on May 26, 2003. His brilliance was accompanied by a warm heart and loving compassion for students and colleagues.

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APPENDIX A

Scales, Number of Items in the Scale, and Representative Items of the ACIQ

- 1 ABUSER SCALE (ABUSER) (6)
I feel like hitting those people who are close to me.
Some people deserve to be put in their place.
- 2 AMBIVALENT ATTACHMENT–FATHER (AMBFAT) (6)

- My feelings for my father were confusing.
Arguments with my father were a love–hate kind of thing.
- 3 AMBIVALENT ATTACHMENT–MOTHER (AMBMOT) (8)
My feelings for my mother were confusing.
Arguments with my mother were a love–hate kind of thing.
- 4 AMBIVALENT ATTACHMENT–PARTNER (AMBPART) (9)
My feelings for my partner are confusing
Arguments with my partner are a love–hate kind of thing.
- 5 ANGER (9)
I feel resentful because I can not pursue my own interests.
When I get angry, I explode.
- 6 ANXIETY (ANX) (6)
I feel that something bad is about to happen.
I use a lot of energy worrying about my problems.
- 7 AVOIDANT ATTACHMENT–FATHER (AVFAT) (7)
After an argument with my father, I tried to avoid him.
When I got really mad at my father, I felt cold and rejecting towards him.
- 8 AVOIDANT ATTACHMENT–MOTHER (AVMOT) (9)
After an argument with my mother, I tried to avoid her.
When I got really mad at my mother, I felt cold and rejecting towards her.
- 9 AVOIDANT ATTACHMENT–PARTNER (AVPART) (9)
After an argument with my partner, I tried to avoid him/her.
When I got really mad at my partner, I felt cold and rejecting towards him/her.
- 10 CODEPENDENCE–ENMESHED MOTHER (CODMOT) (14)
I changed my feelings to make my mother happy.
When my mother felt sad for days, I did too.
- 11 CODEPENDENCE–ENMESHED FATHER (CODFAT) (15)
I changed my feelings to make my father happy.
When my father felt sad for days, I did too.
- 12 CODEPENDENCE–ENMESHED PARTNER (CODPART) (14)
I change my feelings to make my partner happy.
When my partner felt sad for days, I did too.
- 13 13 CONTROL (CTRL) (11)
I avoid situations that I cannot control.
If people would just change a little bit then most of my problems would go away.
- 14 DENIAL (5)
It is good to keep a stiff upper lip even when I hurt inside.
I say I am happy when I really am not.
- 15 FAMILY RIGIDITY VS CHAOS (FAMRIGID) (5)
My family believed that family rules should not change.
Family rules were clear.
- 16 FAMILY SUPPRESSION OF FEELINGS (FSUP) (6)
People in my family had firm expectations for how we were supposed to feel.
It was good to keep your feelings to yourself in our family.
- 17 JEALOUSY SCALE (JEAL) (8)
I worry that my partner will find somebody else.
I get angry when others flirt with my partner.
- 18 RUMINATION (9)
Once I start thinking about a problem, I think about it over and over again.

- I am distracted in conversations with others because I am thinking about something else that is important.
- 19 PEER RELATIONS (PEER) (7)
My friends will always be there when I need them.
My friends know how I feel.
- 20 PERFECTIONISM (PERF) (10)
I like to be the best at things.
I like to do things right or not do them at all.
- 21 RELIGION (RELG) (5)
I attend a place of worship/church.
A higher power/God is important to me.
- 22 SEXUAL AROUSAL (SAR) (6)
I am turned on if I see a pornographic movie.
I am easily turned on sexually.
- 23 SECURE FATHER (SECFAT) (6)
My father was there when I needed to talk about a problem.
When I was upset, my father helped me deal with it.
- 24 SECURE MOTHER (SECMOT) (7)
My mother was there when I needed to talk about a problem.
When I was upset, my mother helped me deal with it.
- 25 SECURE PARTNER (SECPART) (5)
My partner is there when I need to talk about a problem.
When I am upset, my partner helps me deal with it.
- 26 SHAME (10)
I feel ashamed when I feel sad, rejected, fearful, lonely, dependent or hurt.
I do not amount to much as a person.
- 27 SEXUAL INTIMACY (SEXINT) (6)
I talk about what turns me on sexually with my partner.
Sex is best when it is accompanied by warm feelings
- 28 MISTRUST (MTR) (6)
It is good to be suspicious about the motives of others.
If I don't trust other people then I will not be disappointed.
- 29 WITHDRAW/ENGAGEMENT (WITHDRAW) (9)
I like to withdraw from people when I am stressed.
I do not want others to know what is going on in my life.