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THE RELATION BETWEEN PATIENT ATTACHMENT AND THERAPEUTIC ALLIANCE:
A META-ANALYSIS

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Abstract

This meta-analysis quantitatively synthesizes previous research on the relation between patient adult attachment style and patient-rated therapeutic alliance. Attachment theory predicts that past relationship experiences affect current attitudes towards and behavior in relationships, so it was hypothesized that adult attachment style would correlate with the alliance, which is an operationalization of the patient-therapist relationship. Both attachment avoidance and attachment anxiety were predicted to correlate negatively with the alliance, with avoidance predicted to have a stronger inverse relation with alliance quality. A random-effects model was used to calculate the mean weighted product-moment correlation (r) for 18 studies (nine published and nine unpublished) of individual outpatient therapy with adults. The first hypothesis was supported: the mean weighted r for avoidance and alliance was $-.190$ (95% confidence interval from $-.257$ to $-.124$), and the mean weighted r for anxiety and alliance was $-.147$ (95% confidence interval from $-.211$ to $-.082$). Implications for theory, practice, and future research are discussed.

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Introduction

Over the past two decades, psychotherapy researchers have charged themselves with the important task of developing an understanding of the therapeutic alliance in terms of its theoretical structure, its influence on outcome, the factors that influence it, and its optimum development. It is difficult to overstate the centrality of this task given the current state of the research on psychotherapy process and outcome. Based on a sample of more than 100 studies, Lambert and Barley (2001) estimate that 30% of change in therapy is due to common factors; this constitutes the largest proportion of change over which the therapist has some control (as their estimate apportions 40% of change to extratherapeutic factors, 15% to expectancy/placebo effects, and 15% to specific therapeutic techniques). Noting that from among these common factors, the therapeutic relationship has consistently been demonstrated to affect outcome, they recommend that “therapists need to remember that the development and maintenance of the therapeutic relationship is a primary curative component of therapy.” In their update of Horvath and Symonds’ 1991 meta-analysis (which found a correlation between alliance and outcome of $r = .26$), Martin, Garske, and Davis (2000) found that among 79 studies, the average weighted correlation between alliance and outcome was $r = .22$, a moderate but robust relation that is especially compelling in light of the weak or inconclusive findings on numerous other potential common factors (Horvath & Luborsky, 1993). Findings such as these have led the Division 29 Task Force on Empirically Supported Therapy Relationships to label the alliance a “demonstrably effective” factor (Ackerman, Benjamin, Beutler, Gelso, Goldfried, Hill, et al., 2001) and to a view of the alliance as the “quintessential integrative variable” (Wolfe & Goldfried, 1988).

The concept of alliance has evolved from origins that can be traced through the ideas of Freud and Rogers into a broadly-accepted transtheoretical construct (Castonguay, Constantino, & Grosse Holtforth, 2006; Constantino, Castonguay, & Schut, 2002; Elvins & Green, 2008; Horvath & Luborsky, 1993; Horvath & Symonds, 1991). The concept of alliance attempts to capture the collaborative aspects of the therapeutic relationship. It is believed to facilitate change processes rather than to induce change itself, though the relationship itself may also be a focus of treatment, particularly in interpersonal therapies (Constantino et al., 2002; Horvath & Symonds, 1991). Because it is the basis of the measure used in this meta-analysis, Bordin's (1979) conceptualization of the alliance is particularly relevant. He delineated three components: goals, or agreement on what the client should accomplish in therapy; tasks, or agreement on what steps both the therapist and the client need to take to reach those goals; and bond, or mutual trust and understanding.

It is important to determine sources of variance in the alliance in order to understand both how the alliance forms and what can be done to strengthen it. Individual differences among clients, that is, client characteristics, may encourage or impede alliance formation, as a number have been shown to relate moderately to the alliance (Constantino et al., 2002). Identifying these client characteristics could allow therapists to foster stronger alliances by addressing these characteristics during treatment. Additionally, establishing which client characteristics are associated with the alliance can improve understanding of the construct, which despite its centrality remains theoretically nebulous. If a client variable relates strongly to the alliance, it is worthwhile to explore whether it could be considered a client-contributed component of the alliance.

Several researchers have identified adult attachment style as among the client variables potentially relevant to the alliance. Attachment theory, originally articulated by Bowlby (1988), asserts that individuals' representations of interpersonal relationships stem from early experiences with caretakers, and that particular patterns of relating, called adult attachment styles, develop as a result. Given that a patient's subjective perception of the alliance seems particularly vital to outcome (Horvath & Luborsky, 1993; Horvath & Symonds, 1991), it seems likely that the patient's previous experiences in relationships, operationalized as attachment style, form an important component of the alliance. Bowlby (1982) himself suggested that attachment representations may be activated during therapy, with the therapist fulfilling functions analogous to childhood attachment figures, serving both as a "secure base" from which to explore and as a "safe haven" offering protection and comfort when the patient is distressed. Building on this idea, researchers, particularly those of the analytic school, have suggested that the alliance is partly dependent on past relationships (e.g., Gaston, 1990; Horvath & Luborsky, 1993; Piper, Azim, Joyce, & McCallum, 1991), while others have acknowledged that, at the very least, there may be an "attachment dynamic at play in alliance and in relation to outcome" (Elvins & Green, 2008).

Understanding the role of patient attachment in the alliance has clinical utility. Castonguay and colleagues (2006) propose that one of many productive directions in alliance research is to develop and include in therapies techniques for developing and maintaining the alliance. If attachment style affects the alliance, attachment may be a site for alliance-based interventions. They also suggest that addressing the alliance with insecurely-attached patients could act to change attachment by "[paving] the way for corrective relational experiences," thus

improving the patient's interpersonal relationships and perhaps even improving outcome in the process.

Classification of adult attachment styles has evolved since the initial description of those styles by Main and colleagues. Main developed an assessment instrument, the Adult Attachment Interview (AAI), that uses Bowlby's and Ainsworth's categories of infant attachment to derive its classifications of adult attachment: secure, dismissing (corresponding to Ainsworth's anxious-avoidant), preoccupied (corresponding to Ainsworth's anxious-resistant), and unresolved (corresponding to Ainsworth's disorganized). Secure individuals are capable of both intimacy and independence. They are comfortable having others rely on them for emotional support and are willing to rely on others. They are confident that they are worthy of love and care.

Dismissing individuals value independence, often minimizing the importance of maintaining close relationships and derogating emotions related to caring and intimacy. Preoccupied individuals fear abandonment, rely on others for emotional support, and often struggle to achieve the degree of intimacy they desire, vacillating between feeling "smothered" and neglected.

Finally, individuals who appear to dissociate when describing trauma during the AAI are classified as "unresolved with respect to trauma" and tend to behave inconsistently in relationships (Main, Kaplan, & Cassidy, 1985).

While developmental psychologists often continue to use interviews in their research, social psychologists have developed and refined self-report measures of adult attachment. Hazan and Shaver (1987) shifted the focus of adult attachment to romantic relationships when they created a prototype-style self-report measure of adult attachment that includes categories of secure, avoidant (corresponding to Main's dismissing), and anxious (corresponding to Main's preoccupied). Bartholomew (1990; Bartholomew & Horowitz, 1991) then differentiated

between two types of avoidance: the traditional avoidant/dismissing type and a fearful type in which the individual desires intimacy but is afraid to seek it, often based on past experiences in which close relationships caused pain. Self-report measures of adult attachment have proliferated in the years since these developments (see Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2009, for a review), reflecting a lack of agreement on the fine details of the underlying structure of attachment styles.

This meta-analysis will rely on the structure proposed by Brennan, Clark, and Shaver (1998), who factor-analyzed a large number of the self-report measures of adult attachment available at the time and found that the items loaded on two factors, which they labeled avoidance and anxiety. As a result of the method of its development, this underlying two-dimensional structure represents something of a consensus. Additionally, it parallels aspects of other models and corresponds particularly well to Bartholomew and Horowitz's (1991) profiles: an individual low on both anxiety and avoidance falls into secure category; an individual high on avoidance and low on anxiety is dismissing-avoidant; an individual high on anxiety and low on avoidance is preoccupied; and an individual high on both anxiety and avoidance is fearful-avoidant.

If attachment is either a component of the alliance or contributes to the alliance, there should be a correlation between measures of patient attachment and alliance. In their 2008 meta-analysis, Diener, Hilsenroth, and Weinberger examined the security versus insecurity dimension of attachment, leading to the unsurprising conclusion that secure attachment is associated with better alliance: in a sample of 12 studies with a total of over 550 subjects, secure attachment style was associated with stronger alliance, $r = .17$. Diener and colleagues' study, while enlightening, suffers from several limitations. First, it may be an underestimate of the strength of the

relation between attachment and alliance. As explained above, attachment measures are numerous and diverse, and none correlates perfectly with the others. This imperfect validity attenuates the size of the correlation. Additionally, Diener and colleagues include only published papers in their meta-analysis, which invites the possibility of publication bias and limits the power of analyses. Finally, while the finding is useful in that it confirms the possibility of a relation, albeit weak, between attachment and alliance, it confers limited practical advantage on the clinician. While insecure attachment is not in itself a “disorder,” clinical populations tend to be less securely attached than the general population (Bakermans-Kranenburg & van IJzendoorn, 2009; Fortuna & Roisman, 2008; Mickelson, Kessler, & Shaver, 1997); therefore, practitioners are more likely to conduct therapy with a variety of insecurely-attached patients than with secure patients. Practitioners may, then, find a more fine-grained analysis useful, one that examines which types of insecure attachment are associated with worse alliance. In other words, are both anxiety and avoidance dimensions associated with decreased alliance, and in what proportions?

This meta-analysis addresses how both client avoidance and anxiety relate to client-rated alliance. Several studies have correlated these variables, but their results have varied. While most found small to moderate negative relations between both anxiety and alliance and avoidance and alliance, one found a moderate positive relation between anxiety and alliance (Biscoglio, 2005) and several others found no relation between an attachment dimension and alliance (e.g., Frehling, 2005; Sauer, 2000). Given the heterogeneity of past research, it is beneficial to use meta-analysis both to determine that a relation exists and to estimate its size. The current study also improves upon previous work by correcting for imperfect convergent validity of measures and by including a number of unpublished doctoral dissertations.

The primary hypothesis of this meta-analysis is that both attachment avoidance and attachment anxiety will relate inversely to the quality of the alliance. Consistent with their focus on self-reliance, avoidant patients may feel uncomfortable asking for support from the therapist and may withdraw if the therapist probes about past attachment relationships (Dozier, 1990; Dozier, Lomax, Tyrrell, & Lee, 2001), impeding formation of an alliance. Anxious patients, on the other hand, may feel disappointed that they cannot rely on the therapist to solve their problems immediately or that the therapist is inadequately attentive or nurturing. The accessibility and volatility of their emotions may also lead to alliance ruptures. However, because anxious patients are emotionally available and open to discussing personal topics (Dozier, 1990), it is predicted that this meta-analysis will find that the negative relation between anxiety and the alliance is weaker than that between avoidance and the alliance.

Methods

Selection of Studies

Articles and dissertations for inclusion in the meta-analysis were found by examining reviews of the literature (Berant & Obegi, 2009; Diener et al., 2009; Smith, Msetfi, & Golding, 2010) and through database searches. The final literature search was conducted within the PsycINFO and Dissertation Abstracts databases on June 30, 2010, using the search terms (attachment OR relationship style OR interpersonal style) AND (alliance OR therapeutic relationship OR client-therapist relationship OR therapist-client relationship OR patient-therapist relationship OR therapist-patient relationship). Abstracts of the studies appearing in the search results were read, and full texts were obtained for those that appeared to be eligible for this meta-analysis.

Studies needed to meet several criteria: (a) the study had to include individual therapy with adults, (b) the study had to include patient self-report measures of attachment that correlate strongly with the ECR ($r > .7$), and (c) the study had to include patient report of alliance via the Working Alliance Inventory (WAI; Horvath & Greenberg, 1986; 1989).

Studies in which attachment was measured with interviews were excluded because, while both interview and self-report measures of attachment demonstrate predictive validity, they correlate weakly and appear to measure different aspects of attachment (Bartholomew & Shaver, 1998). Additionally, studies that used the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) were excluded. The secure, fearful, preoccupied, and dismissing dimensions of this instrument correlate only moderately or weakly with either dimension of the ECR, apparently because the RQ's dimensions are rotated 45 degrees with respect to the ECR's (Brennan et al., 1998; Tsagarakis, Kafetsios, & Stalikas, 2007). The items of the RQ can also be

used to calculate “model of self” and “model of other” dimensions, which approximate the ECR’s dimensions more closely (Conradi, Gerisma, van Duijn, & de Jonge, 2006; Sibley, Fischer, & Liu, 2005); unfortunately, none of the three otherwise-eligible studies that used the RQ (Parish & Eagle, 2003; Reis & Grenyer, 2004, Satterfield & Lyddon, 1998) reported on these dimensions. One other study (Dolan, 1992) was excluded for use of an attachment measure for which no correlations with the ECR were available.

Patient report of alliance was selected because it consistently predicts outcome better than therapist report (e.g., Barber et al., 1999; Horvath & Symonds, 1991). Though in some instances observer report may be superior (e.g., in the cases of substance use disorders; Cecero, Fenton, Frankforter, Nich, & Carroll, 2001; Fenton, Cecero, Nich, Frankforter, & Carroll, 2001), the majority of studies found use patient report, probably on the basis of both its convenience and its predictive validity (Martin et al., 2000). The meta-analysis was limited to studies using the WAI because it is widely used and highly validated in terms of construct, convergent, and predictive validity (Elvins & Green, 2008); the majority of studies showing a relation between alliance and outcome use the WAI (Martin et al., 2000). Additionally, very few of the eligible studies used other alliance measures. Including these studies would attenuate results downward as a result of the imperfect (though strong) correlations among alliance measures, which was deemed to outweigh the benefit of slightly increased power.

Effect Size Estimation

The product-moment correlation (r) was used as the effect size statistic for the meta-analysis. Because all the studies included reported results in the form of correlations, no transformations of other statistics into r -values were necessary. When a study measured alliance multiple times throughout the therapy, the correlations for each measurement time were

weighted by the number of subjects who completed that measurement and combined into one effect size.

Validity Correction and Combination of Effect Sizes

While little power was lost through excluding studies that did not use the WAI, to limit studies to those that used the ECR would have resulted in the loss of more than half of the eligible studies. However, the imperfect convergent validity of these measures would result in an attenuation of the average effect size if combined without correction. In order to better estimate effect sizes as if all studies had used the ECR, the reported effect sizes of each study were divided by the correlation between the measure used and the ECR. These correlations were found in the literature (Brennan et al., 1998; Wei, Russell, Mallinckrodt, & Vogel, 2007) and, in the case of the Experiences in Close Relationships-Revised scale, by examining unpublished data (Levy, 2009).

The effect sizes were combined using the method described by Schmidt, Le, and Oh (2009), which uses a random-effects model and assigns each study a weight based on its sample size and any attenuation artifacts for which corrections have been applied (in this meta-analysis, the only correction was for validity). Random-effects models are based on the assumption that there is some heterogeneity in the true effect sizes of studies beyond those resulting from measurement error, which is almost always the case, and they have become the preferred model for meta-analyses (Diener et al., 2009). In addition to calculation of point estimates using the method discussed above, 95% confidence intervals were calculated using Hunter and Schmidt's approximation method (2004, p. 206). It should be noted that because a random-effects model is assumed, the 95% confidence interval indicates the likely values of the *mean* of a distribution of effect sizes, rather than the likely values of a single effect size.

Analysis of Publication Bias

To test for possible publication bias, effect sizes for published studies versus unpublished dissertations were calculated and compared. Additionally, a “file drawer analysis” was completed using Hunter and Schmidt’s (2004, pp. 500-501) method to determine the number of studies averaging null results that would be needed to reduce the effect sizes to $r = -.10$ and $r = -.05$.

Results

Sample Characteristics

Nine published studies and nine unpublished dissertations were included in the meta-analysis and are summarized in Table 1. (In the cases of three studies [Satterfield & Lyddon, 1995; Romano, Fitzpatrick, & Janzen, 2008; Sauer, Lopez, & Gormley, 2003], which used data from their authors' dissertations, the studies were considered published, but the dissertations were often more comprehensive and were used to supplement the data available in the published studies.) The studies ranged in publication year from 1995 to 2009 and surveyed a total of 973.08 subjects ("fractional" subjects resulted from the averaging of numbers of subjects in studies in which alliance was measured multiple times). The mean number of subjects in a study was 54.06 (range 22.33-99). The mean age of study participants was approximately 30 years, 73% of the participants were female, and 72% were White. Most studies measured early alliance: half of the studies collected alliance measurements after session two or three, and all but four studies measured alliance before the eighth session. For most studies, the therapeutic orientation of the practitioners was heterogeneous, as was patient pathology; because therapy in all the samples was conducted in outpatient settings, severe mental illness was underrepresented.

Effect Sizes

The mean weighted r for anxiety and the alliance was $-.147$ with a 95% confidence interval ranging from $-.211$ to $-.082$, indicating that greater attachment anxiety was associated with weaker alliance. The mean weighted r for avoidance and alliance was $-.190$ with a 95% confidence interval ranging from $-.257$ to $-.124$, with greater attachment avoidance predicting weaker alliance.

Table 1

Studies Included in the Meta-Analysis

Study	<i>n</i>	Attachment Publication		Reported ES		Corrected ES	
		measure	status	Avoidance	Anxiety	Avoidance	Anxiety
Bair (2008)	86	ASQ	U	-.01	-.10	-.01	-.11
Biscoglio (2005)	32	RSQ	U	-.02	.22	-.02	.30
Brummett (2008)	99	ECR-R	U	-.21	-.09	-.22	-.10
Dyke (1996)	90	AAS	U	-.30	-.02	-.34	-.03
Eames & Roth (2000)	24.75 ^a	RSQ	P	-.278	-.209	-.34	-.29
Frehling (2005)	29	ECR	U	-.018	.117	-.02	.12
Goldman & Anderson (2007)	30	AAS	P	.085	-.264	.10	-.33
Helwig (1996)	43	AAS	U	-.32	-.14	-.37	-.18
Kivlighan et al. (1998)	40	AAS	P	-.35	-.19	-.40	-.24
Majors (2009)	47	ECR	U	-.33	-.17	-.33	-.17
Mallinckrodt et al. (1995)	76	AAS	P	-.22	-.32	-.25	-.41
Mallinckrodt et al. (2005)	38	ECR	P	-.24	-.33	-.24	-.33
Marmarosh et al. (2009)	31	ECR-S	P	-.32	-.11	-.34	-.12
Mendelow (2008)	85	ECR-R	U	.02	-.03	.02	-.03
Romano et al. (2008)	67	ECR	P	-.22	-.27	-.22	-.27
Satterfield & Lyddon (1995)	60	AAS	P	-.12	-.19	-.14	-.24
Sauer et al. (2003)	22.33 ^a	AAInv	P	.089	-.005	.11	-.01
Sheu (2008)	73	ECR	U	-.26	-.12	-.26	-.12

Note. AAS = Adult Attachment Scale (Collins & Read, 1990); AAInv = (Simpson, 1990); ASQ = Attachment Style Questionnaire (Feeney, Noller, & Hanrahan, 1994); ECR = Experiences in Close relationships (Brennan et al., 1998); ECR-R = Experiences in Close Relationships-Revised (Fraley, Waller, & Brennan, 2000); ECR-S = Experiences in Close Relationships-Short form (Wei et al., 2007); ES = effect size; P = published; RSQ = Relationship Scales Questionnaire (Griffin & Bartholomew, 1994); U = unpublished

^aSubject sizes that are not whole numbers result from taking the mean number of subjects from multiple measurement times in a single study.

Publication Status

For attachment anxiety and alliance, published studies had a mean weighted *r* of $-.272$ (95% confidence interval from $-.305$ to $-.241$), while unpublished dissertations had a mean weighted *r* of $-.069$ (confidence interval from $-.103$ to $-.036$). For attachment avoidance and alliance, published studies had a mean weighted *r* of $-.212$ (95% confidence interval from $-.257$

to $-.166$), while unpublished dissertations had a mean weighted r of $-.177$ (95% confidence interval from $-.225$ to $-.128$).

The results of the file drawer analysis indicated that 16 studies averaging null results would need to be found to reduce the mean effect size for avoidance to $r = -.10$; 50 studies would be needed to reduce it to $-.05$. Eight studies averaging null results would reduce the anxiety-alliance correlation to $-.10$, and 34 studies would reduce it to $-.05$. Given the near-null relation between anxiety and alliance in the unpublished dissertations and the relatively small number of null studies needed to reduce the correlation between the two, it is quite possible that the true anxiety-alliance relation is weaker than what is reported here.

Discussion

The intent of this meta-analysis was to determine the strength of the relations between attachment avoidance and alliance and between attachment anxiety and alliance. As hypothesized, both relations were negative, with higher avoidance and higher anxiety predicting worse alliance, $r = -.190$ and $r = -.147$ respectively. While the difference between the two means lacked statistical significance as indicated by the overlap of their confidence intervals, it indicates a trend toward the second hypothesis, that attachment avoidance predicts worse alliance than attachment anxiety.

The small size of these relations confirms that attachment style and patient-rated alliance are different constructs, and that past relationships have a limited effect on the alliance; in other words, the alliance is not entirely subsumed in the patient's transference, as a minority of psychoanalysts have argued (e.g., Brenner, 1979; Curtis, 1979; Deserno, 1998; Freebury, 1989). While other patient and therapist pretreatment characteristics may influence the alliance, it is doubtful that they explain all of the alliance; this finding contributes to the body of evidence that alliance is a function of what transpires in the therapy room. Insecurely attached patients are not predestined to fail to form alliances; it is incumbent upon both the therapist and patient to behave in ways that nurture alliance during the therapy.

Though small, these correlations between attachment and outcome are not negligible, in the context of other effect sizes in psychotherapy research, including that of the alliance-outcome relation. One is tempted to make a causal inference from these results: it is difficult to forge an alliance with insecurely-attached patients, particularly avoidant ones, *because* of their insecure attachment. Avoidant patients balk at closeness, and anxious patients are dissatisfied with the

amount of support offered by the therapist. This is certainly a reasonable-sounding conclusion, but the correlational nature of the finding demands that one explore alternative explanations.

It is possible that insecurely-attached clients are more distressed than securely-attached clients, or that they differ in the type of presenting problems, and that their distress or their particular psychopathology impedes alliance formation. Insecurely-attached patients do tend to display more severe symptomatology than their securely-attached counterparts (Bakermans-Kranenburg & van IJzendoorn, 2009; Fortuna & Roisman, 2008; Mickelson et al., 1997); however, past research has only inconsistently demonstrated a relation between pretreatment symptom severity and alliance (Constantino et al., 2002). It is therefore unlikely that level of distress accounts completely for the relations found here, but only a study that includes measurements of attachment, symptom severity, and alliance and that tests a mediation or moderation model can confirm that this is the case.

A more compelling alternative explanation for the findings is that social-cognitive factors rather than affective factors associated with insecure attachment impede the development of the alliance. The same high-quality parenting that encourages secure attachment fosters the development of interpersonal skills, including social cognition and theory of mind (Cahill, Deater-Deckard, Pike, & Hughes, 2007; Fonagy, Gergely, Jurist, & Target, 2002). Both bond formation and reaching agreement on tasks and goals demand clear communication from both parties in the therapeutic relationship, and solid interpersonal skills are the foundation of such communication. Therefore, it is quite possible that the inverse relation between insecure attachment and alliance can be explained by deficits in interpersonal skills, a possibility that is corroborated by findings that alliance is more difficult to form with patients who have difficulty

maintaining social relationships or are low in psychological-mindedness (Horvath, 1991, cited in Constantino et al., 2002).

A theoretical foundation for this hypothesis appears in the psychoanalytic literature: object relations theory posits that early experiences with caretakers lead to the formation of a child's representations of self and other, and that these object representations are the basis of attachment style and social cognition (Fonagy et al., 2002; Kernberg, 1984; Westen, 1991).

Though the body of research relating theory of mind and social cognition to alliance is limited and therefore precludes drawing strong connections among these factors, research on attachment, quality of object relations, and the alliance is more extensive. Quality of object relations has frequently (though not always) been shown to relate to the alliance (e.g., Dyke, 1996; Goldman & Anderson, 2007; Mallinckrodt et al., 2005; Niemeyer, 2004; Piper, Azim, Joyce, McCallum, Nixon et al., 1991), with higher scores on quality of object relations relating to better alliance. In support of the possibility that social cognition is related to alliance, the social-cognitive aspects of object relations seem to relate more strongly to the alliance than the affective aspects (Mallinckrodt et al., 2005; Niemeyer, 2004). In at least three cases, however, a model in which object relations was predicted to moderate the relation between attachment and alliance failed to achieve support, as object relations scores did not contribute to the prediction of alliance beyond attachment scores (Dyke, 1996; Goldman & Anderson, 2007; Niemeyer, 2004).

Any inconsistency of the findings on object relations and the alliance does not preclude the possibility that social cognition and theory of mind mediate or moderate the relation between attachment and alliance, as the constructs of object relations and social cognition are far from identical. Quality of object relations is too broad a variable to test this hypothesis and, in fact, introduces a confound by overlapping with attachment itself, with some object relations

measures including attachment as a dimension or subscale (Huprich & Greenberg, 2003) and with moderate to high correlations between popular object relations measures and attachment (Goldman & Anderson, 2007; Martin, 2006). Additionally, framing the question in more theoretically neutral terms, rather than in ones embedded in psychoanalytic theory, may facilitate broader integration of the eventual findings.

It is crucial that future research use robust and specific measures of social cognition and theory of mind to address both whether they relate to the alliance and whether any relation discovered accounts entirely for the attachment-alliance relation. Determining whether an attachment-related impediment to the alliance is more of an affective impediment or a social-cognitive one will direct interventions aimed at improving the alliance.

In addition to measuring symptomatology and social cognition/theory of mind, future studies may bear fruit by measuring other client variables that have been shown to relate to alliance (e.g. perfectionism, self concept, etc.; Constantino et al., 2002) and examining whether these relate to attachment and mediate the attachment-alliance relation. Other differences between studies (e.g., time of alliance measurement) could also be explored as potential sources of variance.

Limitations

Like all meta-analyses, this study was limited by the content of the available literature. The studies included were demographically narrow: most were conducted in university counseling centers and clinics, with predominantly White, female, and young subjects. Therefore one must be cautious about the generalizability of the findings. Further, only those potential mediators and moderators that were reported in a sufficient number of studies could be analyzed. As a result, the questions of whether symptom severity, social cognition, or other

factors mediate or moderate the attachment-alliance relation cannot be answered meta-analytically at this time. Finally, the heterogeneity of the attachment measures used in the studies likely introduced error, despite the inclusion of correction factors. The correction factors themselves contain sampling error, and the studies in which they were determined may have sampled different populations than the studies in this meta-analysis.

The analysis of publication bias calls into question the accuracy of this study's finding on attachment anxiety and the alliance. It is apparent that a relation between avoidant attachment and the alliance exists, given the similarity of the results of the published studies and the unpublished dissertations and given the number of studies averaging null findings that would be needed to reduce the correlation appreciably. However, the status of the anxiety-alliance relation is unclear. The correlation between anxiety and the alliance in the published studies was even higher than the avoidance-alliance correlations, but the anxiety-alliance correlation among the unpublished dissertations was nearly null. The interpretation of these findings depends upon whether the inconsistency is due to systematic methodological differences between the published and unpublished studies, to systematic differences between subject populations sampled for each group, or solely to publication status (i.e., the studies with more significant results tended to be published). If there are systematic methodological differences, one should rely more on the conclusions of the group of studies with better methodology; if this group is the published studies, the conclusions about anxiety and avoidance should be reversed, with anxiety having a slightly more detrimental effect on the alliance than avoidance. If the subject groups differ systematically between published and unpublished studies, the findings can be generalized differently to those groups. If the discrepancy is due primarily to publication status, however, one can interpret the results as they are, with the caveat that the anxiety-alliance correlation in

particular may be smaller than reported. Most likely, the true answer lies in some combination of these three possibilities. To what degree the difference in findings is attributable to each may be determined by analysing for mediators and moderators; however, many potential mediators and moderators are not reported in the studies, as discussed above.

Recommendations

Though questions about the nature of the attachment-alliance relation remain, tentative recommendations for practice can be made based on the research as it stands. Clinicians should be aware of the risk to alliance when treating insecurely-attached patients, particularly ones with avoidant attachment styles. Regular measurements of the alliance throughout treatment could be used to aid in its monitoring (Owen & Imel, 2010). Clinicians may also want to consider treating the insecure attachment itself, which may improve outcome both through the alliance and directly, as insecure attachment has been shown in a meta-analysis to predict worse outcome (Levy, Ellison, Scott, & Bernecker, in press). Finally, despite the need for attention to the effect of past relationship experiences on the alliance, it is also important to remember that those experiences do not completely determine the alliance, and that some of the focus must remain on the current relationship between the therapist and client.

This study found relations of both attachment avoidance and anxiety to the alliance that are relatively strong compared to other effects in the psychotherapy research field, indicating the value of continued exploration of these relations. Future research clarifying patient populations to which these findings apply, whether various mediators and moderators are involved in the relation, and the reasons for discrepancies between the relations in published studies and unpublished dissertations will direct the way these findings are applied in clinical practice with the ultimate goal of improving outcome.

References

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Education

- 2007-2010** The Pennsylvania State University, University Park, PA
B.S. in Psychology, Neuroscience Focus, Minor in Biology
Schreyer Honors College
- 2006-2007** Kenyon College, Gambier, OH

Awards and Honors

- 2010** Pennsylvania Psychological Association Undergraduate Research Award
2010 Undergraduate Research Conference Travel Grant
2010 Schreyer Honors College Summer Research Grant
2010 First Place, University Libraries Information Literacy Award
2009-present Member, Psi Chi
2009-present Member, Golden Key International Honour Society
2008 Women in Science and Engineering Research (WISER) Grant
2007-2010 Schreyer Honors College Academic Excellence Scholarship
2006 Kenyon Honor Scholarship
2006 National Merit Scholarship

Research Experience

- May 2010-present** *Laboratory Manager*, Personality, Psychopathology, and Psychotherapy Laboratory, Penn State University; PI: Kenneth N. Levy, Ph.D.
Managing a laboratory that currently maintains nine research assistants and three graduate students. Responsibilities include training research assistants; delegating tasks; setting goals and fostering work ethic; submitting and organizing paperwork pertaining to grants, IRBs, and financial records; and planning conference travel. Currently training to administer diagnostic interviews (the Structured Clinical Interview for DSM-IV Axis I Disorders and the International Personality Disorder Examination) and the Adult Attachment Interview.
- Sept. 2009-present** *Project Coordinator*, Personality, Psychopathology, and Psychotherapy Laboratory, Penn State University; PI: Kenneth N. Levy, Ph.D.
Coordinating project examining the relationship between attachment style and stress reactivity in patients with borderline personality disorder and healthy controls. Responsibilities include administering the Trier Social Stress Test, administering consent and paper measures, collecting saliva samples for measurement of cortisol and alpha amylase, contacting and scheduling subjects, and participating in meetings discussing diagnostic status and reflective function of subjects.

Jan. 2009-present *Research Assistant, Personality, Psychopathology, and Psychotherapy Laboratory, Penn State University; PI: Kenneth N. Levy, Ph.D.*

Involved in multiple grant-funded research projects examining personality disorders and psychotherapy process and outcome. Recent major project involved close collaboration with professor and two graduate students to design and execute multiple meta-analyses on the relationship between attachment style and therapeutic outcome. Responsibilities include coding data from patient records, transcripts of the Adult Attachment Interview, and published studies; critiquing, editing, and preparing manuscripts for publication; collecting EEG and EKG measurements; transcribing Adult Attachment Interviews; adding entries to and preparing reference sections with Endnote; and entering data in SPSS and Excel.

Jan. 2008-Aug. 2008 *Research Assistant, Hedges Evolutionary Biology Laboratory, Penn State University; PI: S. Blair Hedges, Ph.D.*

Pursued self-directed evolutionary biology project examining the phylogeny of *Aristelliger praesignis* geckos. Techniques included amplifying DNA with PCR, preparing DNA for sequencing, analyzing genetic sequences for relationships, measuring morphological traits of specimens, and completing a factor analysis of traits.

Teaching Experience

Fall 2008 *Teaching Assistant, Science Fiction (ENGL 191), Penn State University; Instructor: Sarah Birge, M.A.*

Responsibilities included grading weekly assignments and essay examinations, assessing quality of writing and depth of analysis of literature; providing students with individualized feedback to improve skills for weekly assignments; leading examination review sessions; and managing records of grades and attendance.

Publications

Levy, K. N., Ellison, W. D., Scott, L. N., & **Bernecker, S. L.** (in press). Attachment organization/style. In J. C. Norcross (Ed.), *Psychotherapy relationships that work* (2nd ed.). New York, NY: Oxford University Press.

Levy, K. N., Ellison, W. D., Scott, L. N., & **Bernecker, S. L.** (in press). A meta-analysis of the relation between attachment security and psychotherapy outcomes. *Journal of Clinical Psychology*.

Presentations

Bernecker, S. L. (2010, June). *Relationship Between Patient Attachment and Therapeutic Alliance: A Meta-Analysis*. Poster submitted for presentation at the Annual Convention of the Pennsylvania Psychological Association, Harrisburg, PA.

Bernecker, S. L. (2010, April). *Relationship Between Patient Attachment and Therapeutic Alliance: A Meta-Analysis*. Poster presented at the 2010 Penn State Undergraduate Research Exhibition, University Park, PA.

Scott, L. N., Ellison, W. D., **Bernecker, S. L.**, & Levy, K. N. (2009, November). *A Meta-Analysis of the Relationship Between Attachment Security and Psychotherapy Outcomes*. Poster presented at the Mid-Atlantic Regional Meeting of the Society for Psychotherapy Research, Philadelphia, PA.