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EMPIRICAL PAPER

Therapists' recognition of alliance ruptures as a moderator of change in alliance and symptoms

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Abstract

Therapists' awareness of ruptures in the alliance may determine whether such ruptures will prove beneficial or obstructive to the therapy process. **Objective:** This study investigated the associations between therapists' recognition of these ruptures, and changes in clients' alliance ratings and symptom reports, using time-series data in a naturalistic treatment setting. **Method:** Eighty-four clients treated by 56 therapists completed alliance measures after each session, and the clients also completed symptom measures at the beginning of each session. **Results:** Therapists' recognition of alliance rupture in non-rupture sessions was positively associated with clients' alliance ratings in the next session and this effect was significantly higher when rupture did occur. There was also a significant interaction effect for functioning ratings: Therapists' recognition of alliance ruptures abolished the negative effect of ruptures on clients' symptom ratings in the following session. **Conclusion:** These results highlight the importance of therapists' recognition of deterioration in the alliance for a repair process to take place that may eventually lead to an improved relationship and outcome.

Keywords: alliance; rupture and repair; process-outcome research; therapist processes

The therapeutic alliance has long been considered a powerful predictor of therapy outcomes across treatment modalities and disorders (e.g., Castonguay, Constantino, & Holforth, 2006; Castonguay, Constantino, McAleavey, & Goldfried, 2010; Flückiger, Del Re, Wampold, Symonds, & Horvath, 2012). In recent years there has been a growing interest in clarifying how the alliance develops over the course of treatment, which factors are involved in repairing ruptures, and the role played by the rupture-repair sequence in influencing therapy outcomes (for a review, see Safran, Muran, & Eubanks-Carter, 2011).

Although alliance ruptures have received a great deal of empirical attention in the last 10 years, they are still an emerging area of exploration, and only a few studies have investigated them simultaneously from the point of view of both clients and therapists, session by session, across treatment (Safran et al., 2011). The aim of the present study was to investigate

the interactive effect of ruptures and therapists' recognition of such ruptures on changes in clients' alliance ratings and in clients' functioning subsequent to these ruptures.

Growing evidence suggests that between-therapist differences might have substantial effects on therapy outcomes (Okiishi et al., 2006; Wampold & Brown, 2005). One such difference may be related to the quality of therapists' ability to assess the therapy process. When therapists accurately assess their clients' progress throughout treatment, they can become better attuned to the client's needs from session to session and, if needed, to renegotiate the therapeutic contract (Lambert & Shimokawa, 2011). Strong evidence for this idea comes from findings demonstrating the importance of routine feedback to therapists; as a meta-analytic review of this literature has shown, treatments in which therapists receive session-by-session feedback about their clients'

progress show better outcomes compared to ones without feedback (Knaup, Koesters, Schoefer, Becker, & Puschner, 2009).

Although assessing clients' progress in treatment (in terms of symptoms, alliance, or other factors) is always important, it seems particularly important when therapy is not progressing as expected (Sapyta, Riemer, & Bickman, 2005) or during abrupt and negative shifts (Lambert & Shimokawa, 2011). One such abrupt shift in therapy involves an alliance rupture. A rupture in the therapeutic alliance can be defined as a tension or breakdown in the collaborative relationship between client and therapist (Safran & Muran, 2006). In Bordin's (1979) definition of alliance, rupture consists of tension in one or more of the following components: (i) Agreement about the tasks of therapy, (ii) agreement about the treatment goals, (iii) the client-therapist bond (Safran et al., 2011).

Ruptures are relational events that take place in the interpersonal space between therapists and clients (Safran & Muran, 2006). Ruptures often emerge when therapists unwittingly participate in their clients' maladaptive interpersonal cycles. In such interpersonal cycles, the clients' characteristic expectations influence their perception and/or behavior, and these in turn elicit characteristic responses from others—in this case, from the therapists (Aspland, Llewelyn, Hardy, Barkham, & Stiles, 2008; Safran, Crocker, McMain, & Murray, 1990).

At times, alliance ruptures have been found to be beneficial to the therapeutic process, especially when they are followed by repair of the rupture (Stevens, Muran, Safran, Gorman, & Winston, 2007; Stiles et al., 2004; Waddington, 2002). At other times, ruptures have been found to hinder the process or outcome of therapy (Muran et al., 2009; Safran et al., 2011). One factor that may determine whether ruptures are beneficial or obstructive is the therapist's actions and in particular, the therapist's recognition or lack of recognition that there has been rupture.

An accurate assessment of clients' perception of alliance by the therapist has been theorized to be a critical component of repairing alliance ruptures (Marmarosh & Kivlighan, 2012). When therapists recognize an alliance rupture, they may also become aware of the interpersonal cycle that underlies the rupture, attend to it appropriately, and lay the groundwork for repair of the rupture (which ultimately leads to a better therapeutic process). In contrast, when therapists fail to recognize a rupture, they may unwittingly keep participating in the maladaptive interpersonal cycle, which then can reinforce their clients' maladaptive interpersonal schemas and may lead to a worsening in the therapeutic relationship,

therapeutic outcomes and even dropout (Horvath & Bedi, 2002; Martin, Garske, & Katherine, 2000; Rhodes, Hill, Thompson, & Elliott, 1994).

Over the past two decades, Safran and Muran (1996, 2000, 2002) have systematically explored the rupture-repair sequence to better understand which therapeutic actions best resolve therapeutic ruptures. Their theoretical model has led to explicit clinical recommendations for the handling of ruptures. One basic recommendation is to recognize the rupture as soon as it occurs. Immediate recognition of this sort provides access for both therapists and clients to explore the client's characteristic interpersonal schemas. Often, this helps address or even change these cognitive, affective, and behavioral patterns so that they become more productive (Horvath, 2000).

Interestingly, therapists' recognition of decreases in alliance may or may not correspond to actual decreases in the alliance experienced by the clients. Instances in which therapists mistakenly note deteriorations may prompt them to initiate unnecessary steps to repair the (non-existent) rupture. Though these actions may take time away from other therapeutic tasks, the increased attention to interpersonal processes and the effort to preserve it can still have beneficial outcomes (Marmarosh & Kivlighan, 2012).

To date, most studies on alliance ruptures and their recognition have utilized the task-analysis method (Greenberg, 1984; e.g., Aspland et al., 2008; Bennett, Parry, & Ryle, 2006; Cash, Hardy, Kellett, & Parry, 2014; Safran & Muran, 1996). Using this method, researchers usually select a small number of good- and poor-outcome cases; several sessions from each case are then reviewed by clinical observers to determine whether rupture markers were present, whether the therapist recognized the marker, and whether the therapist took any action to resolve it. Task-analytic studies have supported the importance of therapists' recognition (and to a greater extent, therapists' acknowledgment) of ruptures for repair to take place (Cash et al., 2014).

One strength of task-analytic studies is their ability to capture moment-to-moment processes within a therapy session. However, these studies typically use small samples, and tend to rely on the perspective of outside observers rather than taking the clients' and therapists' own perspectives into account. Observers' ratings run the risk of conflating therapist recognition and action, and make it impossible to segregate the effects of the two.

An alternative approach to examining alliance ruptures makes use of time-series data. This approach defines rupture-repair episodes using patterns in these data by flagging abrupt drops followed by rises in alliance (i.e., a V-shape in the alliance data;

Eubanks-Carter, Gorman, & Muran, 2012) which are considered to be rupture-repair sequences. To date, two studies have shown that the presence of such V-shaped sequences contributes positively to therapy outcomes. Stiles et al. (2004) examined 79 clients in treatment for brief (cognitive-behavioral or psychodynamic-interpersonal) psychotherapy for depression. Strauss et al. (2006) examined 30 clients in cognitive-behavioral therapy for personality disorders. In both studies, clients whose alliance dropped and then rose in the V-shaped pattern had better outcomes at the end of therapy than clients who did not manifest this pattern.

Nevertheless, this association has not always been confirmed. In a study where 44 clients provided session-by-session ratings of alliance, no association was found between rupture-repair sequences and therapy outcome (Stevens et al., 2007). These authors suggested that the absence of an association might have been due to variations in the length of the treatments, since treatment outcome was at times assessed at a considerable temporal remove from the rupture-repair episode.

A meta-analysis of the three studies exploring whether V-shaped alliance patterns are associated with better therapeutic outcomes found a significant but modest correlation between the two, with considerable heterogeneity across studies (Safran et al., 2011). One possible explanation is that these studies did not take into account the therapists' assessment of the alliance and/or the rupture, as ruptures can have profoundly different outcomes when therapists do or do not recognize them.

Research Questions and Hypotheses

The aim of the present study was twofold. The first was to focus on therapists' recognition of ruptures (rather than action they take) and to examine the role of this recognition in facilitating rupture repair. The second was to exploit richer session-by-session data obtained from both parties in the therapeutic relationship and obtain data with closer temporal proximity between rupture episodes and outcome/process variables such as clients' functioning and alliance.

Hypothesis 1a: Therapists' drops in alliance rating (i.e., recognition of alliance rupture) will predict higher clients' alliance ratings in the following session even when a rupture did not occur. This prediction is based on theory (Safran & Muran, 2002) and previous studies (Marmarosh & Kivlighan, 2012).

Hypothesis 1b: Though therapists' drops in alliance rating (i.e., recognition of alliance rupture) are expected to generally predict higher clients' alliance

ratings in the following session, this effect should be stronger when a rupture occurs. This prediction is based on Safran and Muran's theoretical model (1996, 2000, 2002) and with previous findings (i.e., Rhodes et al., 1994). Importantly, the use of session-by-session data derived from both parties should allow us to estimate the immediate effect of therapists' rupture recognition on clients' alliance perception.

Hypothesis 2: Because previous studies exploring the association between rupture occurrence and symptoms (Stevens et al., 2007; Stiles et al., 2004; Strauss et al., 2006) have yielded mixed results (Safran et al., 2011), we cannot necessarily expect an association between rupture occurrence and client functioning. However, we do hypothesize an interactive effect of rupture occurrence and therapist recognition of these ruptures in predicting client functioning. Specifically, after rupture sessions, clients' functioning is expected to be lower in those cases where the therapist did not recognize the rupture.

Method

Participants and Treatment

Clients. All clients were considered eligible to participate in this study as long they had given their signed consent and had undergone at least 10 documented therapy sessions of which at least 5 were consecutive. These criteria corresponded to our analytic strategy of detecting rupture sessions which requires calculating the between-session difference score. Of the 120 clients, 19 (13%) did not agree to be part of this study and were therefore excluded. An additional 17 clients were excluded due to early dropout within the first four sessions ($N = 6$) or because of missing data ($N = 11$). Thus, of the total sample the current study used data from 84 clients, which yielded approximately 1840 sessions available for statistical analysis.

The participants were adults currently in psychotherapy at a major university outpatient clinic. The clients were all over age 18 ($M_{\text{age}} = 40.02$ years, $SD = 14.04$, age range 18–76 years), and the majority were female (68%). In the sample, 44.6% of the clients were single or divorced and 42.5% were married or in a permanent relationship. Forty-nine percent had at least a bachelor's degree and 76.3% were fully or partially employed.

Diagnoses were based on the Axis I Diagnostic and Statistical Manual of Mental Disorders-IV (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association [APA], 2000). The clinician conducting intake was not the same as the one who actually provided the treatment.

After conducting the intake, the intake operators participated in a discussion group that included two

senior clinicians in order to discuss the clients' diagnoses. Final diagnoses were determined by consensual agreement of at least 75% of the team members. Most clients were diagnosed as suffering from affective disorder (44.6%), anxiety disorder (27.7%), obsessive-compulsive disorder (4%) or other diagnoses (4%) as the primary diagnosis. Approximately 20% of the clients reported experiencing relationship problems, academic/occupational stress, or other problems but did not meet the criteria for Axis I diagnosis. It is important to note that the current study did not make use of Axis-II assessment; thus, it is possible that at least some of the clients suffered from comorbid Axis-II diagnosis.

According to pretreatment assessments, the mean score for the (i) Global Assessment of Functioning (GAF) was 65.5 ($SD = 10.9$, range = 41–90), (ii) OQ-45 was 67.05 ($SD = 21.76$), and (iii) BDI 17.88 ($SD = 9.56$). These mean scores indicate mild to moderate symptoms of impairment in psychological, social, and occupational functioning.

Therapists. The clients were assigned to therapists in an ecologically valid manner based on real-world issues such as therapist availability and caseload. The clients were treated by 56 therapists (39 women and 17 men): 34 therapists treated one client each, 19 treated two clients each, and 3 treated between three and five clients each. Of the 56 therapists, 82% were MA or doctoral student trainees in the university's psychology department training program, and 18% were advanced clinical psychology interns with three or four years of experience. Each therapist received 1 hr of individual supervision and 4 hr of group supervision on a weekly basis. All therapy sessions were audiotaped for use in supervision. Supervisors were senior clinicians. Individual and group supervision focused heavily on the review of audiotaped, case material and technical interventions designed to facilitate the appropriate use of therapists' interventions. Examination of treatment vignettes was structured to provide specific and direct feedback to supervisees. The supervisors often invited the trainees to explore the clients' as well as their own experiences.

Individual psychotherapy consisted of once or twice weekly sessions of mostly psychodynamic psychotherapy organized, aided, and informed (but not prescribed) by a short-term psychodynamic psychotherapy treatment model (Blagys & Hilsenroth, 2000; Shedler, 2010). The key features of this model include (i) a focus on affect and the experience and expression of emotions, (ii) exploration of attempts to avoid distressing thoughts and feelings, (iii) identification of recurring themes and patterns, (iv) emphasis on past experiences, (v) focus on interpersonal experiences, (vi) emphasis on the therapeutic

relationship, and (vii) exploration of wishes, dreams or fantasies (Shedler, 2010). Given that psychotherapy was provided by clinical trainees at a university-based outpatient community clinic, these treatments were often limited to nine months up to one year, which yielded mean treatment length of 22.7 sessions ($SD = 9.1$, range = 4–49).

Assessment measures. *Bern Post Session Reports (BPSR-P/T).* At the end of each session the BPSR (Flückiger, Regli, Zwahlen, Hostettler, & Caspar, 2010) was administered to both clients and therapists. The BPSR was designed to analyze the process of changes as reported by clients and their therapists after each session. As the focus of this study was alliance ruptures we used the Global Alliance subscale, which has four items in the client version ("The relationship with my therapist felt comfortable today," "My therapist and I are getting along well," "I think my therapist is genuinely concerned about my wellbeing," and "I feel that the therapist has real appreciation for me") and three items in the therapist version ("The relationship with my patient felt comfortable today," "My patient and I are getting along well," and "My patient and I are collaborating on the same goals"). All items were rated on a 7-point Likert scale ranging from -3 ("not at all") to 3 ("yes, exactly").

The BPSR-P/T has been validated and used in several previous studies (e.g., Atzil-Slonim et al., 2015; Flückiger, Grosse Holtforth, Znoj, Caspar, & Wampold, 2013; Lutz et al., 2013) and found (Atzil-Slonim et al., 2015) to be correlated with the *Revised Helping Alliance Questionnaire (HAQ-II; Luborsky et al., 1996)*. For the current sample, the between- and within-person reliabilities for the scale were computed using procedures outlined by Cranford et al. (2006) for estimating reliabilities for repeated within-person measures, and the reliability levels were considered high in the current study for clients ($R_C = 0.81$, $R_{KF} = 0.98$) and for therapists ($R_C = 0.82$, $R_{KF} = 0.99$).

Outcome Rating Scale (ORS). At the beginning of each session the ORS (Miller, Duncan, Sparks, & Claud, 2003) was administered to clients. The ORS is a 4-item visual analog scale developed as a brief alternative to the OQ-45. Both scales are designed to assess change in three areas of client functioning that are widely considered to be valid indicators of progress in treatment: Individual (or symptomatic) functioning, interpersonal relationships, and social role performance. Respondents fill in the ORS by marking agreement with four statements on a visual analog scale anchored at one end by the word Low and at the other end by the word High. This yields four separate scores between 0 and 10 using a centimeter for scale measurement. These four scores sum

into one score ranging from 0 to 40, where higher scores indicate better functioning.

The between—and within-person reliabilities for the scale were computed using procedures outlined by Cranford et al. (2006) for estimating reliabilities for repeated within-person measures, which in the current study were high ($R_C = 0.90$, $R_{KF} = 0.96$).

Analytic strategy. Ruptures were defined as follows. First, for each client, we calculated the mean squared successive difference (MSSD) score in alliance ratings across the entire treatment period. Second, using the square root of the MSSD as a unit of fluctuation in the original scale of the alliance ratings, we identified as rupture sessions all sessions whose ratings were lower than the average of the three preceding sessions by 1.65 units. The comparison to the average of the preceding three sessions (rather than just the previous session) ensured that a session would not be identified as a rupture session simply because the previous one had an increase in alliance. This criterion meant concretely that rupture sessions could only be identified from the fourth session onwards. Using this method, 58 (3.2%) sessions were identified as rupture sessions.

Recently, Eubanks-Carter et al. (2012) reviewed different approaches for identifying alliance rupture in time-series data. They concluded that it might be beneficial to use the mean and *SD* of clients' alliance ratings to identify ruptures in such datasets (i.e., the Shewhart chart method). We modified this approach slightly by using MSSD that makes it possible to assess alliance deterioration above and beyond clients' inherent alliance fluctuations (e.g., Houben, Noortgate, & Kuppens, 2015). Research has shown that clients can have different alliance patterns (Stiles et al., 2004; Strauss et al., 2006) and different alliance fluctuation patterns within them (Weiss, Kivity, & Huppert, 2014). The method of detecting alliance ruptures implemented here was sensitive to between-session fluctuations in alliance rather than drops in alliance ratings compared to the mean. This may have had implications when trying to

assess rupture instead of a rupture-repair sequence. For example if a client exhibits a steady alliance pattern and then experiences a rupture followed by slow increase, this session might not be scored as a rupture session although it has all the hallmarks of a rupture. For example, the client in Figure 1 shows alliance development with no ruptures in terms of the *M* and *SD* ($M = 3.5$, $SD = 0.43$), but one rupture emerges when assessment is based on the square root of MSSD (square root of MSSD = 0.31).

To test whether the negative effects of alliance ruptures were mitigated by the therapists' recognition of these ruptures, we used the session-to-session delta of the therapists' alliance ratings as an index of therapist recognition. This index served to estimate the association between therapist recognition and client alliance ratings as they unfolded over time. The delta score was calculated as the therapist's alliance rating in session $s-1$ minus his or her rating in session s ; thus, a positive value indicated higher recognition by the therapist.

Because the data had a hierarchical structure (sessions nested within clients), we used SAS PROC MIXED to estimate a multilevel model to test the predictions. We opted for a 2-level MLM (sessions nested within therapeutic dyads) and not a 3-level MLM (sessions nested within clients nested within therapists) because the 3-level unconditional model estimated the level-3 random effects of alliance and symptoms to be zero; this is consistent with the fact that in the sample most of the therapists (63%) treated only one client, and most of the others (32%) treated only two clients.

Results

First, we tested whether therapists' drops in alliance rating generally predicted higher clients' alliance rating in the following session, and whether this effect was stronger when a rupture occurred.

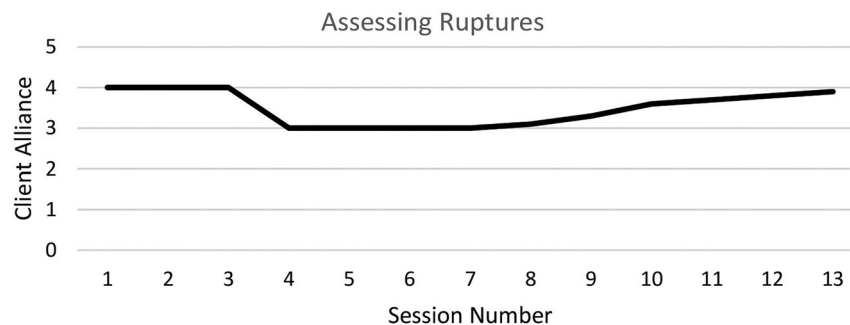


Figure 1. Example of client X's alliance data.

Specifically, the following 2-level model was estimated:

$$\begin{aligned} \text{Level 1: Client's alliance}_{si} = & \\ & \beta_{0i} + \beta_{1i} * \text{Rupture}_{(s-1)i} + \beta_{2i} * \Delta \text{Therapist's alliance}_{(s-1)i} \\ & + \beta_{3i} * \text{Rupture}_{(s-1)i} * \Delta \text{Therapist's alliance}_{(s-1)i} \\ & + \beta_{4i} * \text{Client's alliance}_{(s-1)i} + e_{si} \end{aligned}$$

$$\begin{aligned} \text{Level 2: } \beta_{0i} = \gamma_{00} + u_{0i}; \quad \beta_{1i} = \gamma_{10}; \quad \beta_{2i} = \gamma_{20}; \\ \beta_{3i} = \gamma_{30}; \quad \beta_{4i} = \gamma_{40}. \end{aligned}$$

The level-1 equation modeled the reported alliance of client *i* in session *s* as a function of (i) the client's intercept, (ii) the occurrence of rupture in the previous session (coded as a binary variable), (iii) the change in the therapist's reported alliance prior to the previous session (i.e., the recognition index), (iv) the interaction between rupture occurrence and the recognition index, (v) the client's own report of alliance in the previous session, and finally, (vi) a level-1 residual term. Importantly, the inclusion of the client's reported alliance in the previous session was used to treat the outcome as a change score. At level 2, the intercept of each client (i.e., β_{0i}) was modeled as a function of both the fixed effect (i.e., the sample's intercept) and this client's random effect (i.e., the deviation of the client's intercept from the sample's intercept). The other four estimates were modeled only as fixed effects, since inclusion of random estimates did not improve the model fit ($\chi^2[4] = 3.7, n.s.$).

The MLM results are shown in Table I. We found a positive association between lagged rupture and alliance level: On average, following rupture sessions, alliance ratings were higher compared to the rupture session. However, the therapists' recognition index significantly moderated this main effect. To further examine the interaction, we estimated the simple slopes using Preacher, Curran, and Bauer's (2006) computational tool for probing interaction effects in MLM analyses (see Figure 2). As predicted following non-rupture sessions, the therapists' recognition index (alliance deterioration) evidenced a significant slope ($b = -0.04, SE = 0.01, p < .01$) but this effect was much higher following a rupture session ($b = -0.25, SE = 0.06, p < .001$). To further examine the findings, we contrasted alliance levels following a rupture against non-rupture sessions and found no significant difference between the two when the therapists' recognition index was low (estimate difference: $b = 0.16, SE = 0.13, n.s.$) but obtained a significant difference between the two when the therapists' recognition index was high (estimate difference: $b = 0.63, SE = 0.10, p < .001$).

Table I. Multilevel model predicting clients' alliance.

Parameter estimates	Estimate (SE)	Effect size
Fixed effects		
Intercept (γ_{00})	3.63 (0.19)***	
Lagged rupture (γ_{10})	0.40 (0.1)***	1.33%
Lagged therapist's alliance delta (γ_{20})	0.04 (0.01)**	0.9%
Lagged interaction (γ_{30})	0.21 (0.06)***	1%
Lagged client's alliance (γ_{40})	0.41 (0.03)***	17%
Random effects		
Level 1 (sessions)		
Residual	0.29 (0.01)***	
Level 2 (clients)		
Intercept	0.20 (0.04)***	
Model summary		
-2 Log L	2406.4	
# Estimated parameters	7	

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Note. Effect sizes were calculated as semi-partial R^2 (Edwards, Muller, Wolfinger, Qaqish, & Schabenberger, 2008).

To estimate the global explained variance in our model, we calculated the correlation between the predicted and observed alliance ratings which accounted for 67% of the explained variance (Peugh, 2010; Singer & Willett, 2003).

Next, we tested the association between alliance ruptures (in session *s-1*) and the clients' functioning assessment in the following session (session *s*), and whether this association was moderated by the therapists' recognition of the rupture. Specifically, the following 2-level model was estimated:

$$\begin{aligned} \text{Level 1: Client's functioning}_{si} & \\ = \beta_{0i} + \beta_{1i} * \text{Rupture}_{(s-1)i} & \\ + \beta_{2i} * \Delta \text{Therapist's alliance}_{(s-1)i} & \\ + \beta_{3i} * \text{Rupture}_{(s-1)i} * \Delta \text{Therapist's alliance}_{(s-1)i} & \\ + \beta_{4i} * \text{Client's functioning}_{(s-1)i} + e_{si} & \end{aligned}$$

$$\begin{aligned} \text{Level 2: } \beta_{0i} = \gamma_{00} + u_{0i}; \quad \beta_{1i} = \gamma_{10}; \\ \beta_{2i} = \gamma_{20} + u_{2i}; \quad \beta_{3i} = \gamma_{30}; \quad \beta_{4i} = \gamma_{40} + u_{4i}. \end{aligned}$$

The level-1 equation modeled the reported functioning of client *i* in session *s* as a function of (i) the client's intercept, (ii) the occurrence of rupture in the previous session (coded as a binary variable), (iii) the change in the therapist's reported alliance prior to the previous session (i.e., the recognition index), (iv) the interaction between the rupture occurrence and the recognition index, (v) the client's own report of functioning in the previous session, and finally (vi) a level-1 residual term. Again, as in the alliance model, the inclusion of the

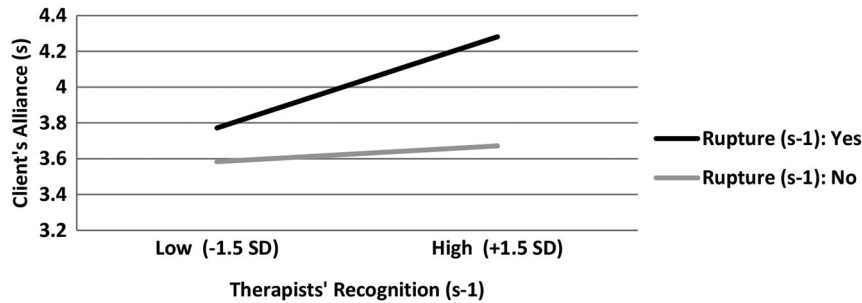


Figure 2. Clients' alliance ratings as a function of lagged therapist recognition of ruptures, as well as actual rupture occurrence.

Table II. Multilevel model predicting clients' functioning.

Parameter estimates	Estimate (SE)	Effect size
Fixed effects		
Intercept (γ_{00})	13.47 (0.72)***	
Lagged rupture (γ_{10})	-1.03 (0.68)	
Lagged therapist's alliance delta (γ_{20})	-0.07 (0.15)	
Lagged interaction (γ_{30})	1.10 (0.47)*	0.45%
Lagged client's functioning (γ_{40})	0.44 (0.02)***	59%
Random effects		
Level 1 (sessions)		
Residual	18.17 (0.76)***	
Level 2 (clients)		
Intercept	13.55 (3.34)***	
Lagged therapist's alliance delta	0.64 (0.28)*	
Lagged client's functioning	0.06 (0.00)*	
Model summary		
-2 Log L	7972	
# Estimated parameters	9	

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Note. Effect sizes were calculated as semi-partial R^2 (Edwards et al., 2008).

client's reported functioning in the previous session was used to treat the outcome as a change score. At level 2, the intercept, therapist delta, and the lagged functioning of each client (i.e., β_{0is} , β_{2is} , β_{4i}) were modeled as a function of both the fixed effect (i.e., the sample's intercept/slope) and this client's

random effect (i.e., the deviation of the client's intercept/slope from the sample's intercept/slope). The other two estimates were modeled only as fixed effects, since inclusion of random estimates did not improve the model fit ($\chi^2[2] = 1, n.s.$).

The MLM results are shown in Table II. As expected, we found a significant interaction between the therapists' recognition index and the lagged ruptures. We probed this interaction as we did in the first MLM model to predict alliance levels (see Figure 3). As predicted, when following non-rupture sessions, the therapists' recognition index evidenced no significant slope ($b = 0.07, SE = 0.15, n.s.$), but after rupture sessions this slope was positive and significant ($b = 1.02, SE = 0.11, p < .001$). To further examine these findings, we contrasted clients' functioning levels after rupture with non-rupture sessions and found a significant difference between the two when the therapists' recognition index was low (estimate difference: $b = -2.27, SE = 1, p < .05$) but obtained no significant difference when the therapists' recognition index was high (estimate difference: $b = 0.19, SE = 0.69, n.s.$). In other words, when therapists recognized a rupture, clients' functioning levels were unaffected by a rupture in the previous session, but when therapists did not recognize the rupture in the previous session clients' functioning was significantly lower.

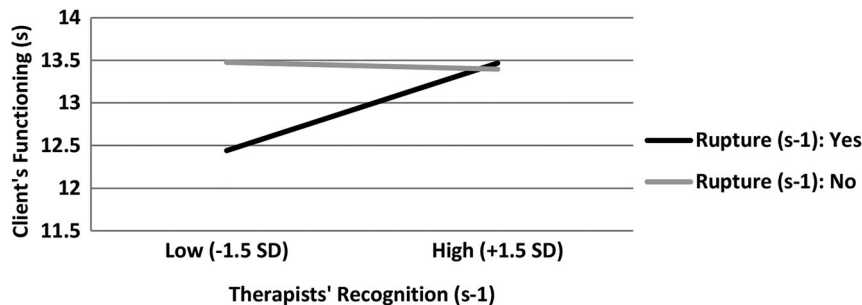


Figure 3. Clients' functioning as a function of lagged therapist recognition of ruptures, as well as actual rupture occurrence (higher functioning scores represent better functioning).

To estimate the global explained variance in our model, we calculated the correlation between the predicted and observed symptom ratings, which accounted for 90% of the explained variance (Peugh, 2010; Singer & Willett, 2003).

Discussion

The present study examined the association between therapists' recognition of alliance ruptures on the one hand, and changes in clients' alliance ratings and functioning reports subsequent to ruptures on the other, using time-series data collected in a naturalistic treatment setting. This study extends previous work on therapist detection of ruptures by including session-by-session alliance ratings provided by both clients and therapists. Such rich data make it possible to track fluctuations in alliance perceptions, and to examine their immediate effects on the therapeutic relationship.

As expected (Hypotheses 1), we found a significant interaction between ruptures and therapists' recognition of these ruptures in predicting clients' alliance rating in the following session. Specifically, therapists' perception of a decrease in the alliance predicted increases in the clients' perception of the alliance in the following session; this effect was stronger when the client also indicated a significant decrease in the alliance (i.e., when the session was marked by a client-experienced rupture).

These findings support the conclusions of earlier theoretical and empirical work highlighting the importance of therapist detection of abrupt negative shifts in treatment (Lambert & Shimokawa, 2011; Sapyta et al., 2005). Specifically, when ruptures occur, therapists who recognize them have a chance to promote a repair process (Horvath, 2000; Rhodes et al., 1994; Safran & Muran, 2002). This repair then becomes evident in improved (client-rated) alliance in subsequent sessions.

The findings also suggest the presence of a main effect for therapist recognition: Therapists' perceptions of decreases in the alliance were associated with increased client alliance in the next session even when no actual rupture occurred. This finding coheres with Marmarosh and Kivlighan's (2012) theoretical assertion that addressing potential ruptures (i.e., even ones that did not occur) might be beneficial to the therapeutic relationship since it allows the therapist to attune better to the client and work on the therapeutic relationship.

Interestingly, we also found a positive main effect for the ruptures themselves on subsequent client alliance ratings: Specifically, clients' alliance ratings were more likely to rise after rupture sessions than

after non-rupture sessions. This suggests that for most clients, ruptures were characterized by a V-shaped pattern of the alliance, with some (though not necessarily full) repair following the rupture.

This finding might be artifactual, and reflect regression to the mean; that is, after an extreme evaluation, there is a greater likelihood for more moderate evaluations or simply an effect of time that helps soothe the tension. Nevertheless, if replicated, this finding may also have clinical implications. For example, therapists may want to consider waiting with the exploration and interpretation of the rupture until the following session when the alliance has somewhat re-stabilized and the client is more collaborative with the therapist.

With regards to client functioning as an outcome (Hypothesis 2), we again found, as hypothesized, a significant interactive effect of ruptures and therapist recognition of these ruptures. Specifically, rupture episodes were tied to decreases in clients' reports of functioning in the subsequent session in cases when the therapist did not recognize the rupture, but were unrelated to clients' subsequent functioning when therapists did recognize the rupture. These findings echo theorists who have highlighted the importance of rupture recognition for treatment outcomes (e.g., Safran & Muran, 1996, 2002). These authors have argued that ruptures should be seen as enactments of clients' maladaptive interpersonal cycles, in which the client's behaviors are met with characteristic responses from others which lead to various negative effects. It would seem when therapists recognize such a rupture, they act differently (e.g., dampening their own responses so that the negatively does not escalate, and/or exploring the maladaptive interpersonal cycle which underlies the rupture), thus enabling a corrective experience (Aspland et al., 2008); these acts attenuate or eliminate the negative effects of the rupture.

We did not expect to find main effects of either client reports of rupture or therapist recognition of such ruptures in predicting functioning, and no such effects were found. In fact, the literature exploring the association between the rupture-repair sequence and client functioning (i.e., symptomatic change) has yielded mixed results to date. This state of affairs may be due to the use of divergent definitions of ruptures, variations in the length of different treatments, and the fact that treatment outcome is usually assessed at a considerable temporal remove from the rupture-repair episode (Safran et al., 2011). Two studies (e.g., Stiles et al., 2004; Strauss et al., 2006) found significant positive effects for rupture occurrence on therapy outcome, but a third study (Stevens et al., 2007) did not.

The current study contributes to this relatively sparse literature, and is the first to examine this association on a session-by-session basis, using both the clients' and therapists' assessment of the alliance. Our finding that recognized ruptures do not predict changes in functioning, but that unrecognized ruptures predict decreases in functioning merits some further attention. It could be the case that measuring the clients' functioning in the session following rupture leaves insufficient time for therapists and clients to work on changing the clients' cognitive, affective, and behavioral interpersonal patterns (Horvath, 2000), and thus achieve a better therapeutic outcome.

As Eubanks-Carter et al. (2012) argued, this issue should be studied further with other methodologies to better clarify these connections. Future studies assessing the effects of ruptures on treatment outcomes might consider taking the therapist's recognition/action into account both during and immediately after the rupture as moderators of the association between rupture occurrence and therapy outcome.

Altogether, the findings from this study highlight the importance of therapist's recognition of ruptures. By recognizing the occurrence of ruptures, therapists may be better able to accommodate their responses and actions to their clients' needs, which eventually leads to a better alliance and to better treatment outcomes. These findings are also congruent with the growing evidence that feedback provided to (or collected by) the therapist regarding changes in the client's level of alliance may be a powerful tool in enhancing psychotherapy processes and outcomes (Lambert & Shimokawa, 2011; Miller, Duncan, Brown, Sorrell, & Chalk, 2006; Reese, Norsworthy, & Rowlands, 2009).

Several limitations of this study should nevertheless be noted. First, this study was designed as a naturalistic field exploration. Although the internal validity of such a design is more limited, it has an advantage in terms of external validity since it more accurately reflects the reality of clinical work with clients in public clinics (Ablon, Levy, & Katzenstein, 2006; Bond & Perry, 2004).

Second, the reliance on trainee therapists may limit the generalizability of the findings to therapies implemented by more experienced clinicians. Trainee therapists may rely on their supervisors to understand the clients' alliance experience and thus be more aware of the occurrence of ruptures. Alternatively, experienced therapists may be more equipped to identify ruptures when they occur. Future studies should explore the differences between trainee and experienced therapists with regarding to recognition of ruptures. Adding that, the data structure did not

allow us to estimate therapist-level variance or therapists' characteristics, which might influence their ability to recognize ruptures. Future research should consider assessing therapists' characteristics that could affect their recognition of a rupture as well as the steps they take to resolve it.

Additionally, the current study did not assess any axis-II diagnoses. Since previous studies have indicated that clients with personality disorders experience more shifts in the alliance (e.g., Levy, Beeney, Wasserman, & Clarkin, 2010), the recognition of these shifts by their therapists may differ from clients without personality disorders. Given the importance of the emergence of alliance rupture and its resolution for clients diagnosed with personality disorders (e.g., Coutinho, Ribeiro, Fernandes, Sousa, & Safran, 2014; Coutinho, Ribeiro, Hill, & Safran, 2011), future studies may benefit from comparing clients with and without personality disorders with regard to their therapists' ability to recognize ruptures in the therapeutic alliance and the effect of recognition on therapy processes and outcomes.

Another possible limitation of this study was that alliance was indexed using the global alliance subscale of the BPSR (Flückiger et al., 2010). Though this scale does cohere quite closely with Bordin's (1979) *bond* concept, and was found to be correlated with the Revised Helping Alliance Questionnaire (HAQ-II; Luborsky et al., 1996), future studies may benefit from examining recognition of alliance ruptures using more detailed measures which include other facets of the therapeutic alliance (namely, *tasks* and *goals*). At the same time, the BPSR used here has the advantage of being brief and therefore more appropriate for repeated session-by-session administration.

Additionally, ruptures were studied at a relatively low time resolution (once each session, typically weekly), whereas previous studies have reported that rupture may occur at a much higher time resolution within the therapeutic session (Coutinho, Ribeiro, Sousa, & Safran, 2014). Future studies should consider using within-session assessment tools that detect ruptures moment-by-moment during a session such as the Rupture Resolution Rating System (3RS; Eubanks-Carter, Muran, & Safran, 2009) to afford a richer examination of therapists' recognition of alliance rupture and its association with treatment outcome. Still, it is important to note that our approach of using 1.65 MSSD to identify ruptures relates to relatively extreme fluctuations in the alliance and thus may represent less nuanced breakdowns in the therapeutic relationship which may call for a greater need for therapists' recognition.

These limitations notwithstanding, the present study extends the examination of rupture and repair

episodes by investigating multiple rupture occurrences within multiple therapeutic dyads. It also innovates by examining the proximal effect of ruptures on clients' alliance and functioning ratings. We believe that these findings reflect the importance of therapists' recognition of a deterioration in the alliance as a way to explore and process ruptures which may eventually lead to improved relationships and outcomes.

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