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Reciprocal Influence Model of Working Alliance and Therapeutic Outcome over Individual
Therapy Course

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We would like to express our gratitude to Rebecca Reining, Deborah Swanson Hall, and other staff at the Counselor Training Center of ASU for their valuable work at collecting and managing data. Correspondence should be addressed to Hui Xu, Counseling & Counseling Psychology, MC-0811, Arizona State University, Tempe, AZ, 85287-0811 (huiXu5@asu.edu).

March 23, 2015

Abstract

A reciprocal influence model of the working alliance and the therapeutic outcome was examined in a sample of clients (n=638) seen by novice therapists. Past research has found a relation between the working alliance and symptom improvement and this relation has been interpreted as the alliance leading to such symptom change. The current study was an examination of whether the alliance does indeed lead to symptom change, or whether symptom change leads to subsequent alliance change, or whether each is related to the other in a reciprocal manner over time. By modeling the longitudinal development of the working alliance and the symptomatic severity over the individual therapy course, this study found support for the reciprocal model being superior to the unidirectional models. The ideas of *relationship-as-strategy* and *relationship-as-outcome* along with the reciprocal pattern revealed in the findings were discussed with respect to the theoretical and clinical implications. The limitations and suggestions for future research were also provided.

Key words: Working alliance, Therapeutic outcome, Reciprocal model, Individual therapy

Reciprocal Influence Model of Working Alliance and Therapeutic Outcome over Individual Therapy Course

The working alliance has drawn a good deal of attention in the therapy process and outcome literature (Horvath, Del Re, Flückiger, & Symonds, 2011; Lambert & Barley, 2001). While the previous research has consistently demonstrated the prediction of the working alliance on the therapeutic outcome (Horvath et al., 2011; Lambert & Barley, 2001), the mechanism of this effect is continuously being questioned and investigated (e.g., Falkenström, Granström, & Holmqvist, 2014; Tasca & Lampard, 2012). Norcross and Lambert (2014) commented that psychotherapy professionals could oversimplify the nature of therapy and exaggerate the impact of the working alliance when only seeing the prominent legacy of the unidirectional alliance-outcome research. Therefore, how the working alliance and the therapeutic outcome dynamically impact each other in the progressive therapy course is a critical area for a better understanding of the clinical meaning of alliance. The focus of the current study was to examine a reciprocal influence model of the working alliance and the therapeutic outcome as indicated by symptomatic change over the course of individual therapy.

Reciprocal Model of Working Alliance and Therapeutic Outcome

The centrality of therapeutic relationship in psychotherapy has been articulated in many therapy approaches, such as the psychodynamic orientation and the humanistic-existential orientation. While the evidence-supported treatment model emphasizes specific content ingredients such as cognitive reconstruction, the common factor model emphasizes the relational factors and process ingredients common to all therapy approaches, such as the therapeutic relationship and the expectation to change (Wampold, 2001). The therapeutic

relationship has been conceptualized by Gelso and his colleagues (Gelso & Carter, 1994; Gelso & Samstag, 2008) as a tripartite model consisting of the working alliance, the transference, and the real relationship. While all three components were proposed to be interwoven and indistinguishable in sessions (Gelso & Carter, 1994; Gelso & Samstag, 2008), the working alliance which emphasizes the working aspect of therapy has drawn the greatest attention regarding its clinical meaning (Gelso & Samstag, 2008).

The extensive literature of the working alliance largely rests on Bordin (1979)'s pan-theoretical definition of the working alliance, which describes the collaborative agreements between therapist and client on three constituent components: task, goal, and bond (Horvath et al., 2011; Martin, Garske, & Davis, 2000). While different definitions of the working alliance exist, those three components are acknowledged consistently (Martin et al., 2000). Among them, task describes the therapeutic activities engaged in the session, goal describes the therapeutic goals made for the process, and bond describes the emotional connection the therapeutic dyad establishes. As the working alliance captures the collaborative element of the therapeutic relationship, this construct has been conceived to reflect the quality of the therapeutic contract negotiated by both therapist and client, which is needed to achieve therapeutic goals (Bordin, 1994; Horvath & Symonds, 1991; Horvath et al., 2011). The logic of the working alliance predicting therapeutic outcome appears to be self-evident in that a better working alliance could lead to a more efficient therapeutic process, which naturally leads to symptomatic change and a better outcome. If mutual agreements or understandings are not successfully established in the therapeutic dyad, therapist and client are less likely to work in a concerted way, which could result in poor outcomes or premature termination.

The literature examining the effect of the working alliance on the therapeutic outcome (i.e., *relationship as a strategy* in achieving outcome) is strong and consistent. Frank and

Gunderson (1990) found that clients with good alliances with their therapists were significantly more likely to remain in psychotherapy and achieve better outcomes than clients who did not. Tryon and Kane (1990) demonstrated that clients who terminated prematurely reported significantly lower alliance ratings than clients who did not. More powerfully, several meta-analyses have consistently revealed that the working alliance predicts the therapeutic outcome (Horvath & Symonds, 1991; Horvath et al., 2011; Lambert & Barley, 2001). Although the relationship of the early working alliance with the later therapeutic outcome has been convincingly revealed, the mechanism of this association is still unclear as to how the working alliance contributes to the therapeutic outcome. More critically, the importance of the working alliance could be exaggerated, as suggested by Norcross and Lambert (2014), without looking at the predictions from the therapeutic outcome to the subsequent working alliance.

While the working alliance affects the subsequent therapeutic outcome as argued before, prior symptomatic severity could affect the working alliance as well, as argued by Barber (2009) and DeRubeis, Brotman and Gibbons (2005). For example, Barber, Connolly, Crits-Christoph, Gladis, and Siqueland (2009) found that early symptom change was associated with greater subsequent alliance. Thus, the working alliance could be reinforced or dampened by the symptom change. While a good therapy outcome, as indicated by symptom improvement over time, could bolster the mutual trust and understanding and undergird the working alliance, an unsatisfactory therapy outcome could shake the foundation of the working alliance and result in mistrust and divergent opinions about therapy tasks and the goals. This second effect of symptom change affecting the alliance can be viewed as a *relationship as outcome* model.

There has been research investigating the prediction of the therapeutic outcome on the working alliance. Tasca and Lampard (2012) investigated the relation of the alliance to the

group with the therapeutic outcome indicated by urge to restrict food intake, based on the eating disorder clients in an intense day program. They found that prior change in urge to restrict food intake predicted the subsequent change in alliance to the group, based on weekly assessment of both constructs. Falkenström et al. (2014) examined the prediction of the prior symptom changes up to session three on the working alliance at the third session. Results supported that the prior symptom changes predicted the working alliance over and beyond the initial symptoms. A recent study by Zilcha-Mano, Dinger, McCarthy, and Barber (2014) examined the mutual effect of the alliance and depression improvement in four sessions of treatment in a sample of depressives and found that there was a reciprocal effect between alliance change over time and depression improvement over time. All these data portrayed the working alliance as not only a factor that facilitates the therapeutic change, but an indicator that reflects the therapeutic outcome as well. Therefore, a longitudinal reciprocal influence model of the working alliance and the therapeutic outcome is plausible.

While the *relationship-as-strategy* model and the *relationship-as-outcome* model both depicts an important aspect of the dynamic role of alliance in psychotherapy, a reciprocal model embracing both models as integrated parts is expected to delineate the alliance-outcome interaction more accurately on the conceptual level. Moreover, this reciprocal model could serve as a better foundation to examine both effects as one effect is controlled when the other one is examined. Given the question around the causal status of the working alliance (Barber, 2009; Zilcha-Mano et al., 2014), it is imperative to investigate the relation of the working alliance with the symptom change over time.

There have been a limited number of studies examining the link of alliance-symptom change while taking into consideration the temporal sequence (Barber, 2009; Falkenström et al., 2014; Zilcha-Mano et al., 2014). However, the previous longitudinal reciprocal research (e.g., Falkenström et al., 2014) investigating the effect of the working alliance typically

adopted a single alliance rating at the third session. Such an approach fails to recognize the change of the working alliance over time (Kivlighan & Shaughnessy, 2000; Kivlighan & Shaughnessy, 1995; Stiles et al., 2004) and ignores the enhancement of the working alliance-outcome link over time (Flückiger, Del Re, Wampold, Symonds, & Horvath, 2012; Martin et al., 2000). An examination exploring the reciprocal effects of the fluid working alliance and the fluid therapeutic outcome across the therapy course is thus needed.

Zilcha-Mano et al.'s (2014) examination expanded the time focus to only four time spots and it was restricted solely to treatment of depression. In the Tasca and Lampard (2012) study, the alliance in this study was based on group experiences in an intense day program and thus the results did not necessarily apply to individual therapy in other settings. The current study is intended to extend the previous research by examining the reciprocal effects of the working alliance and the therapeutic outcome as indicated by broad symptomatic change over a more expansive treatment time in individual psychotherapy.

Research Hypotheses

We hypothesized that changes in the working alliance and symptomology would be related to each other over time. Specifically, we had a series of hypotheses of increasing specificity relating to this relation.

Hypothesis 1: The overall trend in changes in the working alliance and symptomology will be negatively related with increases in the working alliance being associated with decreasing symptomology.

Hypothesis 2: In keeping with the existing model, we hypothesize that when account is taken of specific session by session changes that:

- (a) The working alliance will be associated with changes in subsequent symptomology (unidirectional effects of alliance-symptomology),

- (b) That symptomology will be associated with changes in subsequent levels of the working alliance (unidirectional effects of symptomology-alliance), and
- (c) The working alliance and symptomology will demonstrate reciprocal effects on each other in subsequent session (reciprocal effects between alliance and symptomology).

Our primary hypothesis is that the reciprocal relations will best account for the relations of the alliance and symptomology over time.

Method

Sample

The sample consisted of 638 community clients seen in a training clinic housed in a southwest state university. Among the sample, 21 (3.3%) reported the age as 18, 208 (32.6%) reported the age as 19-25, 191 (29.9%) reported the age as 26-35, 133 (20.8%) reported the age as 36-49, and 55 (8.6%) reported the age as 50+. Of the sample, 290 (45.5%) were self-identified as female, 306 (48.0%) were self-identified as male, and 6 (0.9%) were self-identified as other. In terms of ethnicity, 420 (65.8%) were Caucasian, 20 (3.1%) were African American, 14 (2.2%) were Native American, 78 (12.2%) were Hispanic, 31 (4.9%) were Asian/Pacific Islander, and 27 (4.2%) chose other.

There were a variety of presenting issues, including interpersonal difficulties, career decision making, anxiety and depression, and relationship and family concerns. The intake Outcome Questionnaire-45 had a mean of 73.02 ($SD=24.32$), indicating that in terms of the symptom severity this sample was close to a normative sample of university counseling center clients (Lambert et al., 1996). Therapists were 191 master or doctoral students in their first or second semester of practicum training, who averagely saw 3.34 clients ($SD = 2.42$) in the sample. These students were from a CACREP master program or a counseling psychology doctoral program. The session length ranged from 3 to 14 with an average of 9.11 ($SD = 3.31$).

Instruments

The Working Alliance Inventory-Shortened Version (WAI-Sh). The WAI-Sh (Tracey & Kokotovic, 1989) is a 12-item self-report measure of the working alliance with three subscales (tasks, goals, and bond). It was derived from the original 36-item version WAI (Horvath & Greenberg, 1989) by choosing four items with the highest factor loadings on each subscale. Clients responded to the client version of this measurement on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The alpha coefficients ranged from .90 to .92 for the three subscales and .98 for the total scale (Tracey & Kokotovic, 1989). The current study revealed alpha coefficients ranging from .86 to .96 for the total scale across sessions. The summed total score was used to indicate the global working alliance level.

Outcome Questionnaire-10.2 (OQ-10.2). The OQ-10.2 (Lambert et al., 1998) consists of 10 items designed to track client progress during the psychotherapy process. It measures the therapeutic outcome in terms of symptomatic change in two domains: psychological well-being (5 items) and psychological distress (5 items) (Seelert, Hill, Rigdon, & Schwenzfeier, 1999). The OQ-10.2 selected items from the original OQ-45.2 (Lambert et al., 1996) based on their ability to screen clients with clinical mental health issues from the general community members. Items were rated on a 5-point Likert scale, ranging from 0 (never) to 4 (almost always) with higher scores indicating higher symptomatic distress levels. The reliability of this instrument have been supported via an internal consistency alpha of .88 (Seelert et al., 1999) and a test-retest reliability of .62 (Lambert, Finch, Okiishi, & Burlingame, 2005) for the total scale. The validity of this instrument has been supported via significant associations with physical health, social health, self-esteem, and anxiety/depression (Seelert et al., 1999). The current study revealed alpha coefficients of .88 to .92 for the total scale across sessions.

Procedures

Clients coming to the training center were asked if they would agree to participate in a research project on the therapy process. Consenting clients (76.03% of those over 18 who were seen at the clinic) completed the OQ-45.2 at the intake (i.e., first) session and the OQ-10.2 and the WAI-Sh prior to each session starting with the third session. Participants were free to withdraw from the study at any time. The training center observed the university academic calendar and thus each dyad met once a week for one semester resulting in a maximum of 14 sessions. Among 929 clients who consented to participate in this research, 638 (69.68%) clients completed the WAI-Sh at least once and were thus included in the sample. The rest of the clients withdrew from the study or self-terminated the counseling before the third session. An ANOVA indicated that these two groups did not differ in terms of the initial symptom level assessed by the OQ-45.2, $F(1,854) = 0.01, p > .05$. All the sessions conducted over the entire therapy course were included in the sample.

Analysis

We examined the total working alliance and total symptomology scores for each session over the course of therapy using Mplus 7 and Latent Change Score Modeling (LCSM) (McArdle, 2009). This analysis is appropriate as it takes account of within individual change over time within and across two separate variables, in this case the alliance and global symptomology. It is also general enough so that it can account for missing data and varying lengths (i.e., not all treatments need to be of the same length or have data for every session). LCSM has been successfully applied in the previous research investigating change and its correlates (e.g., Tasca & Lampard, 2012; Teachman, Marker, & Clerkin, 2010). The Latent Change Score Model rests upon the assumption that each variable can be accurately modeled over time using the common assumption of including only intercept and slope parameters. To establish the validity of this common assumption prior to examining cross variable effects,

we conducted univariate Latent Growth Curve Modeling (LGCM) of the pattern over time separately for working alliance and symptom severity (Bollen & Curran, 2004). The univariate LGCM model represented the change as a linear trajectory defined by an intercept and a slope (see the paths of gw1-gw17 and gq1-gq17 depicted in Figure 1). The intercept for the working alliance indicated the initial working alliance and the slope indicated the change rate of the working alliance. The intercept for symptomology indicated the initial symptomatic severity and the slope indicated the change rate of the symptomatic severity. If both univariate models fit the data, we then combined them into one multivariate LGCM model where each model was similar but there was an added overall set of relations among the slope and intercept parameters (c1-c6 in Figure 1). The parameter c1 indicated the overall relation between changes of alliance over time with changes of symptomology over time (hypothesis 1) and if this parameter was significant then closer examination of the session by session relations between the two variables was warranted.

In our examination of the more specific session by session effects of the alliance and symptomology on each other (i.e., hypotheses 2a, 2b, and 2c), we adopted the model presented in Figure 2. This Figure is identical to that presented in Figure 1 except the session by session effects across the two variables are taken into account. The common unidirectional model of the alliance leading to subsequent changes in symptomology (hypothesis 2a) was operationalized by focusing on the alliance to subsequent symptomology paths (rw) while setting the symptomology to subsequent alliance paths (ro) to zero. Then we examined the unidirectional symptomology to alliance relations (i.e., hypothesis 2b) by focusing on the symptomology to subsequent alliance paths (ro) and setting the alliance to subsequent symptomology paths (rw) to zero. Finally, we examined the reciprocal model (hypothesis 2c) by freeing both the ro and rw paths. We expected hypothesis 2c to be the best representation of the data.

The fit of the models were evaluated using the criteria recommended by Hu and Bentler (1999): robust chi-square, CFI, RMSEA, and SRMR. We performed the Lilliefors Kolmogorov-Smirnov (Lilliefors, 1967) test to examine the univariate normality of the WAI-Sh and the OQ-10.2 at each session. Results indicated that all the variables violated the normal distribution, $P < .05$, except the OQ-10.2 at the session six, seven, eight, ten, and eleven. Therefore, we adopted the robust maximum likelihood method of parameter estimation. A nested model comparison approach was used to precisely examine which model best represented the data. Differences between nested models were compared using the Santorra-Bentler scaled chi-square difference test in accordance with the robust estimation approach (Muthén & Muthén, 2012).

Following Schlomer, Bauman, and Card's (2010) suggestion, we conducted the Little (1988)'s test to investigate the missing pattern. The result indicated that the current data were Missing Completely at Random (MCAR), $\chi^2(3742, N=638) = 3628.41, P > .05$. Schlomer et al. (2010) showed that the Full Information Maximum Likelihood estimation (FIML), which estimates model parameters based on all available information, is appropriate under the condition of MCAR. Thus, we used FIML to handle the missing data of the longitudinal WAI-Sh and OQ-10.2 in the analysis.

Results

The means, standard deviations, and bivariate correlations of the WAI-Sh and OQ-10.2 are displayed in Table 1. We were able to employ 11 session in our models based on the preliminary analysis, as more sessions made the models unidentifiable.

There was a nested data structure of the WAI-Sh and the OQ-10.2, as therapists saw multiple clients in this study. Each therapist saw an average of only 3.34 clients, indicating that the data were not highly nested. We performed the Hierarchical Linear Modeling to calculate the Intraclass Correlation Coefficient (ICC) for the dependent variables of the

WAI-Sh and the OQ-10.2. The ICC represented the ratio of the variance explained by the therapist level to the total variance, with lower ICC indicating less dependency. Results indicated that the therapist level only account for 0.1% of the WAI-Sh variance and 0.03% of the OQ-10.2 variance. We thus concluded that the nested data structure was not a significant threat to the independence assumption and we thus did not model the therapist level in the following analyses.

Table 2 summarizes the fit indices of all the models. We first examined the latent growth curve model of the working alliance (Model 1a). As can be seen by the values of CFI (.97), RMSEA (.044), and SRMR (.032), this model fit the data well. We then examined the latent growth curve model of the symptomatic severity (Model 1b). As can be seen by the values of CFI (.97), RMSEA (.051), and SRMR (.041), this model also fit the data well. Results thus indicated that each univariate latent growth curve model was a good representation for the growth of the working alliance and the symptomatic severity over time.

We then examined the multivariate latent growth curve model of the working alliance and the symptomatic severity together (Model 1c), where Model 1a and Model 1b were combined together with correlated growth factors (i.e., intercepts and slopes but no session by session cross time effects). As can be seen by the values of CFI (.98), RMSEA (.033), and SRMR (.026), this model fit the data well. The examination of the association between the slopes of the working alliance and the symptomatic severity revealed a significant result (standardized coefficient = $-.36$, $P < .05$), indicating that in general an increasing working alliance was associated with a decreasing symptomatic severity. While Model 1c was a good representation of the data and supported hypothesis 1, it only modeled the overarching association of alliance with symptomology without revealing the temporal sequence. Thus, further modeling with the focus on the session-to-session predictions was warranted and needed in order to examine the main hypotheses of 2a, 2b, and 2c.

Among the three competing latent change score models, we first examined the unidirectional alliance—symptomology model (hypothesis 2a) where the paths between symptomology and subsequent alliance (ρ) were set to zero (Model 2a). As can be seen by the values of CFI (.98), RMSEA (.034), and SRMR (.037), this model (2a) fit the data well. We then examined the unidirectional symptomology—alliance model (Model 2b) where the paths between the alliance and subsequent symptomology change (ρ) were set to zero. Model 2b also fit the data well as indicated by CFI (.98), RMSEA (.034), and SRMR (.037) indicators. Finally, we examined the fit of the reciprocal model (Model 2c) where all paths between the alliance and symptomology were estimated. As can be seen by the values of CFI (.98), RMSEA (.032), and SRMR (.037), this model fit the data well. The corrected chi-square difference test between Model 2a and 2c was significant, scaled $\Delta\chi^2(1, N = 638) = 6.74, P < .05$, indicating that the unidirectional model of the working alliance effect only was a worse representation of the data compared to the reciprocal model. Further, the corrected chi-square difference test between Model 2b and 2c was significant, scaled $\Delta\chi^2(1, N = 638) = 8.25, P < .05$, indicating that the unidirectional model of the symptom effect only was also a worse representation of the data compared to the reciprocal model. Therefore, the reciprocal model (Model 2c) was supported as a superior model to the unidirectional models (Model 2a and Model 2b) and was endorsed as the final model representing the dynamic interactions between the working alliance and the symptomatic severity on a session-to-session base.

Figure 3 summarizes the session by session parameters among the working alliance and the symptomatic severity in the reciprocal model. As can be seen by the significant predictions of the working alliance on the subsequent symptomatic change and the symptom change on the subsequent alliance change (standardized parameter estimates ranged from $-.17$ to $-.25$), the key research hypothesis of the current study was supported in the reciprocal

model. It was found that the working alliance longitudinally predicted the subsequent symptomatic change while the prediction of the prior symptomatic severity on the working alliance was present simultaneously (hypothesis 2c).

Discussion

While a moderate association of the working alliance with the therapeutic outcome has been revealed consistently in the literature (Horvath et al., 2011; Norcross & Lambert, 2014), the mechanism and the predictive direction of this association is debated (Falkenström et al., 2014; Tasca & Lampard, 2012). The current study shed light on this issue by finding empirical support for a reciprocal influence model of the working alliance and the therapeutic outcome indicated by symptomology over the course of individual therapy. The results indicate that alliance change can predict subsequent symptom change while holding constant earlier symptom change (i.e., *relationship-as-strategy*) and further that symptom change can predict subsequent alliance score change while holding constant prior alliance scores (i.e., *relationship-as-outcome*).

Overall, there were several patterns yielded in the results. First, as expected, there were linear patterns in relation of the alliance with subsequent symptomology scores over time, which resonated with results in prior research (Horvath, 2001; Horvath et al., 2011; Martin et al., 2000). The relation of the working alliance with the subsequent symptomology supported the idea of *relationship as a strategy*, which echoed with the psychoanalytic application of transference (Freud, 1989) and the paramount clinical meaning of a necessary and sufficient therapeutic relationship in the client-centered approach (Rogers, 1957). This result augments the claim that the alliance is an active ingredient in treatment (Flückiger et al., 2012) beyond the previous research (Horvath et al., 2011; Martin et al., 2000) in that it demonstrates the alliance effect in a temporal session-to-session manner when acknowledging the outcome effect simultaneously.

The global relation of the alliance with symptom change (slope indicators from the combined growth curve model) was $-.36$ and this was slightly higher than the 95% confidence band ($r = .25$ to $.30$) generated by Horvath et al. (2011) in their meta-analysis. So our result supports the general relation of the working alliance and outcome. In our final model, we also included the direct session by session effects of the alliance and symptomology on each other in addition to the global relation of the two variables. The global relation of the slopes dropped a little to $-.18$ with the inclusion of the session by session estimates. The session by session estimates of the alliance leading to subsequent symptomology and the symptomology leading to subsequent alliance scores were similar and averaged $-.20$. The symptomology to alliance path was comparable to the more accepted alliance to symptomology path, indicating that both paths are important processes.

While the working alliance is affected by many client or therapist factors in the therapy process, the key question of more theoretical and practical meaning is whether the working alliance could still explain subsequent therapeutic outcome when controlling those impacting factors. The current study provides a more powerful examination of the alliance effect by looking at the prediction of the working alliance on the subsequent therapeutic outcome while simultaneously taking account of a commonly neglected alliance building factor—the therapeutic outcome. Together with the previous research (Horvath, 2001; Horvath et al., 2011; Martin et al., 2000), our results support the utility of the working alliance in psychotherapy.

However, the newer addition to the literature was the association of the symptom scores with the subsequent alliance change over time, which supported the idea of *relationship as outcome*. The heavy emphasis on the clinical utility of the working alliance (i.e., *relationship as a strategy*) in the previous alliance-outcome research resulted in a possible misperception that therapy is all about the therapeutic relationship and the working alliance is the means of

achieving outcome (Norcross & Lambert, 2014). While the *relationship-as-strategy* model speaks to the question of effective ingredients in psychotherapy, it potentially portrays alliance and outcome as two distinct constructs which should be established and exhibited in a sequential manner. The current result that reducing client's symptomology helps build the therapeutic alliance is important. It suggests that the working alliance may be enhanced and not scarified by trying to work on symptom management. Consistent with the previous research (Falkenström, Granström, & Holmqvist, 2013; Falkenström et al., 2014; Tasca & Lampard, 2012; Zilcha-Mano et al., 2014), the current study adds to the idea that establishing the working alliance and producing therapeutic outcome are two simultaneous and interacting processes, which reciprocally enhance each other.

This study focused only on linear relations over time within and across the variables. The reciprocal linear relations between the alliance and symptomology demonstrated that they have a mutual effect that can feed on itself: a good alliance leads to symptom change which leads to a stronger alliance which leads to fewer symptoms. This pattern is important but there was no examination of other patterns. For example, is this reciprocal pattern exponential with time? Where does it accelerate over time with each feeding the other? The stage model (e.g., Tracey, 2002) and the alliance rupture (e.g., Stiles et al., 2004) literature see the pattern between the alliance and eventual outcome as curvilinear where there should be a drop in the alliance in the middle sessions for there to be a successful outcome. These non-linear relations between the alliance and outcome were not the focus of this study and were thus not examined (in part due to the complexity of the necessary model). However, they should be examined in future research when such models are developed.

The current study was valuable in its examination of the alliance and outcome over the course of treatment. All assessment started at the beginning of the third session in this study. This is the typical point of assessment of the alliance in most research so we focused on this

typical point as the starting point and then examined the pattern over the entire subsequent course of treatment. It is thus possible that these results only represent what would occur after the alliance had already been established as of this third session. The dynamic relation of the working alliance with general symptomology in the initial stage of therapy is not revealed in the current results given this lack of inclusion of the initial two sessions. However, the initial levels of the working alliance and the symptom severity have been included in this study and were modeled by the intercept parameters. While it would be important to assess all sessions in subsequent research, the inclusive nature of the examination in this study and similar results in other research (Tasca & Lampard, 2012; Zilcha-Mano et al., 2014) are supportive of the claim of reciprocal relations between the alliance and symptomology, at least since the third session.

While this study was focused on the longitudinal interactive process of the working alliance and symptomology, it should be acknowledged that other factors could be confounding the change in both alliance and symptomology. As the common factor model proposed, client's characteristics, therapist allegiance/confidence to his/her approach, client's beliefs/expectations that therapy could work, and the therapeutic relationship between the client and therapist could contribute to the therapeutic outcome (Lambert & Barley, 2001; Wampold, 2001). Therefore, the current study is focused on one slice of the contributing factors of psychotherapy efficacy. Related to that notion, there could be a general momentum of both alliance and symptoms that cannot be explained by the cross-variable interaction, as can be seen by the slope parameters. This residual change pattern could be attributable to other common factors or a certain natural tendency which was not directly assessed.

It is also noteworthy that therapist factors were not found to significantly contribute to the change of alliance and symptomology. While previous research has shown that therapist factors play a small role in predicting outcomes (Lambert & Barley, 2001), the results of

homogeneity of the therapists in this study could be attributed to the focus exclusively on beginning therapists. It would be important to see further research investigating the therapist effect in the dynamic interaction of the working alliance and the therapeutic outcome by using more experienced therapists.

The role of the presenting issue in the alliance-outcome interaction was not investigated in the current study but could be related to differential patterns in the alliance-outcome link. Future research incorporating client's presenting issue could further add information into the dynamic picture of the working alliance and the therapeutic outcome, as the alliance effect has been demonstrated to vary across problems (Falkenström et al., 2013, 2014). However, the results of this study mirror those of Zilcha-Mano et al. (2014) who focused exclusively on treatment of depressives.

Another issue of the current study is the exclusive reliance on self-report measures, which introduces the possibility of mono-method bias. Future research employing diverse measurement approaches could potentially provide more insights into the alliance-outcome interaction.

Overall, the current study provided support for a reciprocal influence model of the working alliance and the therapeutic outcome as indicated by symptomatic change over time in individual therapy. While supporting both ideas of *relationship-as-strategy* and *relationship-as-outcome* simultaneously, the current study demonstrated that the alliance and symptomology interact with each other in a dynamic and reciprocal way over the therapy process instead of a unidirectional manner.

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Table 1. Number of Observations, Means, Standard Deviations, Cronbach α , and Correlations of Variables

	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Cα</i>	WAI3	WAI4	WAI5	WAI6	WAI7	WAI8	WAI9	WAI10	WAI11	OQ3	OQ4	OQ5	OQ6	OQ7	OQ8	OQ9	OQ10	
WAI3	376	65.05	11.48	.87	1.00																	
WAI4	379	65.49	11.97	.89	.85**	1.00																
WAI5	386	65.99	10.83	.86	.82**	.88**	1.00															
WAI6	330	67.22	11.60	.88	.80**	.84**	.90**	1.00														
WAI7	328	67.18	10.71	.87	.78**	.83**	.82**	.89**	1.00													
WAI8	283	68.60	10.85	.88	.80**	.83**	.80**	.90**	.92**	1.00												
WAI9	307	67.47	11.19	.89	.72**	.81**	.77**	.87**	.83**	.85**	1.00											
WAI10	230	68.01	11.19	.89	.74**	.83**	.84**	.86**	.88**	.91**	.87**	1.00										
WAI11	232	67.87	11.25	.89	.73**	.74**	.80**	.85**	.86**	.83**	.90**	.89**	1.00									
OQ3	522	20.18	8.43	.89	-.21**	-.25**	-.25**	-.19**	-.22**	-.19**	-.22**	-.19**	-.15*	1.00								
OQ4	444	18.15	8.09	.91	-.23**	-.27**	-.28**	-.23**	-.22**	-.20**	-.23**	-.26**	-.22**	.85**	1.00							
OQ5	390	18.22	8.31	.90	-.25**	-.24**	-.27**	-.24**	-.21**	-.24**	-.23**	-.30**	-.21**	.82**	.89**	1.00						
OQ6	336	17.45	8.26	.91	-.30**	-.30**	-.29**	-.31**	-.29**	-.26**	-.25**	-.32**	-.25**	.77**	.85**	.85**	1.00					
OQ7	285	17.51	8.32	.91	-.26**	-.22**	-.24**	-.24**	-.20**	-.25**	-.25**	-.31**	-.23**	.79**	.84**	.86**	.88**	1.00				
OQ8	230	18.23	8.57	.91	-.29**	-.26**	-.27**	-.26**	-.22**	-.29**	-.27**	-.31**	-.25**	.78**	.82**	.86**	.89**	.89**	1.00			
OQ9	184	18.27	8.19	.91	-.20*	-.20*	-.13	-.19*	-.10	-.22**	-.25**	-.27**	-.21*	.74**	.79**	.84**	.86**	.85**	.89**	1.00		
OQ10	138	18.23	8.30	.88	-.24*	-.20*	-.18	-.19*	-.15	-.25**	-.23*	-.32**	-.24**	.76**	.82**	.84**	.85**	.87**	.88**	.87**	1.00	
OQ11	92	18.15	9.11	.92	-.28*	-.24*	-.25*	-.26*	-.27*	-.33**	-.25*	-.34**	-.29**	.79**	.83**	.86**	.88**	.91**	.90**	.92**	.93**	1.00

N = 638. WAI=WAI-Sh. OQ=OQ-10.2. Numbers refer to session numbers, e.g., WAI3 is WAI-Sh at session 3. * *P* < .05

Table 2. Summary of Model Fit Index for Model Comparison.

	χ^2	<i>df</i>	CFI	RMSEA		SRMR
				Estimate	90% C. I.	
Model 1a: univariate growth of working alliance	88.14	40	0.97	0.044	[.031, .056]	0.032
Model 1b: univariate growth of symptoms	94.68	40	0.97	0.051	[.038, .065]	0.041
Model 1c: multivariate growth of alliance and symptoms	193.65	116	0.98	0.033	[.024, .041]	0.026
Model 2a: multivariate latent change model with alliance effect only	242.21	140	0.98	0.034	[.027, .041]	0.037
Model 2b: multivariate latent change model with symptom effect only	240.21	140	0.98	0.034	[.026, .041]	0.037
Model 2c: multivariate latent change model with reciprocal effects	231.16	139	0.98	0.032	[.025, .041]	0.037

N = 638

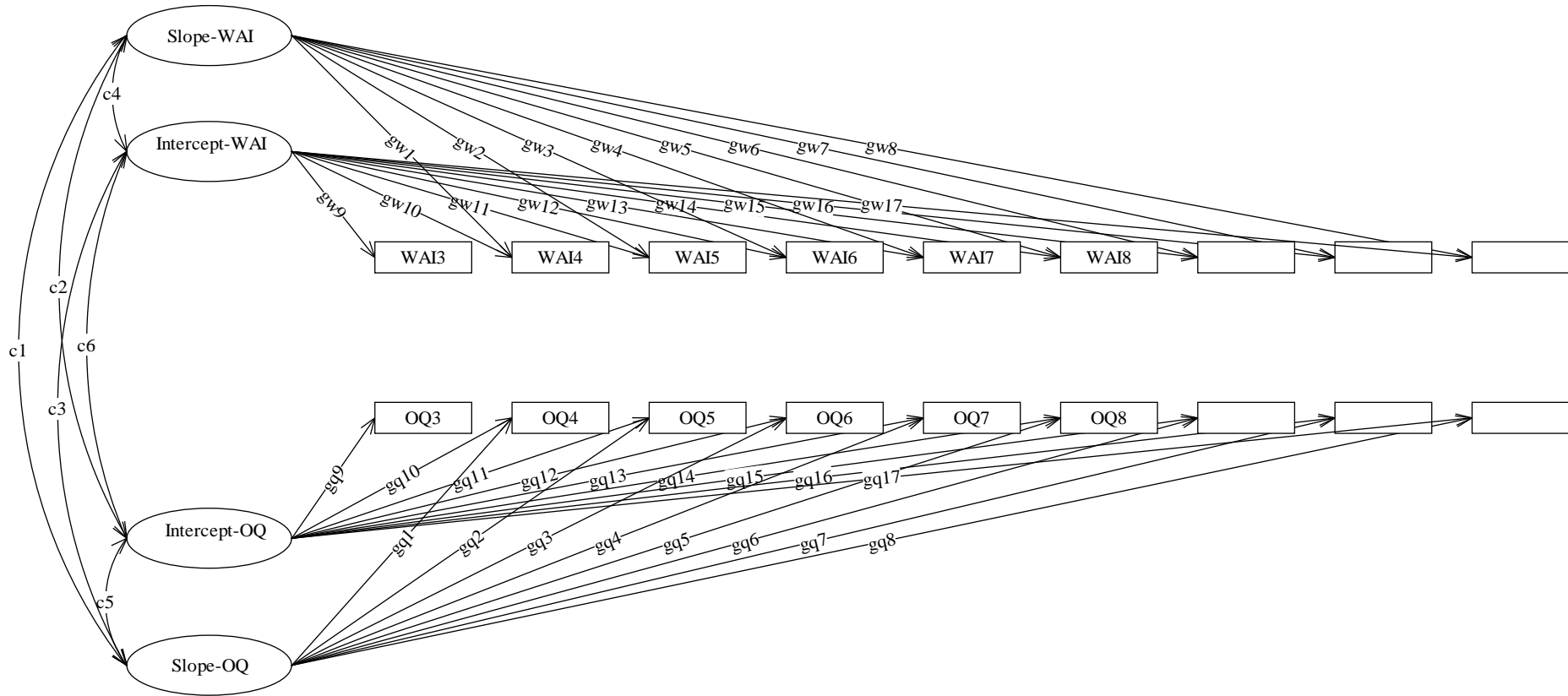


Figure 1. The Hypothesized Latent Growth Curve Model.

Abbreviations: WAI=Working Alliance Inventory-Sh. OQ=Outcome Questionnaire-10.2. c1-c6=Correlations among growth factors.

gw1-gw17=Loadings of growth factors of WAI-Sh. gq1-gq17=Loadings of growth factors of OQ-10.2.

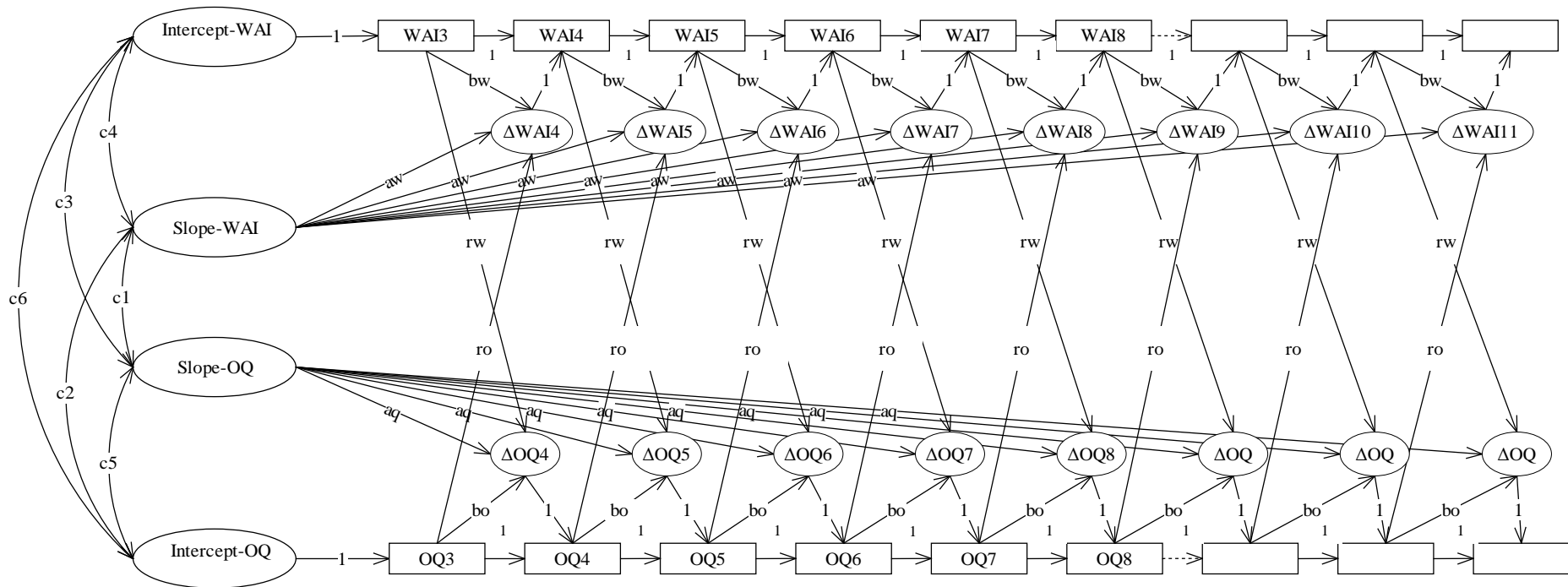


Figure 2. The Hypothesized Latent Change Score Model.

Abbreviations: WAI=Working Alliance Inventory-Sh. OQ=Outcome Questionnaire-10.2. rw= predictions from WAI-Sh on the subsequent change of OQ-10.2. ro= predictions from OQ-10.2 on the subsequent change of WAI-Sh. aw=systematic constant change for WAI-Sh. aq=systematic constant change for OQ-10.2. bw =systematic proportional change for WAI-Sh. bo=systematic proportional change for OQ-10.2. c1-c6=Correlations among intercepts and slopes.

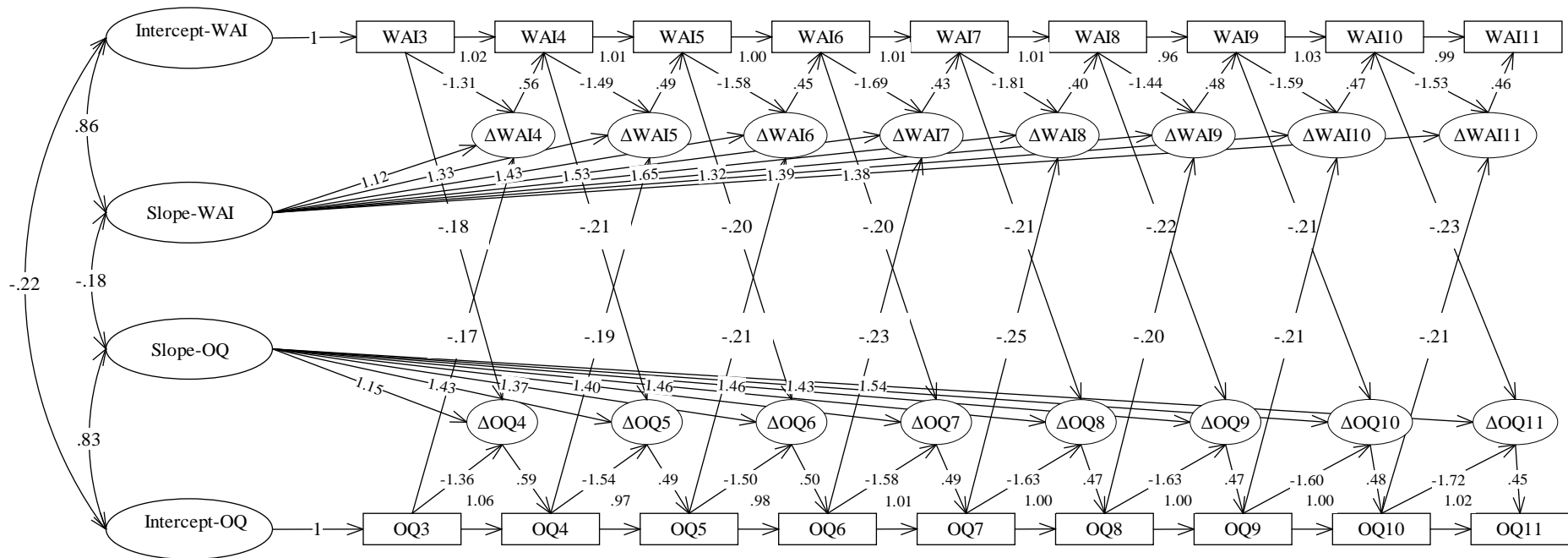


Figure 3. The Final Latent Change Score Model.

Abbreviations: WAI=Working Alliance Inventory-Sh. OQ=Outcome Questionnaire-10.2.