Journal of Counseling Psychology

The "Dyadic Dance": Exploring Therapist–Client Dynamics and Client Symptom Change Using Actor–Partner Interdependence Modeling and Multilevel Mixture Modeling

Xu Li

The "Dyadic Dance": Exploring Therapist–Client Dynamics and Client Symptom Change Using Actor–Partner Interdependence Modeling and Multilevel Mixture Modeling

Xu Li
Department of Educational Psychology, University of Wisconsin-Milwaukee

Using longitudinal actor–partner interdependence modeling and multilevel mixture modeling, the aims of this study were to investigate the therapist–client dyadic dynamic patterns (i.e., therapist and client consistency and their mutual influences in perceptions of working alliance) and how these dynamic patterns related to client symptom change with varied treatment lengths. Data set included 1,520 sessions conducted by 85 master's level therapist trainees with their 283 clients in China. Before every session, clients reported their symptom; after every session, both therapists and clients rated their working alliance. (a) Therapist consistency was positively associated with greater client symptom improvement, especially in relatively longer therapy course. (b) Client consistency and therapist–client mutual influence dynamics did not *individually* relate to client symptom improvement. (c) Two subgroups of therapist–client dyads with distinct dyadic dynamic patterns were identified: one subgroup (*Dyadic Independence*) showing significant self-consistency and nonsignificant mutual influence and the other subgroup (*Mutual Influence*) showing significant self-consistency as well as mutual influence. (d) The *mutual influence* subgroup was associated with greater client improvement than the *dyadic independence* subgroup, especially in shorter therapy. A dyadic dynamic pattern characterized by the presence of therapist and client self-consistency as well as mutual influence may be conducive to positive therapeutic outcome in terms of client symptom improvement.

Public Significance Statement
It may be helpful for the therapist to maintain some levels of consistency or stability in how they evaluate their therapy process and therapeutic relationship with the client. A therapist–client dynamic pattern characterized by therapist and client maintaining a level of consistency of their own perceptions but also having mutual influences appears to be associated with more positive client symptom improvement. To achieve this, the therapist may try to stay open to the client's experiences by which they let themselves be impacted while also maintaining an internal stability within themselves. The therapist may also exert necessary therapeutic influences on the client when clinically indicated.

It was just like having a dance with you. There were times I was leading the move and you were trying to follow; there were other times you were leading and I was following; and there were also a few times when we seemed to be walking our own walks . . . But I am so glad to have had this dance with you, because I realized I was somewhat a different person when the music was over.

Quote from client L, in the termination session with therapist Z.

The "dyadic dance" metaphor from the client in this quote appears to be a vivid depiction of the interactive and dynamic exchanges between the therapist and client in therapy sessions. The aims of this study were to take an investigative look at this "dyadic dance," to identify the different dyadic dynamic patterns between the therapist and the client, and to explore how these dynamic patterns would relate to client symptom change with varied treatment lengths.

Therapist–Client Dynamics: Definitions and Conceptual Considerations

Researchers approaching psychotherapy process from a dyadic dynamic perspective often conceptualized it as a dynamic system (Gelo & Salvatore, 2016; Li & Kivlighan, 2020). The term "therapy dynamics," or "therapist–client dynamics," was coined to refer to the patterns of the interaction and mutual influence between the therapist and the client (Lichtenberg & Semon, 1986) that lead to

---

Xu Li https://orcid.org/0000-0002-9550-8119

Correspondence concerning this article should be addressed to Xu Li, Department of Educational Psychology, University of Wisconsin-Milwaukee, 789 Enderis Hall, 2400 E Hartford Avenue, Milwaukee, WI 53211, United States. Email: lixu.bnu@gmail.com

potential changes in their respective perceptions and behaviors over time (Li & Kivlighan, 2020).

Specifically in the therapy process, therapist and client may exert mutual influence on each other in a variety of ways, one of which is through their respective perceptions of working alliance, an important part of their therapeutic relationship (Gelso, 2014). Clinical experiences suggest to us that in psychotherapy sessions, therapist and client often intentionally or unconsciously evaluate the nature and quality of their relationship, and adjust their judgments from time to time. For example, a therapist thinks that her working alliance with her client is weak, but her client feels that it is strong. The therapist may then notice the client's friendliness, collaboration, and openness to deeper personal disclosure. Informed by these perceptions, the therapist may likely increase her rating of their working alliance subsequently. As another example, a client may think that his relationship with his therapist is intimate, but the therapist actually feels annoyed and frustrated with the client. The therapist may unwittingly display a lack of empathic presence, or even impatience and frustration when interacting with the client. The client senses these negative reactions from the therapist, and may re-evaluate his own perception and subsequently rates the working alliance lower, as his "intimate" perception is not reciprocated. In both clinical examples, the client's or the therapist's perception of working alliance has temporally impacted the other party's subsequent perception of working alliance.

In addition to our clinical intuitions, several theories (Butler & Randall, 2013; Kelley & Thibaut, 1978) illustrated the phenomenon that in interpersonal interactions, the perception of one interactant may influence that of the other party, which provided conceptual support for the mutual influences of therapists and clients in their respective working alliance perceptions. For example, in the emotion coregulation theory, Butler and Randall (2013) suggested that in close relationships, dyad members' perceptions and emotional states constantly impact each other, and there is a coregulation process of perceptions and affects in their interpersonal interactions. Similarly, the interdependence theory (Kelley & Thibaut, 1978) also argued that partners in a relationship mutually influence each other in various aspects, including thoughts, emotional states, and behaviors, and the outcome (e.g., relationship satisfaction, affective state, etc.) of one person is the product of both that person's own input as well as the other party' input. Although these theories mostly focused on individuals in close relationships, these propositions could be reasonably generalized to other dyadic relationships, such as the psychotherapy process, where therapist and client also interact consistently and engage in social influence processes (Gelo & Salvatore, 2016). Therefore, researchers may gain unique insights into the mutual influence dynamics between the therapist and the client by looking at how their perceptions of working alliance predict their own as well as the other party's perception of working alliance over the course of therapy.

Therapist–Client Dynamics: Approaches in Existing Literature

In existing literature, a host of studies directly or indirectly investigated the dynamic patterns between the therapist and client from various perspectives and with various statistical models. One subset of these studies examined therapist–client dynamics in terms of their correspondence, congruence, or synchrony (Atzil-Slonim et al., 2015;

Bryan et al., 2018; Imel et al., 2014; Marmarosh & Kivlighan, 2012; Ramseyer & Tschacher, 2011; Zilcha-Mano et al., 2017). These studies mostly concluded that positive psychotherapy outcome was associated with the correspondence or synchrony between the therapist and client in terms of physiological processes (e.g., vocally encoded arousal in Imel et al., 2014), nonverbal behaviors (e.g., body movements in Ramseyer & Tschacher, 2011), or psychological perceptions (e.g., working alliance perceptions in Marmarosh & Kivlighan, 2012; Zilcha-Mano et al., 2017).

Another subset of existing research (Bryan et al., 2018; Butner et al., 2021; Li et al., 2020; Paz et al., 2021; Peluso et al., 2012; Soma et al., 2020; Wieder & Wiltshire, 2020) employed a dynamic system approach and explored the equilibrium (also termed attractor or set-point) and the coregulation processes between the therapist and the client. Specifically, using the first-order differential equations system or the Actor–Partner Interdependence Modeling (APIM) framework, these scholars modeled how the current state of the therapist and client in terms of emotional arousal (e.g., Bryan et al., 2018; Paz et al., 2021; Soma et al., 2020; Wieder & Wiltshire, 2020) or behavioral control or friendliness (e.g., Li et al., 2020) was associated with the changes/fluctuations of their own and the other party's state at the next timepoint (e.g., back to or away from the equilibrium set-point). Findings in these studies consistently supported the existence of mutual influence and coregulation processes between the therapist and the client, while the specific effects and mechanisms appeared to be more complicated. For example, Paz et al. (2021) revealed that a "dampening" interpersonal dynamics in emotional arousal (i.e., mutual influence to pull the other party back to their baseline) was associated with better therapy session outcomes. In contrast, Li et al. (2020) found that an "amplifying" dynamics of therapist increasing their level of behavioral control in response to higher client control was associated with higher client working alliance ratings in their first therapy session. Further yet, Bryan et al. (2018) found that higher client-reported alliance was associated with a "dysregulating effect" of therapist's emotional state on the client's (i.e., amplifying client's emotional arousal away from their baseline) in suicide risk assessment sessions but with a "regulating effect" of therapist's emotional state on the client's (i.e., decreasing client's emotional arousal towards their baseline) in suicide intervention sessions. These results indicated that how the specific therapist–client coregulation processes related to therapy outcome might be more complex and nuanced, and might be likely influenced by different conceptualization and modeling approaches as well as therapy sample and settings.

Depicting Therapist–Client Dynamics: Four Components and Their Combinations

The Four Components of Therapist–Client Dynamics

Summarizing existing studies, scholars conceptualized and examined four specific components of the mutual influence dynamics between the therapist and client, explicitly or indirectly. The first component, client influence on therapist, is defined as the temporal effects of client's states, perceptions, or behaviors on subsequent therapist states, perceptions, or behaviors (Li et al., 2020; Paz et al., 2021; Wieder & Wiltshire, 2020). In the context of working alliance perceptions in this study, this means the extent to which the client's perception of working alliance temporally informs subsequent

therapist perception of working alliance. In other words, in a dyad where there is a strong dynamic of client influence on therapist, one may observe a clear pattern of therapist subsequent rating of working alliance being predicted by the client's current perception of working alliance; whereas in dyads where there is very weak client influence on therapist, the therapist's working alliance rating would appear uninformed by thus unrelated to the client's prior rating. In a completely parallel fashion, one can define and conceptualize the second component, therapist influence on client, which is not reiterated here. These two components both concern the mutual influence between the therapist and the client, and are thus considered as the "interpersonal components" (Paz et al., 2021).

The third component, therapist consistency, represents the stability of the therapist's states, perceptions, or behaviors over time (Li et al., 2020), maintained around their equilibrium levels (Bryan et al., 2018; Paz et al., 2021). Operationally, in the context of working alliance perceptions, therapist consistency can be indicated by the extent to which therapist's subsequent working alliance perception is predicted by their own previous working alliance perception. In this vein, a therapist with high consistency is someone who has maintained a relatively stable sense of the quality of their relationship with the client over time, and a therapist with low consistency would display a pattern in which their working alliance perception is minimally informed by or even unrelated to their prior perceptions. In the latter condition, the therapist's perception may be relatively haphazard, or overly influenced by external factors, such as their personal life outside of therapy. In parallel, one can define the fourth component, client consistency, which is operationalized in this study as the extent to which client's previous working alliance rating predicts their own subsequent working alliance. Both the third and the fourth components mostly pertain to the temporal consistency *within* the therapist or client, thus are considered the "intrapersonal" components (Paz et al., 2021).

Characterizing Dyadic Dynamic Pattern by the Combination of the Four Components

While the four aforementioned components (therapist influence on client, client influence on therapist, therapist consistency, and client consistency) each captures an important aspect of the overall therapy dynamics, it is argued that the exact *dyadic* dynamic pattern of a given therapist–client dyad could be best manifested by the *combination* of the four components. Specifically, four dyadic dynamic patterns appear to be clinically intuitive and practically common.

Some therapist–client dyads may demonstrate a *dyadic independence* pattern, which is characterized by the presence of therapist and client consistency, but the absence of therapist influence on client or client influence on therapist. In this pattern, the therapist's and client's perceptions or behaviors are only predicted by their own previous perceptions or behaviors, and are not influenced by the other member's input at all. In contrary, another therapist–client dyad may show a *mutual influence* pattern, characterized by the presence of both therapist and client consistency as well as their mutual influence. This corresponds to theorists' conceptualization (e.g., Kiesler, 1988) that in therapy sessions, both the therapist and the client maintain a level of internal consistency in their own perceptions and behaviors while also being influenced by the other

member through their interactions. Third, there could be a *therapist leading* pattern characterized by the presence of therapist consistency and influence and some level of client consistency, but an absence of client influence. In dyads with this pattern, there is an effect or impact of the therapist's perceptions or behaviors on the client's, but not the other way around. Correspondingly, a dyad could also show a *client leading* pattern in the reverse case where there is client consistency and influence and some level of therapist consistency, but an absence of therapist influence.

It is important to note that these aforementioned four dyadic dynamic patterns are not exhaustive, though representing some most clinically sensible therapist–client dyadic dynamic patterns. In fact, mathematically, there can be totally $2^4 = 16$ types of possible combinations depending on the presence or absence of the four components, but not all of them are frequently observed. For example, most existing studies using APIM found significant actor effects for both therapist and client (e.g., Bryan et al., 2018; Kivlighan, et al., 2016; Li et al., 2021), which suggested the presence of therapist and client consistency. Therefore, it is less likely to observe dynamic patterns where therapist/client perception or behaviors do not predict their own subsequent perceptions or behaviors.

Therapy Dynamics in Relation to Treatment Length and Therapy Outcome: Theoretical Predictions and Existing Research

In the previous sections, I discussed the definition and four components of therapy dynamics, and one specific way of conceptualizing therapy dynamics through therapist and client mutual perceptions of working alliance. Below, I further discuss the theoretical propositions and existing empirical findings regarding how therapy dynamics may be manifested in treatments with varied lengths and different outcomes.

Therapy Dynamics and Treatment Length

A group of theorists regarded psychotherapy as a dynamic social influence system (Gelo & Salvatore, 2016; Li et al., 2020), in which the therapist and the client interact with and influence each other since their first encounter. From this perspective, it stands to reason that the longer the therapist and client interact, the less likely they will be "in their own worlds" and the more mutual influence they will develop with each other. In other words, the interpersonal components of therapist and client mutual influence may grow stronger, while the intrapersonal components of therapist and client consistency might decrease to some extent. Such theoretical propositions have received some empirical support (e.g., Kivlighan et al., 2016; Paz et al., 2021; Tracey, 1987). For example, Kivlighan et al. (2016) found that the prediction effect of client real relationship on that of the therapist was larger in later than in earlier sessions, suggesting that the client's temporal influence on the therapist grew stronger as sessions went on. Given these theoretical arguments and preliminary empirical evidence, in this study, it was tentatively hypothesized that a longer treatment length would be associated with weaker intrapersonal consistency and stronger mutual influence between the therapist and the client.

Therapy Dynamics and Therapy Outcome

Interpersonal Dynamics and Therapy Outcome. Regarding therapist influence on the client and client influence on the therapist, theorists offered diverse perspectives in terms of how their mutual influence would relate to therapy outcome. On one hand, Haley (1963) contended that successful therapy is characterized by a dynamic where the therapist influences the client, because with an appropriate level of therapeutic influence, the therapist can help reshape client's maladaptive interpersonal patterns or symptomatic presentations. On the other hand, other theorists have argued for the importance of client influence and recommended that the therapist follows the client's lead and be receptive to the client's direction or influence. For example, psychotherapy researchers from an attachment perspective (Wallin, 2007) accentuated the importance of therapist being sensitive and responsive to client's experiences to better facilitate client's secure attachment to the therapist. As a prerequisite, the therapist must stay open, perceptive, and receptive to the client's input and influence in therapy sessions. Similarly, Kiesler (1988) also noted that in interpersonal psychotherapy, being influenced by the client's interpersonal impacts is the crucial first step (the "hooked" stage) for the therapist to gain experiential insights into the client's dysfunctional interpersonal patterns, on which the therapist can focus the subsequent therapy work during the "unhooked" stage. Taken together, these theoretical propositions suggested that the dynamic patterns of both therapist influence on client and client influence on therapist may carry therapeutic benefits.

However, empirical research in this line of inquiry has been equivocal. Some studies explored whether therapy sessions were generally characterized by the client showing more influence on the therapist (defined in various ways), or the therapist showing more influence on the client. Results were mixed, with findings supporting the existence of higher level of therapist influence (e.g., Bischoff & Tracey, 1995), or relatively equal therapist influence and client influence (e.g., Lichtenberg & Semon, 1986), or higher client influence (e.g., Wampold & Kim, 1989). Other studies attempted to further investigate the association between mutual influence patterns between therapist and client to therapy process and outcome. Again, no consistent results were reported: some (e.g., Tracey, 1985) found that successful therapy dyads were characterized by the therapist being more influential and unsuccessful therapy dyads were characterized by therapist and client showing equal level of influence, while other studies (e.g., Lichtenberg & Barké, 1981; Lichtenberg & Kobes, 1992) reported no significant link between the dynamic pattern of therapist being influential and positive therapy outcome. Considering more nuanced moderating mechanisms, Li et al. (2020) recommended a "modulated approach" that was found to relate to positive outcome, in which the therapist may consider being more influential (or receptive to a client's influence) if in general, the therapist is not influential (or not receptive to client influence), and consider refraining from being too influential with a client when the general influence/directiveness of the therapist is already high. Finally, as reviewed previously, research using the dynamic systems approach (e.g., Bryan et al., 2018; Li et al., 2021; Paz et al., 2021) also produced varied findings, with some suggesting the positive effects of a "regulating" or "dampening" (e.g., Paz et al., 2021) interpersonal dynamic (i.e., pulling back to the baseline), while others supporting the positive effects of a "dysregulating" or "amplifying" (e.g., Li et al., 2021) interpersonal dynamic pattern (i.e., deviating further from the baseline).

Intrapersonal Dynamics and Therapy Outcome. The Intrapersonal dynamics encompasses therapist consistency and client consistency. Regarding the former, Kiesler (1988)'s interpersonal therapy model suggested that a central goal and a marker for therapy success is the identification and resolution of client's maladaptive interpersonal patterns that are enacted in the "hooked" stage with the therapist. To reach this "unhooked" stage, it is a prerequisite for the therapist to have the ability to maintain a level of consistency in their own perceptions of the session and in their conceptualization of the therapy process. Such consistency allows the therapist to have the necessary objectivity to identify client's maladaptive interpersonal patterns at play in therapy process, and prevents the therapist from being trapped or "carried away" in client's dysfunctional patterns, thus losing direction of the therapy.

Only a few empirical studies attempted to link therapist consistency to therapy outcome. For example, both Paz et al. (2021) and Soma et al. (2020) revealed the process of therapist regulating their emotional arousal to keep it at the equilibrium level, but did not relate this process to therapy outcome. Tracey (1987) found that successful therapy cases were characterized by a dynamic in which both therapist and client achieved a self-consistent but also mutually influential and dependent relational pattern at the late stage of therapy. Li et al. (2020) indicated that when therapists showed higher general level of consistency, they had higher client evaluations of session quality. From these preliminary findings, it appears that consistent with the aforementioned theoretical prediction (Kiesler, 1988), therapists do make efforts to maintain some level of consistency and this process may be related to positive client outcome.

Finally, the notion of client consistency has not received a lot of discussion in either theoretical literature or empirical investigations. Conceptually, it may involve client resistance to therapist's therapeutic influence, which can be indicative of undesirable therapy dynamics and negative therapy outcome (Schwartz et al., 2019). However, it could also imply a sense of perceptual stability and psychological independence of the client, which as some scholars (Roe et al., 2006) argued can be an adaptive sign showing the client's psychological maturity.

Few empirical research directly explored the connection between client consistency and therapy outcome. Though client consistency in terms of "returning to the equilibrium level" was documented in some studies (Paz et al., 2021; Soma et al., 2020), these studies did not explore how client consistency related to therapy outcome. In contrast, the aforementioned Tracey (1987) study found a pattern of client self-consistency in late stage of therapy for successful therapy dyads; whereas in Li et al. (2020), client consistency was unrelated to therapy session outcomes. It makes sense that without knowing the actual contributing factor to client consistency (whether it is client resistance to therapeutic influences, or it is the client's stability or independence, or something else), there may not be a consistent overall association between client consistency and therapy outcome.

Limitations in Existing Research

Several limitations are identified in the existing literature on therapist–client dynamics, which have motivated this study. First and perhaps as the most significant gap, despite the variety of approaches to depict therapist–client dynamics

(e.g., Butner et al., 2021; Peluso et al., 2012; Ramseyer & Tschacher, 2011; Wieder & Wiltshire, 2020), existing studies have not explicitly operationalized and integrated the four dynamic components together to more comprehensively depict the dynamic pattern for the therapist–client *dyad*. In addition, while some studies examined how the four dynamic components each individually related to therapy outcome, to date, no study has been identified that explored how the *differential combinations* of the four dynamic components might be associated with therapy process and outcome, in spite of the conceptual and clinical meaningfulness. Furthermore, none of the existing studies illuminated what the therapy dynamics would look like in *successful vs. unsuccessful* and *longer vs. shorter* therapy cases. As indicated earlier, the therapy dynamic patterns conducive to positive outcome may be different in therapy with varied treatment lengths; thus, it would be meaningful to consider both treatment length and treatment outcome in the inquiry of their associations with therapist–client dynamics. Such results can help inform practitioners of potentially effective strategies, whether or not their treatment length is limited.

These important gaps could be addressed with the use of some advanced analytical techniques, specifically the APIM (Kenny & Ledermann, 2010) and Multilevel Mixture Modeling (Asparouhov & Muthen, 2008), discussed in detail below.

Application of Actor–Partner Interdependence Modeling and Multilevel Mixture Modeling

Operationalizing the Four Components of Therapist–Client Dynamics Using APIM

The APIM (Kenny & Ledermann, 2010) has offered researchers a useful framework to model interdependence in dyadic relationships. When used with longitudinal pre–post-lagged data, the actor and partner effects of APIM provide an exact operationalization of the four aforementioned dynamic components of therapist and client consistency and mutual influence. As argued previously and shown in Figure 1, Panel (a), the therapist actor effect (aT) and client actor effect (aC), respectively, quantify the extent to which the therapist's and client's previous ratings predict their own subsequent ratings, dovetailing with the notions of therapist consistency and client consistency. Moreover, the therapist partner effect (pT) and client partner effect (pC), respectively, indicate the extent to which the therapist's and client's previous ratings predict the other party's subsequent ratings, above and beyond their own autoregressive actor effects. This corresponds to the definitions of therapist temporal influence on client and client temporal influence on therapist in their perceptions of working alliance.

Thereby, below, therapist consistency and client consistency are operationalized as and represented by the therapist actor effect aT and client actor effect aC, respectively, and therapist influence on client and client influence on therapist are, respectively, operationalized as and represented by the therapist partner effect pT and client partner effect pC.

Exploring the Combinations of the Four Dynamic Components Using Multilevel Mixture Modeling

The multilevel mixture modeling (Asparouhov & Muthen, 2008) technique, an integration of multilevel modeling and finite-mixture

modeling frameworks, may allow researchers to further examine the potential different combinations of the four APIM dynamic coefficients (aT, aC, pT, and pC). The finite-mixture modeling (Asparouhov & Muthen, 2008) assumes that there are distinct latent clusters of individuals (or dyads in this study's context) that account for the heterogeneity of the full sample, and classifies individuals (or dyads in this study) into smaller and more homogeneous latent classes. Integrating the finite-mixture modeling into a multilevel framework, Asparouhov and Muthen (2008) indicated that researchers can specify latent class variables on either the "within" level, or the "between" level, or both two levels, based on their research question.

The integration of APIM and multilevel mixture modeling has offered a highly promising way to explore latent clusters of therapist–client dyads that have distinct combinations of the four dynamic components. Specifically, at the within-dyad between-session level, the longitudinal APIM can help estimate the aT, aC, pT, and pC coefficients that quantify therapist and client consistency and mutual influence dynamics for the dyad. Then, at the between-dyad level, one can specify a latent class variable to categorize the four aT, aC, pT, and pC coefficients to identify potential subgroups of therapist–client dyads with distinct combinations of these coefficients. For example, one may observe a latent class with significant aT, aC, and pC, but nonsignificant pT. This would represent the *client leading* dynamic pattern. Alternatively, a combination of significant aT and aC but nonsignificant pT and pC would depict a latent class with a *dyadic independence* dynamic pattern.

Despite its potential, the integrative use of longitudinal APIM and multilevel mixture modeling has not been found in existing psychotherapy research. Therefore, this study attempted to harness the power of these advanced analytical techniques, and employ them to explore the various therapist–client dyadic dynamic patterns and the potential underlying subgroups of therapy dyads, and how the dyadic dynamic patterns (and subgroups with distinct dynamic patterns) would be associated with client symptom improvement over different treatment lengths.

Therapy Dynamics in Chinese Beginning Therapist Trainees

Notably, this study was carried out in a sample of beginning master's level therapist trainees in China. The use of this sample may contribute to the existing literature on therapist–client dynamics in a couple of ways. First, despite the burgeoning literature (e.g., Butner et al., 2021; Paz et al., 2021; Ramseyer & Tschacher, 2011) on therapist–client dynamics from the various perspectives (e.g., mutual influence, coregulation, synchrony, etc.), no existing study was located that investigated the dynamic patterns between Chinese therapists and clients. However, it is possible that therapy dynamic patterns may show some potential cultural differences. For example, in contrast to the Western culture that stresses independence and interpersonal boundary, Chinese culture is typically considered as more collectivistic and interdependent (Leung, 2010), where boundaries are less emphasized in interpersonal interactions. Therefore, one may speculate that there might be a stronger mutual influence dynamic in the Chinese sample than in Western samples. In addition, interpersonal relationships are highly emphasized in the Chinese collectivistic culture (Oettingen, 1995),

Figure 1
Dynamic Actor–Partner Interdependence Model for Therapist and Client Ratings of Working Alliance
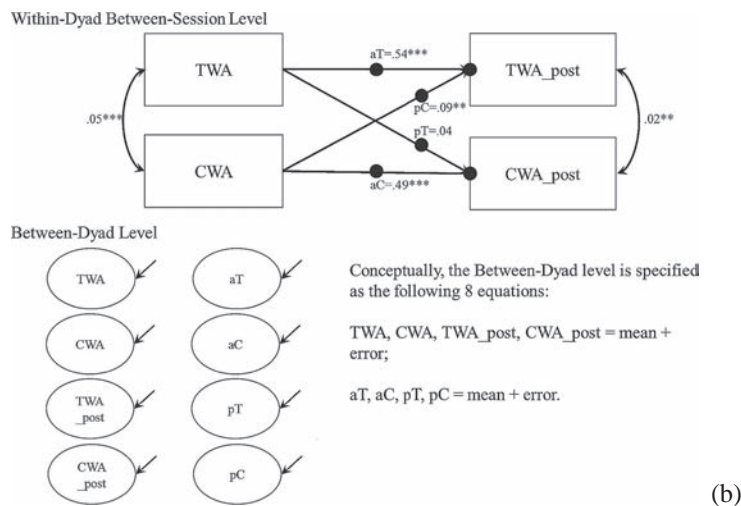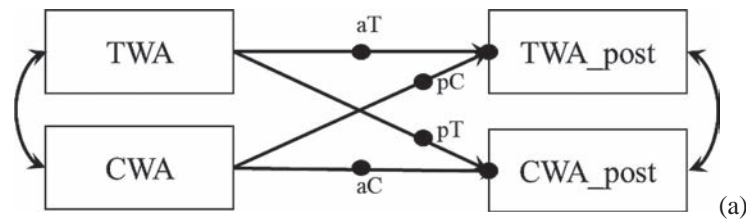
Note. Panel (a) shows the conceptual dynamic Actor–Partner Interdependence Modeling (APIM) for therapist and client working alliance. Panel (b) shows the estimation results of the two-level APIM for the overall sample. TWA = Therapist Working Alliance rating; CWA = Client Working Alliance rating. "X_post" indicates the rating of X for the subsequent session. aT = Therapist actor effect; aC = Client actor effect; pT = Therapist partner effect; pC = Client partner effect. The figure follows all conventions of drawing multilevel models as in Muthen and Muthen (2017), where a filled dot at the end of an arrow indicates the intercept being estimated at the higher levels, and a filled dot on the regression line indicates the regression slope being specified as random and modeled at the higher level.
* $p < .05$,   ** $p < .01$,   *** $p < .001$.

which also suggests that there might be more interactive impacts between the therapist and client in China when their mutual working alliance ratings are concerned. This being said, it is important to note that this study did not include multiple international samples; thus, the aim of this study was not to examine these aforementioned cross-cultural comparisons. Furthermore, due to the lack of relevant research in the Chinese context, there appeared to be insufficient empirical evidence to make informed hypotheses to be tested that were specific to the Chinese culture. Therefore, this study should be deemed as a preliminary exploration of the therapist–client dynamic patterns in the Chinese context that may add to our understanding of the potential similarities or differences in therapy dynamics across cultures.

In addition to the Chinese cultural background, some distinct dynamic characteristics may emerge or become more salient when beginning therapist trainees are sampled. For example, it has been documented (Hill et al., 2007; Rønnestad & Skovholt, 2003) that in contrast to more experienced professionals, many beginning therapist trainees struggle with a relatively high level of performance anxiety, which may entrap them in self-critical evaluative concerns about their own interventions and result in them failing to be present with their clients in the session (Hayes & Vinca, 2017). In such situations, the trainee therapists appear to be "in their own worlds," so one might observe their therapy dynamic features characterized by the presence of therapist consistency, but an absence of client influence on therapist. Though there seems to be no sufficient literature to make well-grounded hypotheses, it could be speculated that the beginning therapists may show some dynamic patterns like above that are consistent with their overall developmental level, but less commonly seen in experienced professionals. This being said, very few existing research has empirically explored therapy dynamic patterns in the population of beginning therapist trainees,

especially cross-culturally in the Chinese social context. Therefore, this study was conducted to fill this gap.

The Present Study

Taken together, this study aimed to explore two research questions in a sample of Chinese beginning counseling trainees.

Research Question 1: How would the four components of therapist–client dynamics *individually* relate to treatment length (longer vs. shorter), client symptom improvement (greater improvement vs. less improvement), and the Treatment length × Client improvement interaction (longer/shorter treatment that was more/less successful)?

From the literature review above, Hypothesis 1 was that in longer therapy, one may observe weaker therapist and client consistency (i.e., smaller aT and aC coefficients) and stronger therapist and client mutual influence (i.e., larger pT and pC coefficients). Furthermore, it appeared that only therapist consistency had relatively unequivocal empirical evidence supporting its positive connection with therapy outcome; thus, it was tentatively hypothesized that (Hypothesis 2) in more successful therapy with greater client improvement, one would observe greater therapist consistency (i.e., the aT coefficient). Given the lack of consistent findings regarding how the other three therapist–client dynamic components (aC, pT, and pC) related to client outcome across different treatment lengths, no confirmatory hypotheses were proposed and this study served as a preliminary exploration.

Research Question 2: What underlying latent clusters of therapist–client dyads would emerge that had different *combinations* of the four dynamic coefficients (aT, aC, pT, and pC) thus distinct *dyadic* dynamic patterns? Furthermore, how would these distinct clusters of dyadic dynamic patterns relate to treatment length, client symptom improvement, and the Length × Client improvement interaction?

Given the absence of empirical basis in the Chinese novice trainee sample to propose a well-informed hypothesis regarding what latent clusters would emerge and how these emerged clusters would further relate to different treatment lengths, different client improvements, and the Treatment length × Client improvement interaction, this second question was also a data-driven exploration.

Method

Participants

Therapist Trainees

A total number of 85 beginning therapist trainees participated in this study. Their age ranged from 22 to 55 years ($M = 31.54$, $SD = 7.59$). In terms of gender, 19 therapists identified as cisgender male (22.4%), 64 identified as cisgender female (75.3%), and 2 did not report gender identity (2.4%). Regarding race/ethnicity, 77 therapists (90.6%) identified as Han, 7 therapists identified as various minority ethnic groups (8.2%), and 1 did not report ethnic identity (1.2%). Regarding sexual orientation, 72 reported identifying as heterosexual (84.7%), 2 reported identifying as sexual minority

(2.4%), and 11 did not report sexual orientation (12.9%). All these therapist trainees were in their first clinical practicum and were trained using the three-stage helping skills model (Hill, 2014).

Clients

A total number of 283 clients, seen by the aforementioned 85 therapist trainees, participated in this study. Their age ranged from 18 to 79 years ($M = 29.11$, $SD = 8.54$). In terms of gender, 74 clients identified as cisgender male (26%), and 209 identified as cisgender female (74%). Regarding presenting concerns, the most common issues that client came for help with were symptoms of depression and anxiety and interpersonal relationship concerns.

Measures

The Clinical Outcomes in Routine Evaluation-10 (Connell et al., 2007)

The Clinical Outcomes in Routine Evaluation-10 (CORE-10) is a 10-item short version of the 34-item Clinical Outcomes in Routine Evaluation-Outcome Measure (CORE-OM; Barkham et al., 2006) utilized to measure the client's symptom distress level. The 10 items cover symptoms of depression and anxiety, interpersonal functioning, physical distress, trauma, and suicidal risk and are rated on a 5-point Likert scale ranging from 0 to 4. Total average score for the 10 items is calculated and higher total score indicates higher level of client symptom distress. The Chinese version of the CORE-10 used in this study was extracted from Zhang et al. (2020), which used the translation and back-translation procedures to ensure language equivalency and validated the translated version in the Chinese context. The reliability of the CORE-10 was .82 in Connell et al. (2007), and was .84 in this study.

The Working Alliance Inventory-Short Revised (Hatcher & Gillaspy, 2006)

Corresponding therapist and client versions of the Working Alliance Inventory-Short Revised (WAI-SR) were used to measure therapist and client perceptions of working alliance. The WAI-SR is a 12-item measure assessing the tasks, goals, and bond dimensions of the working alliance on a 5-point scale ranging from 1 to 5. A higher WAI-SR total score represents a better overall working alliance. Internal consistency was .90 in Hatcher and Gillaspy (2006). This study utilized the Chinese versions translated (following the aforementioned translation and back-translation procedures) and validated in the Chinese population in Li et al. (2018), where internal consistency was reported to be .86 and .90. With the data in this study, the internal consistency coefficient was .93 for the therapist form and .92 for the client form.

Procedure

The Training Program

The therapist trainees were all enrolled in a master's level mental health counseling training program at a university in Northern China. As a part of the training program, they were required to participate in supervised clinical practicum to gain counseling experiences. The practicum was housed in a clinic within the program, where practicum

students provided mental health services to clients in the community free of charge. The services were considered time-limited and were typically capped at 12 individual sessions, while exceptions could be made on a case-by-case basis after trainees consulted with their supervisors and obtained approval. Potential clients who contacted the clinic for counseling service were screened for eligibility (e.g., not being actively suicidal or psychotic, not having clinical diagnoses or severe symptoms inappropriate for beginning trainee therapists, etc.). Ineligible individuals were referred outside for professional psychotherapy or psychiatric evaluation. Admitted clients would be assigned to a therapist and be informed that their counselor was a trainee under supervision. All the trainees received weekly individual supervision and additional group supervision by licensed psychologists and supervisors in China. The trainees saw their clients in person before the coronavirus disease (COVID-19) pandemic, and shifted to providing online teletherapy after the pandemic began.

The participating therapist trainees were in their first clinical practicum after their first year of foundational course work on basic counseling theories, professional ethics, helping skills, and so on. Most of them were in the process of developing a specific theoretical orientation that fit their own styles. In their clinical practice, they were trained under and generally followed the Hill (2014) three-stage model to first explore clients' presenting concerns using mostly person-centered techniques (e.g., open questions, reflection of feelings, etc.), and then assist clients obtaining insights with some psychodynamic skills (e.g., interpretation, immediacy, etc.), and finally help clients make concrete change plans following cognitive behavioral skills (e.g., decision-making, action planning, etc.).

The Data Collection

The research project and data collection were approved by the governing ethics board in the university. Before the whole counseling process began, both the therapist trainee and their client were given information about this study and a consent form for signature if they agreed to participate. Data would not be collected unless both the therapist and the client provided informed consent, and were deidentified with number codes for both the therapists and the clients to conceal their identity before data analysis. Each participating therapist was given a brief demographic questionnaire at the beginning of the semester, and clients' demographic information was collected when they called the clinic to schedule an appointment. Before every session (including the first session), each consenting client was given the CORE-10 to rate their level of distress. At the end of the session, both the therapist trainee and the client were given their respective WAI-SR forms to rate their perceived working alliance for that session. All measures were administered on an online survey platform in Chinese language. Therapist trainees and clients completed the surveys individually and separately online.

The data collection concluded at the end of the trainees' practicum. In total, there were data from 1,520 sessions to be potentially used (missing values and other technical details are discussed below). On average, each trainee therapist had data from 3.33 clients ($SD = 1.92$, range = 1–10), and each therapist–client dyad completed an average of 5.37 ($SD = 2.74$, range = 2–15) sessions. It is important to note that therapist–client dyads who had only one session together were not eligible for this study, because one could determine neither client symptom change nor

therapist–client mutual influence dynamics; thus, such dyads were not included in the sample of this study.

Analyses and Results

Preliminary Analyses

Data Inspection

The data set was first inspected regarding missing values and data distribution. Due to space limit, technical details are presented in the online Supplemental Material A.[1] Accordingly, I retained all the cases and utilized the Robust Full Information Maximum Likelihood estimation[2] in the Mplus 8.0 software (Muthen & Muthen, 2017) to run the models in all the subsequent analyses.

Calculating an Index for Client Symptom Improvement

The second part of the preliminary analysis encompassed calculating an index for client symptom improvement that would later be correlated with the dynamic pattern between the therapist and the client. Technical details are presented in the online Supplemental Material B. The calculated client improvement index was a single metric for each client case, with a negative value representing client deterioration and a positive value representing client improvement. The larger value the index was, the greater client improvement (thus greater therapy effectiveness and success) achieved in that case. Across all dyads, the client improvement index ranged from −2.41 to 3.03 with a grand mean of .14 ($SD = .37$).

Main Analyses

Some technical details and the specific mathematical equations for all the main analyses are provided in online Supplemental Material C. Below, I report the primary analytical procedures and their corresponding results by each research question.

Preparation: Building the Longitudinal APIM Model to Estimate the Four Dynamic Coefficients

Based on the aforementioned operationalization of the four components of therapist–client dynamics, I first built the longitudinal APIM model to estimate the dynamic coefficients (aT, aC, pT, and pC) for each therapist–client dyad. Specifically, I lagged the data set to create next-session therapist and client working alliance rating (TWA_post and CWA_post), and specified current-session therapist and client working alliance (TWA and CWA) to predict both their own and the other party's working alliance rating at the subsequent session (Figure 1, Panel a).

The data set had three levels of nesting: sessions nested within clients, and clients nested within therapists. Conventionally, a three-level analysis (i.e., session, client, and therapist levels) would be

---

conducted. However, several conceptual reasons and some preliminary analyses indicated that a two-level analysis at the session and dyad level appeared more appropriate for the purposes of this study.[3]

Estimation results for the two-level dynamic APIM model are presented in Figure 1, Panel b. There were significant actor effects for both the therapist (estimate = .54, $p < .001$) and the client (estimate = .49, $p < .001$), supporting their within-person temporal consistency. Regarding the mutual influence, a significant client partner effect was observed (estimate = .09, $p = .005$), but the therapist partner effect was nonsignificant (estimate = .04, $p = .261$). This suggested that overall in the full sample, client perception of working alliance temporally predicted subsequent therapist perception of working alliance but not the other way around. In other words, it appeared that on average, there was a *client leading* dynamic pattern.

Research Question 1: Relating the Four Dynamic Components Individually to Treatment Length and Client Symptom Improvement

To reiterate, Research Question 1 asked how the four components of therapist–client dynamics *individually*, rather than *interactively*, would relate to treatment length, client symptom improvement, and the Treatment length × Client improvement interaction. The constructed model[4] for addressing this research question is depicted in Figure 2, and the estimation results are reported in Table 1.

Results showed that, first, therapy length was negatively related to both therapist actor ($b = -.02$, $SE = .008$, $p = .019$) and client actor ($b = -.01$, $SE = .006$, $p = .021$) effects, but positively related to both therapist partner ($b = .02$, $SE = .007$, $p = .009$) and client partner ($b = .02$, $SE = .007$, $p = .015$) effects. This result supported Hypothesis 1, and suggested that compared with therapist–client dyads who had shorter therapy, those who had longer treatment showed lower therapist and client consistency but higher mutual influence. Second, client symptom improvement was not associated with therapist partner pT, client actor aC, and client partner pC effects, but significantly related to therapist actor aT effect ($b = .11$, $SE = .057$, $p = .048$), suggesting that more successful therapy cases appeared to show higher therapist consistency. Third, the interaction term of therapy length and client improvement significantly related to therapist actor effect aT ($b = .06$, $SE = .026$, $p = .020$). Simple slope tests at half a standard deviation[5] below (at 4.0 sessions) and above (at 6.7 sessions) the grand mean of therapy length showed that in shorter treatment, client improvement was unrelated to therapist actor effect (*simple slope* = .03, $SE = .048$, $p = .568$), whereas in longer treatment, client improvement was positively associated with therapist actor effect (*simple slope* = .20, $SE = .082$, $p = .017$). This finding partially supported Hypothesis 2, and further indicated that the positive association between therapist consistency and client improvement was especially true for longer therapy, but nonsignificant in shorter therapy. None of the other interaction effects reached significance for other dynamic coefficients.

Research Question 2: Identifying Latent Clusters of Dyadic Dynamic Patterns and Relating Them to Client Improvement Across Treatment Lengths

Building on Research Question 1, Research Question 2 aimed to explore the underlying latent clusters of therapist–client dyads that

could best classify the full sample, with different clusters having different *combinations* of the four dynamic coefficients (aT, aC, pT, and pC) thus distinct *dyadic* dynamic patterns. Furthermore, how would these distinct clusters of dyadic dynamic patterns relate to treatment length, client symptom improvement, and their interaction? The analyses to answer this research question involved four steps.

Specifying the Multilevel Mixture Model. The constructed multilevel mixture model is displayed in Figure 3. Building off the overall dynamic APIM model estimated with the full sample (which is equivalent to a mixture model with just one latent class), I specified a latent categorical variable "cb" at the between-dyad level to categorize different dyads with potentially distinct dyadic dynamic patterns that could be manifested through different combinations of their four APIM coefficients (aT, aC, pT, and pC). Because the central focus was the different combinations of these

---

[3] The justification for running a two-level rather than a three-level model follows. First and statistically, when running the APIM model (Figure 1 Panel a) using a three-level analysis (session, client, and therapist levels), results showed that none of the variances for TWA, CWA, TWA_post, CWA_post, and the aT, aC, pT, and pC coefficients reached significance at the between-therapist level (ps ranged from .341 to .996). This suggested the lack of variation among the therapists (which made sense given the relative homogeneity of the therapist sample who were all beginning trainees in their first practicum) regarding the variables of interest thus was an indicator against the inclusion of the therapist level.Second and conceptually, the focus of this study was on the therapist–client dyad with the central goal of examining the dynamic patterns of each dyad. The subsequent multilevel mixture modeling would also aim to identify clusters of therapist–client *dyads,* rather than clusters of therapists or clients. Therefore, the focal unit of analyses in this study was the dyad as a whole entity with each dyad having potentially different dynamic patterns, and the purpose was to explore "*dyads* with dynamic X tended to have outcome Y." Taken together, the lack of significant therapist-level variance and the conceptual focus on the dyad in this study supported the decision to remove the therapist-level and just run the analyses on the two-level model: within-dyad between-sessions, and between-dyads. More specific discussion about the rationale and limitations of this decision is also provided in the Discussion section.

[4] One might wonder why client symptom improvement seems to be entered as a "predictor" rather than an "outcome" variable in this constructed model as it is conventionally treated in statistical analyses. Several reasons underlie the specific model building strategy in Figure 2. First and statistically, the Mplus program does not allow regressing the manifest variable of client symptom improvement onto the latent aT, aC, pT, and pC estimates obtained from the lower "within" level; instead, one could only regress the latent aT, aC, pT, and pC dynamic coefficients onto other variables in Mplus. Second and conceptually, this study is correlational in nature and we cannot derive directionality or causality between therapy dynamics and client outcome from the conducted analyses. Thereby regressing Y onto X, or X onto Y, is conceptually equivalent and should be interpreted as X and Y being correlated or associated, rather than one leading or causing the other. Therefore, whether regressing the dynamic coefficients onto client symptom improvement, or the other way around, does not impact the substantive interpretation of the results that they are (or are not) associated with each other. Third, this modeling strategy is consistent with the research aims of this study in revealing what dynamic patterns would be observed in more vs. less successful and longer vs. shorter therapy cases. Fourth, using client symptom change as a "predictor" has also been done in existing studies, for example, Kivlighan and Shaughnessy (1995). Taken together, though a bit counterintuitive, the model as shown in Figure 2 seems the best feasible model for the purposes of this study.

[5] Simple slopes were assessed at 0.5 *SD* below or above the average therapy length because the therapist–client dyads on average had a relatively small number of sessions ($M = 5.37$, $SD = 2.74$). Thus, the typically used one *SD* below (at 2.63 sessions) and above (at 8.11 sessions) the mean would be more on the "extreme" ends and not representative for this sample.

Figure 2

Relating Overall Dynamic Coefficients to Therapy Length, Client Improvement, and Their Interaction
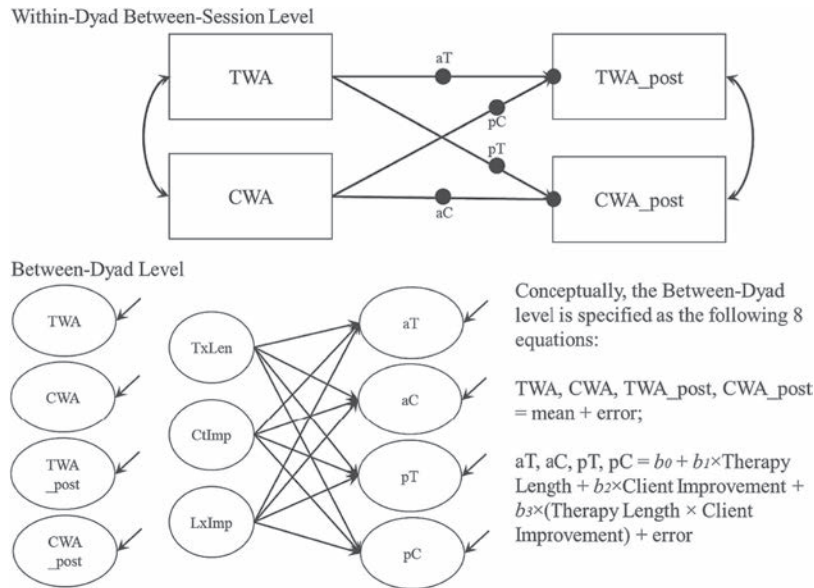
Note. TWA = Therapist Working Alliance rating; CWA = Client Working Alliance rating. "X_post" indicates the rating of X for the subsequent session. aT = Therapist actor effect; aC = Client actor effect; pT = Therapist partner effect; pC = Client partner effect. TxLen = Therapy length as represented by total number of sessions (centered); CtImp = Client improvement coefficient (centered); LxImp = Interaction term created by centered Therapy length × Client improvement coefficient. The figure follows all conventions of drawing multilevel models as in Muthen and Muthen (2017), where a filled dot at the end of an arrow indicates the intercept being estimated at the higher levels, and a filled dot on the regression line indicates the regression slope being specified as random and modeled at the higher level.

APIM coefficients, all the other intercepts and residual variances were fixed to be the same across the latent classes, and only the means of the four APIM coefficients were allowed to vary across the latent classes. This is represented by the four arrows from "cb" to the means of aT, aC, pT, and pC in Figure 3.

Determining the Number of Latent Classes. To determine the number of latent classes for the multilevel mixture model specified above, following best practices (Lanza et al., 2013), a series of models with increasing numbers of latent classes were tested. Several criteria were used to compare these solutions (Lanza et al., 2013). First, the most appropriate solution should have small Akaike Information Criteria (AIC) estimates and Bayesian Information Criteria (BIC) estimates. Second, all generated classes should have appropriate class sizes (more than 10% of the total sample size) and are conceptually interpretable, so that they represent practically meaningful classes. Third, when applicable or necessary, the bootstrapped likelihood ratio test (BLRT; Nylund et al., 2007) was employed to assess the statistical significance of change in likelihood ratio values for different cluster numbers.

Table 2 shows that, from the 1-class solution to the 2-class solution, both AIC and BIC estimates decreased dramatically. Furthermore, the BLRT test indicated that there was a significant improvement in likelihood ratio model fit when increasing from one latent class to two latent classes ($2 \times \Delta LL = 80.74$, $\Delta df = 5$, bootstrapped approximate $p < .001$). This suggested that the 2-class solution was superior than the 1-class solution. Furthermore, the 2-class solution also met the requirement of having no inappropriately small class size (class proportion being 15% of all dyads vs. 85% of all dyads). When increasing from two classes to three classes or from three classes to four classes, both the AIC and BIC values increased, indicating worsening model fit from 2-class to 3-class, and 3-class to 4-class solutions. Furthermore, the 3-class and 4-class solutions both had inappropriately small class sizes with less than 10% of the whole sample which might not be practically meaningful (Lanza et al., 2013). When estimating the model with five or more latent classes, Mplus reported convergence problems and empty classes with no cases in them, which suggested that solutions with five or more classes were not appropriate. Taken together, it was decided that the 2-class solution had the best model fit and the most appropriate class sizes, thus was elected as the final solution.

Inspecting the Two Latent Classes. Next, the obtained two latent classes were inspected to understand their differential dyadic dynamic patterns. Table 3 provides the descriptions of the obtained two latent classes and the statistics for their difference tests. It can be seen that the first class was significantly smaller in size than the second class. When looking at the four APIM coefficients, the two latent classes also showed distinct features. The first class had

Table 1

Relating Overall Dynamic Coefficients to Therapy Length, Client Improvement, and Their Interaction

Variable	Unstandardized B	SE	p
For aT			
Therapy length	−.02	.008	.019
Client improvement	.11	.057	.048
Therapy length × Client improvement	.06	.026	.020
For pT			
Therapy length	.02	.007	.009
Client improvement	.03	.056	.639
Therapy length × Client improvement	.01	.025	.714
For aC			
Therapy length	−.01	.006	.021
Client improvement	.02	.05	.599
Therapy length × Client improvement	.01	.02	.797
For pC			
Therapy length	.02	.007	.015
Client improvement	−.08	.057	.173
Therapy length × Client improvement	−.05	.025	.050

Note. aT = Therapist actor effect; aC = Client actor effect; pT = Therapist partner effect; pC = Client partner effect.

significant therapist actor and client actor effects, as well as significant and comparable therapist partner and client partner effects. However, the second class only demonstrated significant actor effects for therapist and client that were significantly stronger than their counterparts in the first class, but no significant partner effects for either therapist or client. Therefore, the first class was termed the "*mutual influence group,*" and the second group was named the "*dyadic independence group.*"

Relating Latent Class Membership to Client Symptom Improvement Across Treatment Lengths. The last step was to relate the latent class membership to client symptom improvement across treatment lengths. Following statistical texts, which recommended against saving the latent class membership and conducting post-hoc analyses, as if the class membership was an observed categorical variable (Asparouhov & Muthén, 2014; Lanza et al., 2013), I included the two variables of client symptom improvement and therapy length into the overall model by specifying a logistic regression of class membership onto length of therapy (grand mean centered), client symptom improvement (grand mean centered), and their interaction term at the between-dyad level.[6]

Results (Table 4) showed that client symptom improvement was significantly related to the log odds of showing the Mutual Influence pattern in reference to the Dyadic Independence pattern ($b = 2.41$, $SE = 1.149$, $p = .036$). Noting that the client improvement coefficient had an overall SD of .37, it could be computed that in relatively successful therapy cases (i.e., with one SD higher in client improvement than average), there was an increased likelihood at 243.9% [$2.439 = \exp(2.41 \times .37)$] that the case would show the Mutual Influence dynamic pattern in reference to the Dyadic Independence pattern. Moreover, there was a significant therapy length and client improvement interaction term ($b = -.82$, $SE = .403$, $p = .041$), indicating that the association between client improvement and latent class membership varied across therapy lengths. Simple slope analyses revealed that, in relatively shorter cases (therapy length at 0.5 SD below the grand mean), greater therapy success (1 SD higher

than average in client symptom improvement) was linked to an increased likelihood at 370.5%, simple slope = 3.54, $SE = 1.664$, $p = .033$; $370.5\% = \exp(3.54 \times .37)$, that the case displayed the Mutual Influence dyadic dynamic pattern in reference to the Dyadic Independence pattern. However, in relatively longer cases (therapy length at 0.5 SD above the grand mean), client symptom improvement was not linked to the dynamic pattern of the dyad, though the same trend emerged with marginal significance value (simple slope = 1.29, $SE = .695$, $p = .064$).

Discussion

Individual Dynamic Components and Their Associations With Therapy Outcome

The full-sample APIM model estimation showed that, averaging all therapists and clients in this study, there was an overall *client leading* dynamic pattern characterized by significant therapist and client consistency and the presence of client temporal influence on therapist but not the other way around. This result dovetailed with the existing APIM studies, where significant actor effects for both therapist and client were reported (e.g., Kivlighan, et al., 2016; Li et al., 2021), and was also aligned with findings demonstrating significant client influence rather than therapist influence in session (e.g., Wampold & Kim, 1989). This finding appears to be the first documentation of the overall dynamic feature in a sample of beginning therapist trainees in China. This overall dynamic pattern may be attributed to the sample of this study being beginning therapist trainees, who were still developing the advanced skills to fully exert their therapeutic impact on clients (e.g., using immediacy to discuss the therapy process and therapy relationship with their clients). Furthermore, it also seems consistent with the cultural emphasis of interpersonal humility and modesty rather than dominance and influence in the Chinese cultural context (Miao & Liang, 2012).

Regarding Research Question 1, how the dynamic components *individually* related to client improvement, results revealed that therapist consistency positively related to client improvement, especially in longer therapy. This result supported the tentative hypothesis of this study about therapist consistency, and provided one empirical evidence supporting the theorists' arguments (e.g., Kiesler, 1988) for the therapeutic benefit of the therapist maintaining a consistent, stable, and objective perception of the therapy process. The ability to keep an "observing ego" (Olinick et al., 1973) may be particularly important for beginning therapist trainees who, compared to experienced therapists, tend to lack a consistent perception of oneself and the therapy session or a stable professional identity to weather the unpredictable vicissitudes of psychotherapy process (Rønnestad & Skovholt, 2003). Moreover, that this positive effect was observed in longer rather than shorter therapy further suggested that therapist being consistent and stable could be particularly important when the therapist and client interact for an

---

[6] Similar to how the previous model (Figure 2) was built, here I also regressed the latent cluster membership onto the therapy length, client improvement index, and their interaction term. This is somewhat counterintuitive and not the conventional approach of treating client symptom improvement as the "outcome" variable. However, the rationale for testing the model this way is similar and please refer to footnote #4 for more detailed discussion.

Figure 3
Multilevel Mixture Model for the Therapist–Client Dyadic Dynamic Pattern
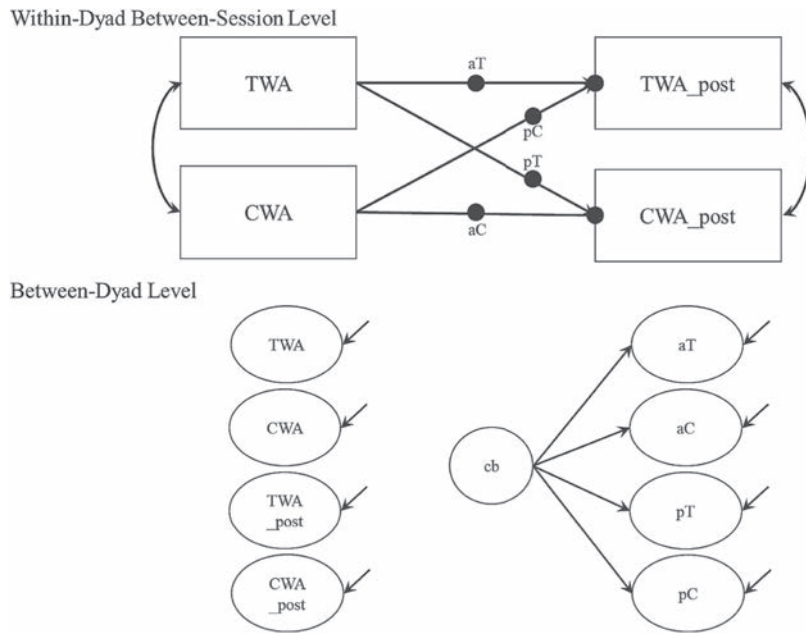
Note. TWA = Therapist Working Alliance rating; CWA = Client Working Alliance rating. "X_post" indicates the rating of X for the subsequent session. aT = Therapist actor effect; aC = Client actor effect; pT = Therapist partner effect; pC = Client partner effect. The figure follows all conventions of drawing multilevel models as in Muthen and Muthen (2017), where a filled dot at the end of an arrow indicates the intercept being estimated at the higher levels, and a filled dot on the regression line indicates the regression slope being specified as random and modeled at the higher level. "cb" is the latent categorical variable specified at the between-dyad level, and the arrows from cb to the four dynamic coefficients indicate that the latent classes were identified based on the aT, aC, pT, and pC estimates.

extended period of time which possibly allows for more interpersonal exchanges to unfold in contrast to brief therapy. Given the scarcity of existing studies, especially in the Chinese population, replication of this finding is warranted in future research.

The other three dynamic coefficients, i.e., therapist influence, client influence, and client consistency, did not relate individually to client improvement. This is not surprising given the inconsistent findings regarding these dynamic features and therapy outcome in current literature as reviewed above. Furthermore, as investigated in the second part of the analysis, instead of each dynamic component acting individually, perhaps, it is the combination of these four dynamic components that more accurately characterize the dyad's

Table 2
Overall Model Fit Indices for Different Numbers of Latent Classes

Number of latent classes	Log likelihood	AIC	BIC	Class size distributions
1	−1595.62	7286.79	7397.08	100%
2	−1555.25	3142.50	3222.71	85%, 15%
3	−1553.35	3148.71	3253.98	85%, 14%, 1%
4	−1553.33	3158.66	3289.00	73%, 17%, 2%, 8%

Note. AIC = Akaike Information Criteria; BIC = Bayesian Information Criteria.

dynamic pattern and these components could integratively, rather than separately, relate to client improvement.

Consistent with the hypothesis, as therapy length increased, therapist and client consistency decreased, and therapist and client mutual influence increased. The change was very slight though: with every one more session conducted, consistency decreased by .01 or .02 on a baseline consistency estimate of around .50, and mutual influence increased by .02 on a baseline mutual influence of smaller than .10. This unveiled a pattern that generally as therapists and clients met for more sessions, both the therapist and the client appeared to shift mildly from "being in their own worlds" to being more open and receptive to the other's input, echoing the aforementioned notion of individual therapy as a dyadic dynamic system (Gelo & Salvatore, 2016) with the therapist and the client interacting and influencing each other in their "dyadic dance" over time.

Latent Classes of Dyadic Dynamic Patterns and Their Associations With Client Improvement

To address the critical gap that no existing research had explored different *combinations* of the four dynamic coefficients integratively, in Research Question 2, this study adopted the multilevel mixture modeling in the longitudinal APIM framework and identified two latent classes of therapy dyads with distinct dyadic dynamic

Table 3

Description of the Final Two-Class Solution

Group size and APIM effects	Mutual influence group	Dyadic independence group	Group difference test
N of Dyads (%)	41 (15%)	241 (85%)	$\chi^2(1) = 141.84$, $p < .001$
Therapist actor effect (aT)	.33***	.83***	$d = -.50$, $t = -10.24$, $p < .001$
Client actor effect (aC)	.44***	.77***	$d = -.33$, $t = -5.82$, $p < .001$
Therapist partner effect (pT)	.29***	-.04	$d = .33$, $t = 5.26$, $p < .001$
Client partner effect (pC)	.44***	-.03	$d = .47$, $t = 10.32$, $p < .001$

Note. One therapist–client dyad was not able to be categorized because of their missing values on client Clinical Outcomes in Routine Evaluation-10 (CORE-10). The Group Difference Tests compared whether the included number of dyads and the aT, aC, pT, and pC estimates were significantly different between the Mutual Influence and the Dyadic Independence groups.
* $p < .05$, ** $p < .01$, *** $p < .001$.

patterns. Those in the *dyadic independence* cluster, which contained most therapist–client dyads (85%) in this study, appeared to be "walking their own walks" over the course of their sessions because of the significant therapist and client consistency but nonsignificant mutual influence coefficients. However, a small subgroup of therapist–client dyads (15%), comprising the *mutual influence* cluster, showed significant self-consistency as well as marked mutual influence effects that were numerically comparable to their consistency coefficients. This small subgroup of trainees and their clients seemed to have demonstrated the therapeutic "dyadic dance" that most of other dyads did not. Though the mutual influence dynamic was speculated to be salient given the interdependence nature of the Chinese culture that does not emphasize clear interpersonal boundaries (Leung, 2010), the finding that only a minority of dyads were categorized into the *mutual influence* subgroup was not completely surprising considering the developmental characteristics of beginning therapist trainees (Hill et al., 2007; Rønnestad & Skovholt, 2003). For example, novice trainees might be anxious and remained overly self-focused; hence, there was a lack of openness to

Table 4

Relating Dynamic Pattern Latent Class Membership to Therapy Length, Client Improvement, and Their Interaction

Variable	Unstandardized B	SE	p
Outcome: Mutual influence group vs. dyadic independence group (reference)			
Predictors			
Therapy Length	.04	.101	.675
Client Improvement	2.41	1.149	.036
Therapy Length × Client Improvement	-.82	.403	.041

Note. This table presents the binary logistic regression results in the multilevel mixture modeling. The dependent variable is the log-odds of a dyad being categorized as the *Mutual Influence* group in comparison with the reference *Dyadic Independence* group. In other words, it represents the (log-transformed) relative probability of the dyad showing the Mutual Influence dyadic dynamic pattern in reference to the probability of showing the Dyadic Independence pattern. A positive unstandardized coefficient B indicates that an increase in the value of the predictor is correlated with a greater likelihood for the dyad to show the Mutual Influence pattern in reference to the Dyadic Independence pattern, whereas a negative unstandardized coefficient B indicates that an increase in the value of the predictor is correlated with less likelihood for the dyad to show the Mutual Influence pattern in reference to the Dyadic Independence pattern, or equivalently, higher likelihood for the dyad to show the Dyadic Independence pattern in reference to the Mutual Influence pattern.

their client's experiences and consequently a lack of client influence on therapist. Or, they could be relatively unskilled to use appropriate interventions to impact the client (e.g., unskilled in using immediacy to communicate how they experience the therapy relationship with their clients, as noted in Hill, 2014), hence the lack of therapist influence on client.

In relating the dyadic dynamic pattern to client improvement, more successful cases with greater client improvement showed higher odds of showing the *mutual influence* pattern than the *dyadic independence* pattern, especially in relatively shorter therapy. This result lent some support to the theoretical arguments about the potential benefits of both therapist influence on client (Haley, 1963) and therapist receptiveness to client's influence (Kiesler, 1988; Wallin, 2007). Furthermore, the result was also congruent with the claim in Tracey (1987) advocating for both self-consistency and mutual interdependence between the therapist and client. Putting all the dynamic components together, it seems that rather than considering each dynamic component separately, perhaps, the more ideal dynamic pattern in a therapy process is that both the therapist and the client remain some level of self-consistency, so that they do not "lose themselves"; at the same time, there is also the "dyadic dance" characterized by significant dyadic interactions and mutual influences. Through such "interacting forces," the therapist may more accurately perceive, understand, and empathize with the client by being open to the client's input; it also allows the therapist to communicate their own experiences and exert helpful therapeutic impacts to facilitate clients getting unstuck from their dysfunctional patterns. Furthermore, the interacting effect was observed when therapy length was shorter, highlighting the therapeutic benefit for the therapist and client to engage in mutual interaction and influence process relatively soon and early in therapy. As discussed earlier, given the interdependent Chinese culture and the societal emphasis on interpersonal relationships and deemphasis on interpersonal boundaries (Leung, 2010), the beneficial effects of the mutual influence pattern could possibly be culturally specific. Because of the scarcity of existing research, future research is warranted to further replicate this finding, and possibly extending the finding to other therapist and client samples in other cultural contexts.

Limitations and Future Research Directions

Several limitations are worth noting. First, the therapist level was not modeled and any potential therapist-level predictors/moderators were not included in this study. The mixture modeling on the dyad level could also result in the same therapist T with client X being

categorized into the *mutual influence* cluster, but with another client Y being categorized into the *dyadic independence* cluster. It is argued that excluding the therapist level and having the same therapist potentially in different latent classes do not pose a problem per se, given the scope and purpose of this study. Specifically, first, this study focused on dyadic dynamic patterns; thus, the *therapist–client dyad* was the *unit of analysis* and the multilevel mixture modeling aimed to classify therapist–client dyads with different *dyadic dynamic patterns* instead of categorizing the individual therapist or client. Since a therapist can form different dynamic patterns with different clients (e.g., warm with one and hostile with another), the aims of this study were to explore which dynamic pattern, rather than which therapist, would be associated with a better therapy outcome. Furthermore, another reason for the decision is the observed nonsignificant therapist-level variances of the core variables of interest. This absence of therapist-level variances could likely be attributed to the relative homogeneity of the therapist trainees in this sample, who were all master's level trainees in their first practicum. However, with these justifications said, not modeling the therapist level has several limitations. First, though the dyadic dynamic pattern could be revealed, the model without the therapist level is not able to identify the specific *source* of the dynamic, according to social relations model (Kenny & La Voie, 1984). For example, we would not know if the client influence dynamic was coming from the client being generally influential, or the therapist being generally receptive, or the unique interaction between this particular therapist and client. Therefore, interpretation of this study's findings should be restricted to the dyadic dynamic patterns, rather than the sources (therapist, or client, or both), where these dynamic patterns were coming from.

Second, the APIM dynamic coefficients presented an overall estimate for the therapist–client dyads over the course of therapy while ignoring the possible dynamic changes throughout the different stages of therapy process. This is limited by the relative short-term and time-limited nature of beginning therapist trainees' sessions with their clients. Furthermore, in addition to the APIM, other alternative models can be applied to examine the therapist–client dynamics (e.g., dynamic systems model using nonlinear differential equations, see Li et al., 2021, and Peluso et al., 2012) and there are other parts, such as equilibrium set points and contemporaneous associations in the dynamic system (Butner et al., 2021) as well. Due to the limit in the scope, these alternative models and additional dynamic aspects were not explored in this study. Future research may use data from more sessions collected from long-term therapy cases and examine therapy dynamic patterns across different stages of therapy. Future studies may also explore different modeling strategies and dynamic aspects of the therapist–client dynamics.

Third, future study could also consider looking at within-session dynamic changes on the perceptual as well as behavioral level. From clinical experiences, we are aware that dynamic features can vary both between therapy sessions and also within a session. Furthermore, mutual influence dynamics can also happen on both perceptual and behavioral levels (e.g., client hostile behaviors impacting therapist level of hostility, Kiesler, 1988). This study examined therapist–client dynamic patterns between sessions on the perceptual level, and future research can further extend this line of inquiry by exploring behavioral level and within-session aspects of the therapist–client interaction.

Fourth, though the sample size in this study was larger than many existing studies in psychotherapy (e.g., Markin et al., 2014; Marmarosh & Kivlighan, 2012) and used all data available for this research question, several limitations are relevant to the sample size. For one, each trainee therapist had available data from 3.33 clients and the average therapy length was 5.37 sessions. These numbers are common given the practical reality and constraints of a master's level training program in China, but may have impacted the findings of this study. For example, it is possible that longer therapy with more sessions could enable more stable estimation of the client symptom change curves and therapist–client dyadic dynamics. This being said, it is important to note that the highest level sample size is often more influential on the multilevel model's estimation accuracy (Maas & Hox, 2005), and the sample size in this study exceeded the recommended threshold to generate unbiased estimates (Maas & Hox, 2005; McNeish & Stapleton, 2016). Thus, the sample size may not have undermined the findings in this study, but future research may use a larger sample, or multiple larger samples from different cultural contexts, to replicate the findings in this study or examine their generalizability to other cultures. Moreover, this study was designed prior to the COVID-19 pandemic and did not collect data on therapy modality (i.e., in person vs. online), and future research could consider how different therapy modalities might impact therapy dynamics given the widespread utilization of teletherapy since the pandemic.

Last but not least, the design of this study could only reveal correlational associations between therapist–client dynamic patterns and client outcome of distress reduction. Without an experimental design, no conclusion could be made between the directionality or causality in terms of whether it is the therapist–client dynamic patterns that lead to client distress reduction, or it is the other way around that client distress amelioration contributes to certain therapist–client dynamic patterns. Such questions warrant future research endeavors.

Conclusions and Implications

This study systematically explored how the four components of therapist–client dynamics *individually* and *in combination* related to client's symptom improvement over the course of therapy in a sample of beginning trainees in China. Results showed that therapist consistency was individually positively related to client improvement, especially in relatively longer therapy. Furthermore, the findings also accentuated the importance of therapist–client mutual influence when the combination of all four dynamic components was considered. It seems that in the Chinese beginning trainees, a dyadic dynamic characterized by therapist and client self-consistency as well as the presence of mutual influence is conducive to positive therapeutic outcome in terms of client symptom improvement. Therefore, therapist trainees may try to stay open to their clients' experiences and allow themselves to be receptive and impacted by their clients while also maintaining an internal stability and consistency of their own states and perceptions. Therapist trainees may also be encouraged to exert necessary therapeutic influences on their clients when it is clinically indicated. These efforts may help foster a self-consistent but also mutually influential dynamic pattern between the therapist and the client, where they fully engage in the facilitative "dyadic dance" of psychotherapy.

References

Asparouhov, T., & Muthen, B. (2008). Multilevel mixture models. In G. R. Hancock & K. M. Samuelsen (Eds.), *Advances in latent variable mixture models* (pp. 27–51). Information Age Publishing.

Asparouhov, T., & Muthén, B. (2014). Auxiliary variables in mixture modeling: three-step approaches using Mplus. *Structural Equation Modeling*, *21*, 1–13. https://doi.org/10.1080/10705511.2014.915181

Atzil-Slonim, D., Bar-Kalifa, E., Rafaeli, E., Lutz, W., Rubel, J., Schiefele, A. K., & Peri, T. (2015). Therapeutic bond judgments: Congruence and incongruence. *Journal of Consulting and Clinical Psychology*, *83*(4), 773–784. https://doi.org/10.1037/ccp0000015

Barkham, M., Mellor-Clark, J., Connell, J., & Cahill, J. (2006). A core approach to practice-based evidence: A brief history of the origins and applications of the CORE-OM and CORE system. *Counselling & Psychotherapy Research*, *6*(1), 3–15. https://doi.org/10.1080/14733140600581218

Bischoff, M. M., & Tracey, T. J. (1995). Client resistance as predicted by therapist behavior: A study of sequential dependence. *Journal of Counseling Psychology*, *42*(4), 487–495. https://doi.org/10.1037/0022-0167.42.4.487

Bryan, C. J., Baucom, B. R., Crenshaw, A. O., Imel, Z., Atkins, D. C., Clemans, T. A., Leeson, B., Burch, T. S., Mintz, J., & Rudd, M. D. (2018). Associations of patient-rated emotional bond and vocally encoded emotional arousal among clinicians and acutely suicidal military personnel. *Journal of Consulting and Clinical Psychology*, *86*(4), 372–383. https://doi.org/10.1037/ccp0000295

Butler, E. A., & Randall, A. K. (2013). Emotional co-regulation in close relationships. *Emotion Review*, *5*(2), 202–210. https://doi.org/10.1177/1754073912451630

Butner, J. E., Bryan, C. J., Munion, A. K., & Tabares, J. V. (2021). A dynamical systems approach to examining the efficacy of suicide-focused interventions. *Suicide & Life-Threatening Behavior*, *51*(1), 97–114. https://doi.org/10.1111/sltb.12675

Connell, J., Barkham, M., Stiles, W. B., Twigg, E., Singleton, N., Evans, O., & Miles, J. N. V. (2007). Distribution of CORE-OM scores in a general population, clinical cut-off points and comparison with the CIS-R. *The British Journal of Psychiatry*, *190*, 69–74. https://doi.org/10.1192/bjp.bp.105.017657

Enders, C. K. (2010). *Applied missing data analysis*. Guilford Press.

Gelo, O. C. G., & Salvatore, S. (2016). A dynamic systems approach to psychotherapy: A meta-theoretical framework for explaining psychotherapy change processes. *Journal of Counseling Psychology*, *63*(4), 379–395. https://doi.org/10.1037/cou0000150

Gelso, C. (2014). A tripartite model of the therapeutic relationship: Theory, research, and practice. *Psychotherapy Research*, *24*(2), 117–131. https://doi.org/10.1080/10503307.2013.845920

George, D., & Mallery, P. (2010). *SPSS for windows step by step. A simple study guide and reference*. Pearson Education.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2006). *Multivariate data analysis* (6th ed.). Pearson Prentice Hall.

Haley, J. (1963). *Strategies of psychotherapy*. Grune & Stratton. https://doi.org/10.1037/14324-000

Hatcher, R. L., & Gillaspy, J. A. (2006). Development and validation of a revised short version of the working alliance inventory. *Psychotherapy Research*, *16*(1), 12–25. https://doi.org/10.1080/10503300500352500

Hayes, J. A., & Vinca, M. (2017). Therapist presence, absence, and extraordinary presence. In L. G. Castonguay & C. E. Hill (Eds.), *How and why are some therapists better than others?: Understanding therapist effects* (pp. 85–99). American Psychological Association. https://doi.org/10.1037/0000034-006

Hill, C. E. (2014). *Helping skills: Facilitating exploration, insight, and action*. American Psychological Association. https://doi.org/10.1037/14345-000

Hill, C. E., Sullivan, C., Knox, S., & Schlosser, L. Z. (2007). Becoming psychotherapists: Experiences of novice trainees in a beginning graduate class. *Psychotherapy: Theory, Research, & Practice*, *44*(4), 434–449. https://doi.org/10.1037/0033-3204.44.4.434

Imel, Z. E., Barco, J. S., Brown, H. J., Baucom, B. R., Baer, J. S., Kircher, J. C., & Atkins, D. C. (2014). The association of therapist empathy and synchrony in vocally encoded arousal. *Journal of Counseling Psychology*, *61*(1), 146–153. https://doi.org/10.1037/a0034943

Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal relations: A theory of interdependence*. Wiley.

Kenny, D. A., & La Voie, L. (1984). The social relations model. *Advances in Experimental Social Psychology*, *18*, 141–182. https://doi.org/10.1016/S0065-2601(08)60144-6

Kenny, D. A., & Ledermann, T. (2010). Detecting, measuring, and testing dyadic patterns in the actor-partner interdependence model. *Journal of Family Psychology*, *24*(3), 359–366. https://doi.org/10.1037/a0019651

Kiesler, D. J. (1988). *Therapeutic metacommunication: Therapist impact disclosure as feedback in psychotherapy*. Consulting Psychologists Press.

Kivlighan, D. M., Jr., & Shaughnessy, P. (1995). Analysis of the development of the working alliance using hierarchical linear modeling. *Journal of Counseling Psychology*, *42*(3), 338–349. https://doi.org/10.1037/0022-0167.42.3.338

Kivlighan, D. M., Jr., Hill, C. E., Gelso, C. J., & Baumann, E. (2016). Working alliance, real relationship, session quality, and client improvement in psychodynamic psychotherapy: A longitudinal actor partner interdependence model. *Journal of Counseling Psychology*, *63*(2), 149–161. https://doi.org/10.1037/cou0000134

Lanza, S. T., Tan, X., & Bray, B. C. (2013). Latent class analysis with distal outcomes: a flexible model-based approach. *Structural Equation Modeling*, *20*, 1–26. https://doi.org/10.1080/10705511.2013.742377

Leung, K. (2010). Beliefs in Chinese culture. In M. H. Bond (Ed.), *The Oxford handbook of Chinese psychology* (pp. 221–240). Oxford University Press.

Li, X., & Kivlighan, D. M., Jr. (2020). Examining therapy dynamics and session outcome using differential equations model and multilevel data disaggregation. *Psychotherapy Research*, *30*(5), 604–621. https://doi.org/10.1080/10503307.2019.1649730

Li, X., Kivlighan, D. M., Jr., & Hill, C. E. (2020). Follow you or follow me? Examining therapist responsiveness to client and responsiveness to self, using differential equations model and multilevel data disaggregation from an interpersonal theory framework. *Journal of Counseling Psychology*, *67*(5), 608–621. https://doi.org/10.1037/cou0000406

Li, X., Kivlighan, D. M., Jr., Hill, C. E., Hou, Z.-J., & Xu, M. (2018). Helping skills, working alliance, and session depth in China: A multilevel analysis. *The Counseling Psychologist*, *46*(3), 379–405. https://doi.org/10.1177/0011000018763965

Li, X., O'Connor, S., Kivlighan, D. M., Jr., & Hill, C. E. (2021). "Where is the relationship" revisited: Using actor-partner interdependence modeling and common fate model in examining dyadic working alliance and session quality. *Journal of Counseling Psychology*, *68*(2), 194–207. https://doi.org/10.1037/cou0000515

Lichtenberg, J. W., & Barké, K. H. (1981). Investigation of transactional communication relationship patterns in counseling. *Journal of Counseling Psychology*, *28*(6), 471–480. https://doi.org/10.1037/0022-0167.28.6.471

Lichtenberg, J. W., & Kobes, K. J. (1992). Topic control as relational control and its effect on the outcome of therapy. *Psychological Reports*, *70*(2), 391–401. https://doi.org/10.2466/pr0.1992.70.2.391

Lichtenberg, J. W., & Semon, D. A. (1986). *A study of the dynamics of social influence in counseling* [Paper presentation]. Paper presented at the 94th Annual Convention of the American Psychological Association, Washington, DC.

Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, *1*(3), 86–92. https://doi.org/10.1027/1614-2241.1.3.86

Markin, R. D., Kivlighan, D. M., Jr., Gelso, C. J., Hummel, A. M., & Spiegel, E. B. (2014). Clients' and therapists' real relationship and session quality

in brief therapy: An actor partner interdependence analysis. *Psychotherapy*, *51*(3), 413–423. https://doi.org/10.1037/a0036069

Marmarosh, C. L., & Kivlighan, D. M., Jr., (2012). Relationships among client and counselor agreement about the working alliance, session evaluations, and change in client symptoms using response surface analysis. *Journal of Counseling Psychology*, *59*(3), 352–367. https://doi.org/10.1037/a0028907

McNeish, D. M., & Stapleton, L. M. (2016). The effect of small sample size on two-level model estimates: A review and illustration. *Educational Psychology Review*, *28*(2), 295–314. https://doi.org/10.1007/s10648-014-9287-x

Miao, Y. J., & Liang, X. L. (2012). A review of studies on modesty. *Shanghai Research on Education*, *1*, 42–45.

Muthen, L. K., & Muthen, B. O. (2017). *Mplus user's guide* (8th ed.). Muthen & Muthen.

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling*, *14*(4), 535–569. https://doi.org/10.1080/10705510701575396

Oettingen, G. (1995). Cross-cultural perspective on self-efficacy. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 149–176). Cambridge University Press. https://doi.org/10.1017/CBO9780511527692.007

Olinick, S. L., Poland, W. S., Grigg, K. A., & Granatir, W. L. (1973). The psychoanalytic work ego: Process and interpretation. *The International Journal of Psycho-Analysis*, *54*, 143–151.

Owen, J. J., Adelson, J., Budge, S., Kopta, S. M., & Reese, R. J. (2016). Good-enough level and dose-effect models: Variation among outcomes and therapists. *Psychotherapy Research*, *26*(1), 22–30. https://doi.org/10.1080/10503307.2014.966346

Paz, A., Rafaeli, E., Bar-Kalifa, E., Gilboa-Schectman, E., Gannot, S., Laufer-Goldshtein, B., Narayanan, S., Keshat, J., & Atzil-Slonim, D. (2021). Intrapersonal and interpersonal vocal affect dynamics during psychotherapy. *Journal of Consulting and Clinical Psychology*, *89*(3), 227–239. https://doi.org/10.1037/ccp0000623

Peluso, P. R., Liebovitch, L. S., Gottman, J. M., Norman, M. D., & Su, J. (2012). A mathematical model of psychotherapy: An investigation using dynamic non-linear equations to model the therapeutic relationship. *Psychotherapy Research*, *22*(1), 40–55. https://doi.org/10.1080/10503307.2011.622314

Ramseyer, F., & Tschacher, W. (2011). Nonverbal synchrony in psychotherapy: Coordinated body movement reflects relationship quality and outcome. *Journal of Consulting and Clinical Psychology*, *79*(3), 284–295. https://doi.org/10.1037/a0023419

Roe, D., Dekel, R., Harel, G., & Fennig, S. (2006). Clients' reasons for terminating psychotherapy: A quantitative and qualitative inquiry.

Psychology and Psychotherapy: Theory, Research and Practice, *79*(Pt 4), 529–538. https://doi.org/10.1348/147608305X90412

Rønnestad, M. H., & Skovholt, T. M. (2003). The journey of the counselor and therapist: Research findings and perspectives on professional development. *Journal of Career Development*, *30*(1), 5–44. https://doi.org/10.1177/089484530303000102

Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, *7*(2), 147–177. https://doi.org/10.1037/1082-989X.7.2.147

Schwartz, R. A., Chambless, D. L., McCarthy, K. S., Milrod, B., & Barber, J. P. (2019). Client resistance predicts outcomes in cognitive-behavioral therapy for panic disorder. *Psychotherapy Research*, *29*(8), 1020–1032. https://doi.org/10.1080/10503307.2018.1504174

Soma, C. S., Baucom, B. R. W., Xiao, B., Butner, J. E., Hilpert, P., Narayanan, S., Atkins, D. C., & Imel, Z. E. (2020). Coregulation of therapist and client emotion during psychotherapy. *Psychotherapy Research*, *30*(5), 591–603. https://doi.org/10.1080/10503307.2019.1661541

Tracey, T. J. (1985). Dominance and outcome: A sequential examination. *Journal of Counseling Psychology*, *32*(1), 119–122. https://doi.org/10.1037/0022-0167.32.1.119

Tracey, T. J. (1987). Stage differences in the dependencies of topic initiation and topic following behavior. *Journal of Counseling Psychology*, *34*(2), 123–131. https://doi.org/10.1037/0022-0167.34.2.123

Wallin, D. J. (2007). *Attachment in psychotherapy*. Guilford press.

Wampold, B. E., & Kim, K. (1989). Sequential analysis applied to counseling process and outcome: A case study revisited. *Journal of Counseling Psychology*, *36*(3), 357–364. https://doi.org/10.1037/0022-0167.36.3.357

Wieder, G., & Wiltshire, T. J. (2020). Investigating coregulation of emotional arousal during exposure-based CBT using vocal encoding and actor-partner interdependence models. *Journal of Counseling Psychology*, *67*(3), 337–348. https://doi.org/10.1037/cou0000405

Zhang, Y., Hu, J., Evans, C., Jin, L. W., Wu, M. Y., Wang, C. Y., Zhang, X. J., Lu, W. H., & Chen, G. P. (2020). Psychometric properties of the Chinese version of the clinical outcomes in routine evaluation-outcome measure (CORE-OM). *British Journal of Guidance & Counselling*, *48*(2), 289–299. https://doi.org/10.1080/03069885.2019.1682120

Zilcha-Mano, S., Snyder, J., & Silberschatz, G. (2017). The effect of congruence in patient and therapist alliance on patient's symptomatic levels. *Psychotherapy Research*, *27*(3), 371–380. https://doi.org/10.1080/10503307.2015.1126682