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Interpersonal Process Differentiating Patient-Therapist Dyads with High Versus Low Convergence in Alliance Ratings

A Dissertation Presented

by

BRIEN J. GOODWIN

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 2022

Clinical Psychology

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Interpersonal Process Differentiating Patient-Therapist Dyads with High Versus Low Convergence in Alliance Ratings

A Dissertation Presented

by

BRIEN J. GOODWIN

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DEDICATION

In memory of Dr. William Brilhart

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ABSTRACT

INTERPERSONAL PROCESS DIFFERENTIATING PATIENT-THERAPIST DYADS WITH HIGH VERSUS LOW CONVERGENCE IN ALLIANCE RATINGS

SEPTEMBER 2022

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Objective: In a study of two cognitive-behaviorally based therapies for generalized anxiety disorder (GAD), increasing convergence on patients and therapists' post-session ratings of the quality of their shared therapeutic alliance was associated with better treatment outcomes (Coyne et al., 2018). To better understand this emerging evidence-based construct, the present study used observer-based coding to examine whether multiple theory- and clinically relevant *in-session* interpersonal microprocesses differentiated dyads known to possess high versus low early alliance convergence. First, I hypothesized that high versus low convergence dyads would be characterized by more overall *positive interpersonal complementarity* (i.e., affiliative, coordinated exchanges); moreover, in light of an interpersonal vulnerability associated with GAD (i.e., high deference to others), I investigated as an aim 1 subquestion whether a specific type of positive complementary sequence (i.e., the patient asserting and separating from the therapist's influence, and the therapist complementing this patient bid with affirmation and understanding) was more representative of the high versus low convergence group. Second, given their proclivity for misunderstanding and frustration in social exchanges

(e.g., mixed messages of friendliness and hostility, double-binding messages of control and emancipation), I hypothesized that fewer patient and therapist *complex communications* would characterize the high versus low convergence dyads. Finally, given its positive influence on various outcomes in close relationships, I predicted that therapists in the high versus low convergence group would engage in more *self-disclosure* across early treatment. ***Method***: I selected 8 high and 8 low convergence dyads from Coyne et al.'s (2018) sample, where patients with severe GAD received either 15 sessions of cognitive behavioral therapy (CBT) or CBT integrated with motivational interviewing (MI-CBT). The index of early alliance convergence was derived from patients and therapists' session-by-session ratings (from sessions 2 through 8) on their respective versions of the Working Alliance Inventory-Short Form. To control for a potential treatment effect on the interpersonal processes of interest, the high and low convergence dyads were balanced across CBT and MI-CBT. To control for a possible therapist effect on the interpersonal processes, I selected a single high- and low-convergence case for each of 8 clinicians. Independent raters conducted a fine-grained assessment of patient and therapist interpersonal transactions using the Structural Analysis of Social Behavior. Specifically, they coded the middle 20-minutes of sessions 2, 5, and 8. I used inferential statistics and effect size estimates to test the research questions. ***Results***: Regarding aim 1, there was no significant difference in the mean level of positive complementarity between the high and low alliance convergence dyads; $t(14) = 0.04$, $p = .976$, $d = 0.01$. Regarding the aim 1 subquestion, the between-group difference in the aforementioned specific type of positive complementary sequence approached significance; $U = 14.50$, $p = 0.06$, $d = 0.79$; namely, the mean probability of

this sequence occurring in the high convergence dyads was 0.79 *SD*s greater than that of the low convergence dyads. For aim 2, there was no significant difference in the mean level of complex communications between the high and low alliance convergence dyads; $t(14) = 0.76$, $p = .459$, $d = 0.36$. Likewise, for aim 3, there was no significant difference in the mean level of therapist self-disclosure between the high and low alliance convergence dyads; $t(14) = 0.44$, $p = .667$, $d = 0.21$. ***Conclusions.*** Results suggest that for people receiving variants of CBT for GAD, alliance convergence patterns may be distinguished more by specific and sequential patient-therapist exchanges rather than overall levels of interpersonal processes. ***Implications***: In the context of interpersonal theory and alliance research, this study provides meaningful information to clinicians as to particular, pathology-relevant dyadic transaction that may typify alliance convergence – a dyadic factor that explains unique variance in patient improvement.

Keywords: alliance convergence, interpersonal process, Structural Analysis of Social Behavior (SASB), cognitive behavioral therapy, motivational interviewing, generalized anxiety disorder

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CHAPTER 1

INTRODUCTION

Social psychological research on close relationships has consistently shown that dyadic convergence, or the temporal process of two people becoming more concordant in their attitudes, perceptions, and emotions, is a common interpersonal process (e.g., Anderson & Keltner, 2004). For example, attitudinal and perceptual convergence occurs more in friendship dyads than acquaintance dyads among those living in the same residential setting (Kenny & Kashy, 1994). Moreover, this convergence pattern is common among dating partners (e.g., Duck, 1994; Kenny, 1994), college roommates (Anderson et al., 2003), and spouses (Anderson & Keltner, 2004).

From a neural-behavioral perspective, some have argued that emotional convergence serves a basic evolutionary function; that is, emotional similarity activates similar representations for each dyad member that, in turn, coordinates behavior and facilitates efficient goal-oriented action (Preston & de wall, 2005). Therefore, it seems unsurprising that dyadic convergence relates to adaptive relationship outcomes. For example, one study demonstrated that greater emotional convergence in dating and married couples associated with greater trust and relationship satisfaction (Gonzaga et al., 2007). In another study, greater emotional convergence predicted subsequent relationship satisfaction and stability in romantically involved dyads, as well as perceived closeness and stability of friendship in college roommates (Anderson et al., 2003).

Though a distinct type of close relationship, the therapist-patient dyad is largely governed by the same interpersonal processes that occur in other relational contexts (Derlega et al., 1992). In fact, drawing on the perceptual conformity research of Sherif

(1936) and Asch (1952), Pepinski and Karst (1964) posited that convergence in both perception and language occur in therapy. However, despite their early call for researchers to examine convergence, and its antecedents and consequences, in the psychotherapy context, the field has only recently placed this dyadic construct under more empirical scrutiny. And, perhaps unsurprisingly, most of the relatively few therapy convergence studies to date have largely focused on the quintessential relationship variable of the therapeutic alliance, or patient-therapist agreement on treatment tasks and goals, and their experience of an affective bond (Bordin, 1979).

Consistent with the prevalence of convergence in other types of close relationships, psychotherapy researchers have demonstrated that, in general, patient-therapist dyads tend to perceive the quality of their shared alliance more similarly over the course of treatment (as indicated with post-session self-report ratings). For example, and also underscoring the pantheoretical and pandiagnostic properties of alliance convergence, this pattern has been shown in psychodynamic psychotherapy for diverse problems (Hersoug et al., 2001) and cognitive behavioral therapy (CBT) for personality disorders (Atzil-Slonim et al., 2015). However, whereas these studies established the presence of dyadic alliance convergence, they did not examine its association with treatment outcome.

Addressing this gap, a study of patients with chronic depression receiving either cognitive-behavioral analysis system of psychotherapy or brief supportive psychotherapy demonstrated that greater alliance convergence across treatment associated with greater concurrent depression reduction (Laws et al., 2017). However, limited by only three post-session alliance ratings, this study could not support a directional effect of convergence

on *subsequent* symptom change. To address this limitation of non-temporality, a study of two CBT-based treatments for generalized anxiety disorder (GAD) demonstrated that greater alliance convergence (again measured with parallel patient and therapist versions of a post-session self-report measure) during early treatment (sessions 2 through 8) was associated with greater reductions in subsequent worry and global distress (sessions 9 through 15; Coyne et al., 2018). Taken together, the extant (albeit limited) research base suggests that, on average, therapists and their patients converge in their perceptions of the alliance over time, and that more of such convergence tends to associate with adaptive treatment outcomes (Coyne, 2016).

Given the growing support for the therapeutic value of patient-therapist alliance convergence, it seems important to identify specific *in-session* psychotherapy processes that may characterize (and, thus, facilitate or detract from) the therapy participants feeling increasingly more attuned in their working collaboration and relational bond as the treatment unfolds. As convergence is an inherently dyadic process, it occurs in an omnipresent interpersonal context comprised of ongoing social transactions. Thus, to give clinicians a better sense of what alliance convergence – a now evidence-based facilitative construct – "looks like," and how it might be cultivated or impeded, a logical extension of existing research on this common factor would involve a microprocess analysis of theoretically salient, in-session, and moment-to-moment patient-therapist transactions (Gonçalves et al., 2014; Hawes et al., 2013). To help achieve this clinically translational goal, the Structural Analysis of Social Behavior (SASB; Benjamin, 1974, 1996, 2018) is an ideal methodological fit (Constantino, 2000).

The SASB is rooted in interpersonal theory, which contends that personality develops through interactions with important others (e.g., parents, childhood friends) and therefore cannot be separated from the social context in which it exists (Benjamin, 1984, 2018; Kiesler, 1996; Sullivan, 1953). Adopting this framework, Leary (1957) and Schaefer (1965) devised their respective early circumplex models to provide a means for conceptualizing and organizing interpersonal behavior. Both circular models are structured around the two purportedly fundamental dimensions of interpersonal functioning: a horizontal axis of affiliation (ranging along a continuum from cold-hearted to warm-agreeable, and rejection to acceptance, respectively) and a vertical axis of control (ranging from assured-dominant to unassured-submissive, and psychological control to psychological autonomy, respectively). When taking both axes into account, one can codify interpersonal behavior and transactions in two-dimensional space (e.g., a person acting toward others in a warm and dominant manner, or in a cold and submissive manner).

Benjamin's (1974) SASB both synthesized and extended these single-surface models. Though still organized around the same fundamental axes of affiliation and control, the SASB uses two surfaces to depict interpersonal transactions in order to accommodate differences in interpersonal *focus* between interactants. That is, sometimes people are transitively *acting on* others, whereas at other times they may be intransitively *reacting to* others. With these different foci, the control axis is more generally termed "interdependence" in SASB parlance (as, for example, trying to influence another is a transitive action, whereas deferring to another is an intransitive reaction, with both reflecting a degree of interdependence or enmeshment).

More specifically, SASB surface 1 represents transitive actions that are often more parent-like in nature. Like with any circumplex, such actions can be located in two-dimensional space depending on how affiliative (from hostile to loving) and controlling (from controlling to emancipating) they are. Appendix A depicts the combined quadrant and cluster versions of the SASB, each depicting different combinations of the underlying dimensions. At the cluster level, for example, a moderate level of transitive affiliation and control toward another would be codified as "Nurturing and Protecting," whereas a neutral level of affiliation and substantial control would be codified as "Watching and Controlling." As another example, disaffiliative/hostile and emancipating/autonomy-granting transitive action would be labeled "Ignoring and Neglecting."

The parallel SASB surface 2 represents intransitive actions that are often more child-like in nature. Again, as per Appendix A's cluster version, and applying the same circular logic, a moderate level of intransitive affiliation and deference in reaction to another would be codified as "Trusting and Relying," whereas a neutral level of affiliation and substantial deference would be codified as "Deferring and Submitting." As another example, a disaffiliative/hostile and separating/autonomy-taking intransitive reaction would be labeled "Walling Off and Distancing." Broadly speaking, friendly actions/reactions on the right side of the model are indicative of more secure, positive attachment, whereas hostile actions/reactions on the left side of the model are indicative of more insecure, negative attachment (Benjamin, 1974). In terms of base rates, it is perhaps unsurprising that therapists spend relatively more time focused on the patient (surface 1) and patients on themselves (surface 2; Benjamin & Critchfield, 2010).

However, like in any exchange, either participant can engage transitively or intransitively; hence, the SASB offers a comprehensive means of capturing the full complexity of interpersonal transactions. Accordingly, the SASB has been used in the study of therapeutic processes (e.g., Ahmed et al., 2012; Connolly et al., 1996; Dunkle & Friedlander 1996; Henry et al., 1986; Rudy et al., 1985) and, as noted, has clear relevance for examining the processes underlying dyadic alliance convergence.

In that vein, the SASB instantiates important dyadic principles of prediction, such as interpersonal complementarity (Benjamin, 1984, 1996; Constantino, 2000). Broadly speaking, complementarity refers to interpersonal process in which one person's behavior evokes a reciprocal behavior in the other that is concordant in affiliation (e.g., friendliness begets friendliness, hostility begets hostility) and opposite in control (e.g., control pulls for submission, autonomy-granting pulls for separation; Carson, 1969; Kiesler, 1983, 1996). For example, at a level greater than chance, transitive friendly-controlling behavior (the right lower quadrant of surface 1) would pull for intransitive friendly-submissive behavior (the parallel right lower quadrant of surface 2). The following is an example of such an exchange in the therapy context:

Therapist: Hearing what you said at the end of last session, it might be helpful to try some relaxation exercises today. ("Nurturing and Protecting")

Patient: Yes, that sounds great. ("Trusting and Relying")

Or, as another example, hostile-deferent intransitive behavior (the left lower quadrant of surface 2) would pull for hostile-controlling transitive action (the parallel left lower quadrant of surface 1). The following is an example of such an exchange in the therapy context:

Patient: I don't know, I sort of tried doing the homework because you said it would help. ("Sulking and Scurrying")

Therapist: Maybe you didn't spend enough time on it or had trouble following the directions. ("Belittling and Blaming")

Thus, complementarity as per the SASB model captures transitive and intransitive transactions that are positioned in the same interpersonal space across surfaces 1 and 2 (Benjamin, 1974, 1996, 2018).

Moreover, as reflected in the previous examples, complementarity can be positive or negative depending on whether the behaviors are located on the right (affiliative) or left (hostile) side of the model, respectively. Irrespective of the valence, complementarity represents stable relational patterns that are well-coordinated and non-"frustrated" (Kiesler, 1996; Sullivan, 1953). However, *negative complementarity* is purportedly indicative of maladaptive interpersonal patterns and, when present in therapy, might represent a replaying of such patterns (a type of objective countertransference; Kiesler, 1996). Indeed, supporting this notion of it being a hindering therapy process, negative complementarity has been shown to differentiate poor from good outcome cases (e.g., Henry et al., 1986). *Positive complementarity*, on the other hand, purportedly supports healthy attachment and typifies relationships that are affiliative, stable, and low in anxiety (Benjamin, 2018). Indeed, supporting this notion of it being a facilitative therapy process, positive complementarity has been shown to differentiate good from poor outcome cases (e.g., Henry et al., 1986; Svartberg & Stiles, 1992). Further, with such features of stable, anxiety-free coordination, it is plausible that overall positive complementarity might characterize, or facilitate, interactants coming to feel more attuned in their perceptions of

their shared alliance quality over time. Moreover, depending on the specific psychological vulnerabilities of patients with a given mental health condition, it is possible that there may be *particular* positive complementarity sequences that can serve as therapeutically "corrective experiences," and such sequences may also have a bearing on alliance convergence (again, feeling increasingly more attuned in their treatment goals, working collaboration, and relational bond as the treatment unfolds).

For example, research has demonstrated that people with GAD tend to be excessively accommodating and nonassertive in their relationships (e.g., Eng & Heimberg, 2006; Gomez Penedo et al., 2017; Przeworski et al., 2011; Shin & Newman, 2019). Thus, when patients with GAD initiate a transactional sequence with their more profile-consistent behavior of deference to others (in this case, submitting to, or trustingly relying on the direction of the therapist), the therapist complementing the patient's deference with control and instruction would replay familiar, interpersonal patterns (Muir et al., 2021; Westra & Constantino, 2019). The following is an example of such an exchange in the therapy context:

Patient: I'll just take you're lead on what to do next. ("Deferring and Submitting")

Therapist: Great, muscle relaxation is an important part of this treatment, so let's do it now. ("Watching and Controlling")

Such recapitulation, while familiar, stable, and perhaps even comforting, could detract from an experience of *change* from what is expected and typical – with such change being at least an implicit, if not often an explicit, goal of therapy.

Alternatively, if and when patients with GAD initiates an interpersonal sequence with a more atypical, but adaptive, attempt to take autonomy (in this case, separating from the therapist's influence and freely disclosing), how the therapist responds could be paramount for clinical change or lack thereof. Namely, if a therapist tries to regain the more typical controlling stance vis-à-vis this historically more deferent individual, it could contribute to a recapitulation of the interpersonal pattern that is a prototypical contributor to GAD pathology. However, if the therapist complements the patient's separation and autonomy-taking with what is likely novel affirmation and understanding, it could represent an unfamiliar (and perhaps even initially unsettling) important-other response that ultimately contributes to a patient's corrective relational experience (Muir et al., 2021; Westra & Constantino, 2019). The following is an example of such an exchange in the therapy context:

Patient: I actually don't think I get much out of these muscle relaxation exercises. ("Asserting and Separating")

Therapist: Ahh, that's *really* important feedback and I hear you. Can you help me understand your experience of these exercises? ("Affirming and Understanding")

This type of response might inherently represent the therapist validating directions and expressions in therapy that the *patient* most values and needs. And, in doing so, it would follow that this particular positive complementary sequence could plausibly characterize, or facilitate, the interactants feeling more attuned in their patient-centered relational bond and working collaboration (i.e., high alliance convergence).

Whereas such instances of specific, directional complementarity represent participant behaviors in discreet locations in interpersonal space, there can also be times

when a transaction (including in psychotherapy) is marked by an interactant *simultaneously* occupying two or more locations in interpersonal space (Benjamin & Cushing, 2000). Such *complex communications* can take varied forms. For example, they could reflect inseparably linked behaviors occurring on both interpersonal surfaces; for example, a therapist saying "I even schedule appointments with you on my day off" is both intransitively focused on self ("Disclosing and Expressing") and transitively focused on other ("Nurturing and Protecting"). Alternatively, such complexity may result from simultaneous, and often contradictory, actions with the same focus (i.e., on the same SASB surface). For example, a patient saying to their therapist in a skeptical tone, "If you say it will help, then I guess I'll do it," is both "Trusting and Relying" (friendly deference) and "Walling Off and Distancing" (hostile separation). Or, a communication could present a double-binding message of control and emancipation, such as a therapist saying, "I'm happy to get your input on the agenda, but only after we review your homework." The first element of this utterance gives seeming autonomy, whereas the second elements maintains a controlling influence. In general, complex communications are an inefficient means of social exchange, demand more cognitive resources to process and decipher, and yield more discontinuous, frustrated, and miscoordinated interpersonal process – especially when considering that a recipient will be pulled to complement *both* aspects of the communication (Knapp & Daly, 2011). Consequently, it is plausible that fewer complex communications might characterize the high versus low convergence dyads; stated in the converse, clearer, coordinated communications might typify, or facilitate, the interactants feeling more attuned in their perceptions of their shared alliance quality over time.

In contrast to complex communications, straight self-disclosure in close relationships (described in SASB language as a focus on self that is moderately affiliative and autonomy-taking) has been shown to increase intimacy, perceptual attunement, trust, relational satisfaction, and the frequency of disclosure in the interacting other (Greene et al., 2006). For example, a meta-analysis of 94 independent samples indicated a small, but significant positive relation between self-disclosure and likeability across a wide range of different relationship types (d = .28; Collins & Miller, 1994). Moreover, in a study of romantic partners, greater self-disclosure was associated with greater self-esteem, confidence as a relational partner, and perceived relationship quality (Sprecher & Hendrick, 2004).

In the psychotherapy context, therapist self-disclosure can take on different flavors. For example, it could reflect an articulation of the therapist's momentary internal thinking about the session or treatment process (e.g., "I'm thinking this might be a good time to shift gears and talk about your marriage"). Or it could reflect a vulnerable expression of one's past experiences (e.g., "I too experienced some issues with addiction") and/or current emotional state (e.g., "I'm feeling a sense of sadness come over me as you discuss your experiences"). For therapist self-disclosure versus non-disclosure, in general, a meta-analytic review of 53 studies found that patients reported: (a) more favorable perceptions of disclosing therapists overall (d = .24), (b) greater perceived similarity with the disclosing therapists (d = .27), (c) greater therapist attractiveness (d = .34), (d) greater perception that the disclosing therapist was a "whole person" (d = .34), and (e) a greater likelihood of disclosing themselves (d = .14; Henretty et al., 2014). Given such findings in both social psychological and clinical contexts, it is

plausible that greater *therapist self-disclosure* (a lower base rate activity for clinicians vs. their patients) might characterize the high versus low convergence dyads.

To address the aforementioned questions, I used the SASB observer coding system to derive the indices of complementarity, complex communications, and therapist self-disclosures. I then examined whether these microprocess variables uniquely differentiated dyads known to possess high versus low early alliance convergence, or relational attunement, in the context of two variants of CBT for GAD (see Westra et al., 2016). This work followed the aforementioned Coyne et al. (2018) study, which demonstrated that greater early alliance convergence (across sessions 2 through 8) associated with greater subsequent patient improvement (across sessions 9 through 15). First, I hypothesized that overall positive complementarity during early treatment (i.e., averaged across sessions 2, 5, and 8) would be significantly greater in dyads selected for having high versus low alliance convergence. Additionally, given the interpersonal underpinnings of GAD and the change-oriented nature of CBT, I investigated whether the previously stated *specific type* of positive complementary sequence (corrective experience) was more representative of the high versus low alliance convergence group. Second, I hypothesized that fewer complex communications (stemming from either participant) during early treatment (i.e., averaged across sessions 2, 5, and 8) would characterize the selected high versus low alliance convergence dyads. Finally, I hypothesized that greater therapist self-disclosure during early treatment (i.e., averaged across sessions 2, 5, and 8) would also characterize the selected high versus low alliance convergence dyads.

CHAPTER 2

METHOD

2.1 Dataset Overview

Data for this study derived from the aforementioned randomized controlled trial (RCT) for GAD that compared the efficacy of 15 sessions of weekly, 50-minute standard CBT versus CBT with motivational interviewing (MI) responsively integrated to address patient resistance (MI-CBT; Westra et al., 2016). For context, across acute treatment, the conditions did not differ on reductions in worry or global distress. However, across a 12-month follow up, MI-CBT patients had greater reductions on these outcomes than CBT-alone patients. Attrition was low across both treatment groups, with just 10 dropouts in CBT (23%) and 4 in MI-CBT (10%).

2.2 Participants

2.2.1 Therapists

Twenty-one female trainees self-selected into condition and provided either CBT (n = 12) or MI-CBT (n = 9) only. This nested design feature helped to mitigate allegiance effects that can occur when therapists are "crossed" over comparators. The therapists did not significantly differ between treatment conditions on age (MI-CBT: M = 28.33 years, SD = 2.00; CBT: M = 29.08 years, SD = 4.32), $t(19) = -.482$, $p = .636$, or clinical experience (MI-CBT: M = 451.53 hours, SD = 647.27; CBT: M = 190.21 hours, SD = 94.44), $t(7.20) = 1.13$, $p = .293$. The MI-CBT therapists' caseloads ranged from 1 to 13 cases (Mdn = 4), whereas CBT therapists' caseloads ranged from 1 to 6 cases (Mdn = 4).

2.2.2 Patients

Trial patients were 85 adults randomly assigned to CBT (n = 43) or MI-CBT (n = 42) at one of two sites in Toronto, Canada. To be included, individuals had to meet Diagnostic and Statistical Manual of Mental Disorders versions IV, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) and 5 (DSM-5; American Psychiatric Association, 2013) criteria for principal GAD, and score above a high worry severity cutoff of ≥ 68 on the Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990). To enhance generalizability, most comorbid diagnoses were allowable. Also, although unmedicated patients were required to remain unmedicated during the trial, being on antidepressant medication was allowable if the individual was using the same medication and dose for at least 3 months prior to the study and agreed to remain on this dose throughout treatment. Exclusion criteria included concurrent psychotherapy, benzodiazepine use, psychotic spectrum or bipolar disorders, major cognitive impairment, substance dependence within the past 6 months, and significant current suicidal ideation. Table 1 presents the full sample descriptive statistics by treatment condition.[1]

2.2.3 Alliance Convergence Dyads

For the present study, I built on the previously discussed Coyne et al. (2018) alliance convergence study, for which the data also derived from Westra et al.'s (2016) RCT. In the trial, both therapists and patients completed after each session their respective versions of the Working Alliance Inventory-Short Form (WAI-S; Horvath & Greenberg, 1989; Tracey & Kokotovic, 1989; see Appendices B and C, respectively), a

[1] As indicated in the table, the conditions differed significantly, or approached a significant difference, on just three variables at baseline. In CBT vs. MI-CBT: (1) there were more women and fewer men; (2) patients reported higher motivation for change, as per the Change Questionnaire (CQ; Miller & Johnson, 2008), which includes 12 items each rated on a scale from 0 to 10; and (3) patients trended toward using more medication.

widely used and psychometrically sound[2] measure that captures Bordin's (1979) tripartite alliance conceptualization of agreement on treatment goals, agreement on treatment tasks, and felt affective bond. Each of the measure's 12 items are rated on a 7-point scale (total score range = 12 to 84), with higher scores indicating better alliance quality. To create the dyadic alliance convergence variable, Coyne et al. used hierarchical linear modeling (HLM; Raudenbush et al., 2011) to first create discrepancy scores between therapists and patients' alliance ratings at each session. Next, they estimated the rate of change in these discrepancy scores during early treatment (i.e., sessions 2 through 8). Empirical Bayes (EB) estimates were then output from the model, with these estimates representing each dyad's rate of change in discrepancy (for a graphical depiction of hypothetical high and low alliance convergence dyads, see Figure 1, Panel A and B, respectively).

For the present study, and to facilitate my "known-groups" comparison, I selected from this dataset 8 high early treatment alliance convergence dyads (i.e., those whose convergence index was >1.5 *SD*s above the mean level of alliance convergence in the full sample) and 8 low early treatment alliance convergence dyads (i.e., those whose convergence index was >1.5 SDs below the mean level of alliance convergence in the full sample). In the Coyne et al. (2018) study, alliance convergence was present across both variants of CBT, and when it was higher, it was associated with better outcomes, irrespective of condition. Thus, I included dyads from both treatment groups. To control for a potential treatment difference on interpersonal process, I balanced the 16 dyads across treatment groups (8 per condition). To control for a potential therapist effect on interpersonal process, I also selected 1 high- and 1 low-convergence case for each of the

[2] In the context of the parent trial, the WAI-S exhibited excellent internal consistency for both the therapist (average α = .87) and patient (average α = .85) versions rated across the entirety of acute treatment.

8 therapists whose convergence scores met the selection criteria. Patient baseline characteristics did not significantly differ between the two alliance convergence groups, with the exception of patient self-identified race, $t(14) = 2.55$, $p = .023$. See Table 2 for patient characteristics and Table 3 for therapist characteristics for the selected dyads.

2.3 Treatments

2.3.1 CBT

For both conditions, therapists delivered CBT according to multiple evidence-based protocols for treating GAD (Borkovec & Costello, 1993; Borkovec & Mathews, 1988; Borkovec et al., 2002). Targeting the core features of GAD, including uncontrollable worry, inhibited emotional processing secondary to worry, and chronic hyperarousal, this multicomponent treatment included psychoeducation about worry/anxiety, exposure to worry and worry cues, applied relaxation, behavioral approach tasks, thought monitoring, and challenging distorted cognitions. Therapists managed patient resistance using techniques recommended in the CBT literature (e.g., functional analysis, collaborative goal setting, problem-solving; Beck, 2005; Sanderson & Bruce, 2007; Tompkins, 2004).

2.3.2 MI-CBT

Therapists delivered the integrative treatment according to Westra's (2012) guidelines for assimilating MI principles (Miller & Rollnick, 2002) into CBT for anxiety. Applied to GAD, MI is a person-centered approach focused on helping patients resolve ambivalence about reducing their worry and addressing interpersonal resistances that might stem from such ambivalence. MI-specific strategies included helping patients develop discrepancies between their current experiences and their most valued

experiences (to promote self-arguments for moving toward their valued self) and purposefully "rolling with" patient resistance by empathically exploring both the positive and negative aspects of behavior change, while validating and normalizing ambivalence about such change.

To match the 15 sessions of standard CBT, but also to ensure some dose of MI, patients in the integrative condition first received 2 to 4 sessions of "pure" MI followed by 13 to 11 integrative CBT sessions. Though most MI-CBT patients received all 4 preparatory MI sessions, for patients highly motivated for change-oriented interventions, the shift to CBT occurred after session 2 or 3. In the subsequent CBT-based sessions, therapists continued to use MI "spirit" (collaboration, empathy, validation, evocation, and enhancing self-efficacy) as a foundational stance, and they explicitly shifted into *primary* MI strategies vis-à-vis markers of patient resistance. Once a resistance episode was deemed resolved, therapists shifted back into CBT with MI spirit. These marker-driven responsive shifts occurred as needed. Therapist adherence to their respective treatment protocol was observer-rated on a random subset of 20% of sessions for each therapist in each condition. As expected, adherence to CBT was high across both conditions, with adherence measures discriminating between conditions on MI's key ingredients, both of the preparatory and responsively integrated type (see Westra et al., 2016, for additional details).

2.4 Interpersonal Process Measurement

To assess the relevant interpersonal processes between the high and low alliance convergence groups, I used the observer coding version of the SASB (Benjamin, 1974, 1996, 2018). Specifically, coding focused on the two interpersonal surfaces discussed

previously (see Appendix A).[3] As noted, the SASB model captures interpersonal transactions in circular, two-dimensional space according to the degrees of affiliation (ranging from hostile/rejecting to friendly/loving) and interdependence (ranging from more differentiated to more enmeshed) present in transitive behaviors toward another (surface 1) and intransitive reactions to another (surface 2). Across these surfaces, and at the cluster level, there are a total of 16 types of transactions that can be coded to reflect these varying combinations. Each has a corresponding two-word descriptor and a two-digit numerical code, with the first digit indicating the focus of the behavior (1 for focus on other, and 2 for focus on self-in-relation to other) and the second digit indicating the position of the given behavior on the circumplex. For example, a 1-1 ("Freeing and Forgetting") signifies transitive behavior that is focused on other, neutral in affiliation, and extremely differentiated. A 2-4 ("Trusting and Relying") represents intransitive behavior that is focused on self, moderate in affiliation, and moderate in deference. In many instances, a single interpersonal transaction is assigned a single code; however, in some instances, more than one code is necessary to capture the full essence of the interpersonal process. For example, "You *never* stand up for yourself, at least from what I remember," would render a multiple code. The first element of this statement is focused on the other, hostile, and controlling, and would receive a 1-6 ("Belittling and Blaming") code. The second element, though, is focused on the self and has some degree of affiliation and autonomy-taking (i.e., 2-2, "Disclosing and Expressing").

Overall, SASB's structural fidelity is well-established (e.g., Benjamin, 1974; Benjamin, Rothweiler & Critchfield, 2006; Lorr & Strack, 1999; Pincus et al., 1998), and

[3] Although the SASB system can also codify *intrapsychic* behavior toward oneself (i.e., introjection) on surface 3, the present study focused only on *interpersonal* transactions codified on surfaces 1 and 2.

it has demonstrated excellent internal and external validity (e.g., Rothweiler, 2004) and robust reliability and internal consistency in clinical and non-clinical samples (e.g., Lorr & Stack, 1999). Once coders are trained to evaluate interpersonal transactions along the continua of affiliation and interdependence, and to arrive at specific two-dimensional codes, the indices of interest in the present study can be defined, as described below.

2.4.1 Coders and Interrater Reliability

Coders for this study consisted of six graduate students trained over a 12-month period by SASB experts according to the Benjamin and Cushing (2000) manual. First, coders attended a 3-day workshop that included didactics in the theoretical underpinnings of SASB and its application to the study of psychotherapeutic process, as well as practice coding of sample transcripts with accompanying video and audio recordings. Second, coders met weekly under the guidance of a SASB expert to continue their training, applying the SASB to previously coded transcripts and accompanying audio segments, and comparing and contrasting their codes with "gold standard" codes from an expert coding group. After coders had achieved comfort with the SASB model, between-meeting assignments included coding material individually and in pairs, coming together as a group to discuss agreement and disagreement on codes, and addressing any questions that arose during coding assignments. Coders were deemed proficient and "graduated" from the training when they achieved a Kappa of ≥ 0.65 on a training therapy session (both with each other, as well as with the gold standard codes for the material). The average Kappa among the six coders was 0.83, indicating excellent interrater reliability. To further facilitate reliability, coders worked in pairs on the present study transcripts. Moreover, 20% percent of study material was double-coded (by two different coding

pairs) with the average weighted Kappa indicating excellent interrater reliability on study materials (*Kw* = 0.88, range 0.81-0.94). Following independent reliability coding, the teams came together to achieve final consensus. These consensually determined codes were used in the primary analyses.

2.4.2 Interpersonal Complementarity Index

To address the first study aim, SASB codes can be used to calculate an interpersonal complementarity index, which requires multiple steps that are processed automatically with the SASBworks© software program (Benjamin, 2000). First, a weighted affiliation (AF) score is calculated for each participant on each surface, which summarizes, respectively, the amount of affiliation/friendliness in their transitive (surface 1) and intransitive (surface 2) communications (in this case, across the three coded therapy sessions). The weighting for each code ranges from -9 to +9 to reflect the amount of affiliation underlying each of the 16 SASB codes. For example, on surface 1, the maximum positive affiliation weight of 9 is applied to the 1-3 code of "Loving and Approaching," whereas the maximum negative affiliation weight of -9 is applied to the 1-7 code of "Attacking and Rejecting." Using surface 2 as an example, for the codes of 2-1 ("Asserting and Separating") and 2-5 ("Deferring and Submitting"), which are neutral in affiliation, a weight of zero is applied. For codes that include only some affiliation, a weight of +7.8 is applied for the friendlier side of the model (e.g., a 1-4 code of "Nurturing and Protecting") and -7.8 is applied for the more hostile side of the model (e.g., a 2-6 code of "Sulking and Scurrying"). The surface 1 AF score is then calculated with the following formula: [(1-1*0) + (1-2*7.8) + (1-3*9) + (1-4*7.8) + (1-5*0) + (1-6*-7.8) + (1-7*-9) + (1-8*-7.8)] / 8. The surface 2 AF formula is: [(2-1*0) + (2-2*7.8) + (2-

3*9) + (2-4*7.8) + (2-5*0) + (2-6*-7.8) + (2-7*-9) + (2-8*-7.8)] / 8. The same circular logic is then used to generate the weighted autonomy (AU) scores for surfaces 1 and 2. The surface 1 AU formula is: [(1-1*9) + (1-2*7.8) + (1-3*0) + (1-4*-7.8) + (1-5*-9.0) + (1-6*-7.8) + (1-7*0) + (1-8*7.8)] / 8. The surface 2 AU formula is: [(2-1*9) + (2-2*7.8) + (2-3*0) + (2-4*-7.8) + (2-5*-9.0) + (2-6*-7.8) + (2-7*0) + (2-8*7.8)] / 8.

Using the AF and AU scores, the overall distance between interactants (X and Y) can be measured geographically with the Pythagorean Theorem; i.e., the square root of $(X_{AF} - Y_{AF})^2 + (X_{AU} - Y_{AU})^2$. When calculated on the two distinct interpersonal surfaces, you derive an index of overall complementarity in the unique dyad. You can also calculate an overall positive complementarity index, which I did for the present study, by limiting to the distance present in only the model's "right-side" codes of 1-2, 1-3, 1-4, 2-2, 2-3, and 2-4. The range for these complementarity indices is from 0 to 1, with higher numbers indicating greater complementarity (see Figure 2 for graphical examples of the positive complementarity index).

To address the aim 1 subquestion, you can calculate one-step conditional probabilities that codes of one interactant will be followed by codes of another (in this case, to determine the relevant complementary sequences of corrective experience vs. recapitulation). Specifically, I used SPSS 23.0 to calculate the Markov chain probability of interest (a patient 2-1 utterance followed by a therapist 1-2 utterance). In Benjamin's (1979) seminal work, she argued that using the Markov methodology to analyze SASB data captures interpersonal processes that might not otherwise be apparent. Moreover, and particularly relevant to this GAD-specific research question, Benjamin purported that

Markov analysis is especially helpful in investigating the therapist's role in facilitating patient assertiveness.

2.4.3 Complex Communications Index

To address the second study aim, the average amount of complex communications used by the interactants (in relation to all coded therapist and patient utterances) can be determined across the material examined.

2.4.4 Therapist Self-Disclosure Index

To address the third study aim, the average amount of therapist intransitive self-disclosure (in relational to all coded therapist utterances) can be determined across the material examined.

2.5 Procedure

To again provide context for the parent RCT, participants responded to community advertisements posted in the greater Toronto area. After responding, potential participants were phone screened. If eligible, a trained graduate assessor administered the Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID-I; First et al., 1996) to consenting participants to determine diagnostic eligibility and assess other clinical features. Eligible patients were then randomized to treatment across the two sites (Westra et al., 2016). The institutional review boards (IRBs) at the two data collection sites approved the trial.

For the present study, I applied SASB "pond water theory" to select session material for coding. This theory posits that coding a portion of a dyad's interpersonal behavior will typically result in a representative sample of overall interpersonal patterns (Benjamin & Cushing, 2000). Accordingly, this study focused on the middle 20 minutes

of audio recordings of sessions 2, 5, and 8 for the selected dyads. As a preparatory step, research assistants transcribed the session content, and parsed it into individual thought units. Each of these units represented a complete thought by either the therapist or patient. Next, the trained coders applied the SASB cluster model to each of the units on the transcript, drawing on the session audio recording for additional context (e.g., intonation). The University of Massachusetts Amherst's IRB approved this study (protocol number 2016-3428).

2.6 Data Analyses

To provide descriptive context, I first calculated the frequencies of all 16 SASB clusters, separately for patients and therapists, across the three sessions. To adjust for differences in verbosity, and to increase interpretability, I divided each frequency by the quantity of each interactant's total utterances, which yielded a percentage of each transaction type.

To test my first research question of whether high versus low alliance convergence groups had more overall positive interpersonal complementarity during early treatment, I used SPSS 23.0 (IBM corp., 2015) to conduct an independent samples *t*-test, with convergence group as the predictor and positive interpersonal complementarity as the dependent variable. To test the subpart of my initial research question, whether specific types of GAD-relevant positive complementary sequences have a higher probability of occurring in one or the other convergence groups, I first followed Benjamin's (1979) recommendations and calculated the Markov, one-step probability for each dyad of the specific interpersonal sequence (i.e., patient 2-1 followed by a therapist 1-2). Put simply, these probabilities represent the proportion of times that a

patient 2-1 was followed by a therapist 1-2. For example, if a patient "Asserted and Separated" (i.e., a 2-1) twice, and the therapist responded to the first patient 2-1 by "Affirming and Understanding" (i.e., a 1-2) and responded to the second by "Nurturing and Protecting" (i.e., a 1-4), then the Markov conditional probability would be 0.50 for this dyad. Next, after calculating these conditional probabilities for each dyad, I used SPSS 23.0 to conduct a nonparametric Mann-Whitney *U* test (due to the skewness of our probabilities for the high convergence group; skewness = -1.51), with convergence group as the predictor and the probability of the specific sequence (i.e., patient 2-1 followed by a therapist 1-2) as the dependent variable.

To test my second research question of whether high alliance convergence dyads had fewer complex communications overall compared to low convergence dyads, I used SPSS 23.0 to conduct an independent *t*-test, with convergence group as the predictor and the weighted frequency of complex codes as the dependent variable. Finally, to test my third research question of whether high alliance convergence dyads had more therapist self-disclosure than low convergence dyads, I again used SPSS 23.0 to conduct an independent *t*-test, with convergence group as the predictor and weighted frequency of therapist self-disclosure as the dependent variable. In addition to the above coefficients, I calculated Cohen's (1988) *d* to determine the magnitude of the difference in respective impersonal behavior(s) between convergence groups, which takes on special importance in small sample research designs.

CHAPTER 3

RESULTS

Table 4 shows separately for patients and therapists the descriptive frequencies for all 16 SASB clusters across the three sessions. As it typical for psychotherapy sessions, therapist utterances were most frequently focused on the patient (transitive actions on surface 1) and patient utterances were most frequently focused on self (intransitive actions on surface 2). Moreover, as is also typical in therapy exchanges, there were far more friendly than hostile communications for both interactants. That said, some hostile codes existed. Finally, with their frequent transitive actions toward patients, therapists were sometimes more influencing (especially 1-4, "Nurturing and Protecting"), and at other times they were more autonomy granting (especially 1-2, "Affirming and Understanding"). On average, patients matched this pattern; sometimes they followed the therapist's influence (especially 2-4, "Trusting and Relying"), and at other times they took autonomy (especially 2-2, "Disclosing and Expressing").

Regarding aim 1, there was no significant difference in the mean level of positive interpersonal complementarity between the high alliance convergence (M = 0.91, SD = 0.07) and low alliance convergence (M = 0.92, SD = 0.08) dyads, $t(14) = 0.04$, $p = .976$, $d = 0.01$. However, regarding the aim 1 subquestion, there was a trend-level difference in the mean probability of the interpersonal sequence of interest (i.e., intransitive patient 2-1 utterances being immediately followed by transitive therapist 1-2 utterances) between the high convergence (M = .89, SD =.21) and the low convergence (M = .67, SD = .31) dyads, $U = 14.50$, $p = 0.06$, $d = 0.79$. Although this result did not reach a conventional level of statistical significance, the effect size was notably large. Namely, the mean probability of this sequence occurring in the high convergence dyads was 0.79 SDs greater than that of the low convergence dyads.

For aim 2, there was no significant difference in the mean level of complex communications between the high alliance convergence (M = 0.02, SD = 0.10) and low alliance convergence (M = 0.02, SD = 0.12) dyads, $t(14) = 0.76$, $p = .459$, $d = 0.36$. These challenging exchanges occurred to similarly infrequent levels in both groups. Similarly, for aim 3, there was no significant difference in the mean level of therapist self-disclosure between the high convergence (M = 0.04, SD = 0.02) and low convergence (M = 0.05, SD = 0.03) dyads, $t(14) = 0.44$, $p = .667$, $d = 0.21$. Again, this expectedly low base rates code occurred to similarly infrequent levels in both groups.

CHAPTER 4

DISCUSSION

This study examined three in-session interpersonal microprocesses that may characterize patient-therapist alliance convergence (as assessed through post-session self-reports) in CBT for GAD. Counter to my hypothesis, the difference in general positive interpersonal complementarity was not significantly greater in the high versus low alliance convergence dyads. However, there was a large effect size for a difference in a specific positive complementary exchange; as hypothesized, therapists were more likely to respond to a patient's bid for friendly autonomy and separation (a 2-1 SASB code) with affirming and understanding (a 1-2 SASB code) in the high versus low convergence dyads. The hypothesis that there would be fewer complex communications in patient-therapist interpersonal process in the high versus low alliance convergence group was not substantiated. Likewise, the results did not support the hypothesis that therapists in the high versus low convergence group would self-disclose more often.

The null finding for the first aim suggests that whereas positive interpersonal complementarity may be a correlate of adaptive posttreatment outcomes (e.g., low complementarity differentiating poor from good outcome cases; Henry et al., 1986; Svartberg & Stiles, 1992) and may facilitate other healthy therapeutic processes (e.g., friendly, stable, securely attached relationships; Benjamin, 2018), it does not relate to the patient and therapist experiencing the quality of their therapeutic alliance more or less similarly over time. As one possible explanation for this unexpected result, it may be that the *content* of what patients and therapists say to each other, rather than the interpersonal *process* that these verbalizations convey, uniquely differentiates dyads who do or do not become more aligned in their working collaboration and relational bond over the first part of treatment (at least with regard to manualized variants of CBT for GAD). Although this does not negate the therapeutic benefits that affiliative, coordinated interpersonal exchanges can facilitate in the therapy context, to be more likely to reap the unique outcome benefits of alliance convergence may require, for example, a therapist to explicitly involve the patient in treatment decisions, such as goal and agenda setting. That is, more than "giving" autonomy and promoting collaboration interpersonally (such as through general affirmations and/or reflective listening), the explicit language of mutual, two-person collaboration may be what allows a patient and therapist to come to more fully agree that they agree on the goals and tasks of therapy and to feel bonded with mutual respect for and prizing of one another. Of course, this notion requires future testing, including with similar methods to the present study for which independent observers code the micro*content* of the dyad's moment-to-moment therapeutic exchanges.

As another possible explanation for the nonsignificant positive complementarity result, it may be that *nonverbal* communications are more likely than general interpersonal exchange (that is coordinated in focus, affiliation, and interdependence) to facilitate early alliance convergence. Although this idea also requires direct testing, it is indirectly supported by a burgeoning literature that associates greater levels of patient-therapist *synchrony* in nonverbal activity, such as movement (e.g., Ramseyer et al., 2011, Schoenherr et al., 2019), vocal pitch (e.g., Imel et al., 2014, Reich et al., 2014), and linguistic style (Marci et al., 2007), with better psychotherapy outcomes. Examining whether these synchrony indices differentiate higher versus lower alliance convergence dyads could be an important next step in dyadic alliance research. If, for example, movement synchrony was significantly higher in the high convergence dyads, then this would be a nonverbal process that clinicians would want to assess regularly to see if they are on track for early alliance convergence and, therefore, the positive outcomes that it can predict (Coyne et al., 2018; Laws et al., 2017).

Of course, it is also possible that positive complementarity would differentiate high and alliance convergence dyads were it not for methodological issues in the current sample. Most notably, it is possible the lack of variability in the level of positive complementarity in our dyads made it difficult to find a signal; namely, there appeared to be a ceiling effect, with the positive complementarity indices being high for all dyads. Future research should replicate the present study with dyads showing more variability in complementarity. Additionally, it may be that the SASB “pond water” approach (Benjamin, 2000) to this aim was unable to capture specific, nuanced exchanges that occurred earlier or later than the coded session segments and which may contribute to

differentiating the alliance convergence levels. Future studies could code full sessions to address this potential shortcoming, possibly even teaching machine learning models to code the SASB processes given the time intensity of human coding (Imel et al, 2017).

Notably, though, the present results showed that one specific type of positive interpersonal complementarity, which was highly clinically relevant to the GAD population, distinguished the alliance convergence groups (albeit only to a trend level for conventional statistical *p*-values). Namely, for people with GAD who tend to be over-accommodating and under-agentic in their relationships (e.g., Eng & Heimberg, 2006; Gomez Penedo et al., 2017; Przeworski et al., 2011; Shin & Newman, 2019), early-treatment alliance convergence may be more likely when therapists respond with understanding and affirmation to moments when patients take an uncharacteristic risk and assert themselves. This interpersonal exchange may provide patients with GAD with a relational paradigm shift from deferring to others to refocusing on what is important to them and what they need from their therapist and therapy. It is possible that this exchange acts as an implicit and dynamic re-negotiation of the alliance for both therapist and patient, fostering a deeper (and perhaps more accurate) understanding of where they stand in terms of both the quality of their relationship and the goals of therapy. Both the specific experience of assertion being met with affirmation from an important other *and* the idea of working collaboratively and equitably on an important relationship could reflect a corrective experience for individuals with GAD (whose typical exchanges may be more one-sided patterns of "others dominate me, and I submit to the point of being exploited;" see Muir et al., 2021; Westra & Constantino, 2019). It is worth reiterating,

though, that this corrective experience result only approached significance, so the finding and related implications should be interpreted with caution.

As for complex communications not differing between the alliance convergence groups, it is possible that this null result may be due to many of the same factors discussed for positive complementarity, including the limitations of the "pond water" approach, the potential relative importance of verbal content over interpersonal process, and/or the potential relative importance of nonverbal communications over interpersonal process that is codified through language. For example, it may be that what is being said and/or the facial expressions being made during complex communications have more relevance for experiences of alliance convergence than the overall level of complexity within patient-therapist communications. Future research can test these questions directly.

Alternatively, it may be that different types of complexity facilitate or detract from experiences of alliance convergence. For example, a therapist giving a simultaneous message of autonomy and control (e.g., "Don't you think that may help?") may necessitate more deciphering (and thus more cognitive resources and perhaps misunderstanding or alliance misattunement/low convergence), than when a therapist's complex message is both transitive and intransitive (e.g., "I think that talking about this will help us better understand the function your worry serves."). Integrating all such communications into one global index of complex communications, as was the case in this study due to their low overall frequency in this sample, may have masked nuanced differences in the alliance convergence groups. This possibility should be addressed in

replications, perhaps in samples for which there are known higher levels of complex exchanges among the participants.

In a similar vein, the scope of what constitutes a therapist self-disclosure in the SASB coding system may explain why there was no difference in the amount of therapist disclosure between the alliance convergence groups. For example, the most frequent self-disclosure in this study took the form of therapists telling the patient what they will do next (e.g., “So, after this we’ll look take a look the homework”) or similar disclosures that are both disclosing and teaching (e.g., “I thought that doing this exercise might be helpful for you” – see Appendix D for additional examples of therapist self-disclosure in the present data). Despite technically focusing on self (SASB surface 2), it is plausible that these more narrative forms of therapist self-disclosure may have been perceived by the patient as continued nurturing and protecting (i.e., therapist focus on other; SASB surface 1). The present hypothesis rested more on the intimate, personal disclosures that have fostered relational satisfaction and perceptual attunement in studies of other types of close relationships (e.g., Greene et al., 2006), and perceived similarity and greater perception of the therapist as a “whole” person in clinical contexts (e.g., Henretty et al., 2014). Thus, future research should examine only this specific form of self-disclosure in future alliance-convergence-process studies, especially in a sample for which it was more likely to occur. In the present study, the occurrence was too infrequent to appreciate any differences, even if they do exist.

In addition to the methodological issues already discussed, this study had several other limitations. First, only portions of sessions 2, 5, and 8 were coded, leaving the majority of interpersonal process of the selected dyads unknown. Second, this study had a

small sample size of just 16 unique dyads; Although this is common feature of microprocess coding studies, it is possible that the findings would have been different with greater statistical power. Third, there were significant differences in the self-identified race of patients between the two alliance convergence groups, with the potential impact of the interaction of therapist and patient racial identity on alliance convergence remaining unknown. Further investigation of such complex associations is warranted. Finally, this study only included people with GAD receiving a variant of CBT; thus, future research should explore other potential diagnosis- and/or treatment-specific interpersonal sequences that may typify, or facilitate, alliance convergence and, ultimately, positive therapy outcomes.

Limitations notwithstanding, this study is the first to examine interpersonal microprocesses in relation to evidence-based alliance convergence patterns using a fine-grained observer coding system. The results support the clinical importance of therapists understanding a patient's diagnosis-specific interpersonal vulnerabilities and tending to specific moments in session where they may provide a corrective interpersonal experience. In this vein, the findings point to the importance of pointed therapist responsivity, including in variants of CBT (Constantino et al., 2021), as one contributory means to facilitating adaptive psychotherapy process and outcomes.

Table 1

Full Sample Baseline Participant Characteristics by Treatment Condition

	CBT (n = 43)				MI-CBT (n = 42)			
Variables	*M*	*SD*	*N*	%	*M*	*SD*	*n*	%
Age	34.19	11.92			32.45	10.54		
Sex assigned at birth*								
Female			41	95.34			34	80.95
Male			2	4.65			8	19.05
Race								
Caucasian			32	74.42			31	73.81
Asian			5	11.62			6	14.29
African Canadian			0	0.00			2	4.76
Hispanic			2	4.65			1	2.38
Multiracial			3	6.98			2	4.76
Annual household income								
Less than 25,000			10	23.26			6	14.29
25,000-50,000			9	20.93			8	19.05
50,000-75,000			11	25.58			8	19.05
75,000-100,000			8	18.60			6	14.29
100,000 or more			5	11.63			13	30.95
Education								
High school or less			4	9.30			2	4.76
Some college/university			13	30.23			9	21.43
Completed college			18	41.86			19	45.24
Some graduate school			8	18.60			12	28.57
Marital status[a]								
Single			19	44.19			18	42.86
Cohabiting/married			23	54.76			24	57.14
Current medication use*								
Yes			14	32.56			6	14.29
No			29	67.44			36	85.71
Previous psychotherapy								
Yes			32	74.42			31	73.81
No			11	25.58			11	26.19
Comorbidity[b]								
Anxiety disorder			31	72.09			29	69.05
Depression/dysthymia			17	39.53			13	30.95
Outcome variable								
PSWQ	75.05	3.43			74.69	3.44		
CQ*	107.23	8.76			101.60	11.50		

Note. *M* = mean; *SD* = standard deviation; PSWQ = Penn State Worry Questionnaire; CQ = Change Questionnaire.
[a] Category sums to less than 43 (and less than 100%) for the CBT condition due to missing data.
[b] Category sums to more than each group's sample size due to some patients having more than one comorbid disorder.
* Groups differences on these variables at baseline were either significant or approached significance ($p \leq .05$).

Table 2

*Patient Characteristics for Selected Alliance Convergence Dyads (*N = *16)*

	High Convergence (*n* = 8)				Low Convergence (*n* = 8)			
	M	*SD*	*n*	%	*M*	*SD*	*n*	%
Age	33.63	9.96			35.38	9.96		
Sex assigned at birth								
Female			8	100.00			5	37.50
Male							3	62.50
Race*								
White			8	100.00			4	50.00
Asian							2	25.00
Multiracial							2	25.00
Annual household income								
< 25,000			2	25.00			1	12.50
25,000-50,000			1	12.50			5	19.05
50,000-75,000			2	25.00			1	19.05
75,000-100,000			2	25.00				
100,000 or more			1	12.50			1	12.50
Education								
High school			1	12.50			1	12.50
Some college			4	50.00			5	62.50
Masters			3	37.50			2	25.00
Relationship Status								
Single			3	37.50			3	37.50
Cohabiting			5	62.50			5	62.50

Note. *M* = mean; *SD* = standard deviation
* Patient self-identified race differed significantly between groups; $t(14) = 2.55$, $p = .023$

Table 3

*Therapist Characteristics for Selected Alliance Convergence Dyads (*N = *8)*

	M	*SD*	*n*	%
Age	27.50	1.07		
Experience (Therapy hours)	225.13	176.27		
Sex assigned at birth				
Female			8	100.00
Male				
Orientation				
Client Centered			2	25.00
CBT			3	37.50
Integrative			3	37.50

Note. *M* = mean; *SD* = standard deviation

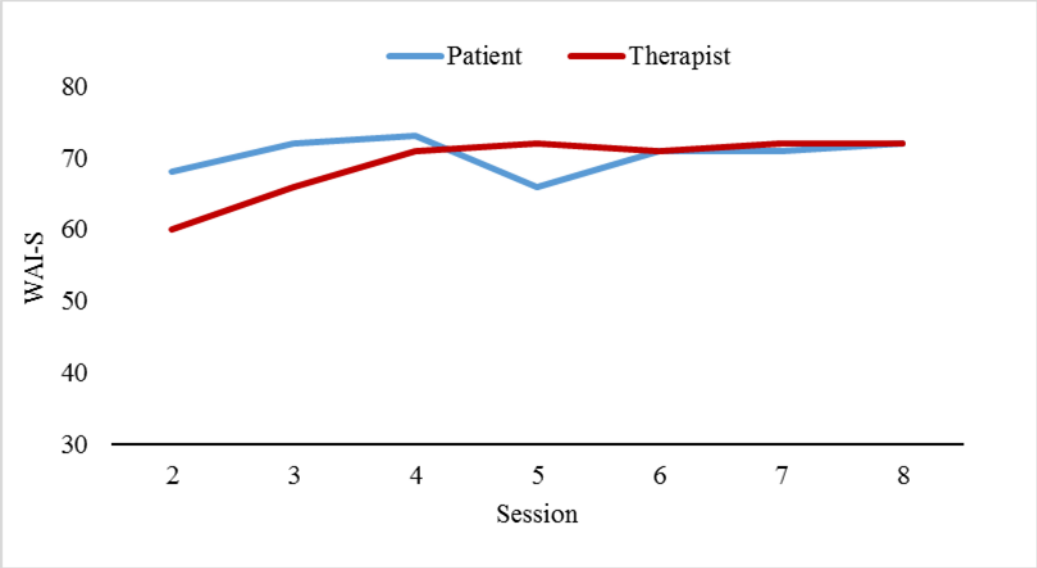
Table 4

Weighted Frequencies of Patient and Therapist SASB Codes by Alliance Convergence Group

		Therapist		**Patient**	
		High Convergence (n = 8)	Low Convergence (n = 8)	High Convergence (n = 8)	Low Convergence (n = 8)
Code		*M* %	*M* %	*M* %	*M* %
Focus on Other					
1-1	Freeing & Forgetting	0.00	0.00	0.00	0.00
1-2	Affirming & Understanding	48.28	45.87	0.42	0.34
1-3	Loving & Approaching	0.79	0.24	0.02	0.06
1-4	Nurturing & Protecting	40.48	45.75	0.00	0.19
1-5	Watching & Controlling	4.86	2.51	0.00	0.00
1-6	Belittling & Blaming	0.13	0.00	0.00	0.00
1-7	Attacking & Rejecting	0.00	0.00	0.00	0.00
1-8	Ignoring & Neglecting	0.32	0.09	0.00	0.00
Focus on Self					
2-1	Asserting & Separating	0.00	0.03	1.20	1.31
2-2	Disclosing & Expressing	4.77	5.20	69.99	66.98
2-3	Joyfully Connecting	0.11	0.05	0.11	0.11
2-4	Trusting & Relying	0.19	0.24	26.75	30.55
2-5	Deferring & Submitting	0.06	0.00	0.55	0.21
2-6	Sulking & Scurrying	0.00	0.00	0.11	0.04
2-7	Protesting & Recoiling	0.00	0.00	0.00	0.00
2-8	Walling-off & Distancing	0.00	0.00	0.38	0.22

Note. The numbers in each cell represent the mean percentage of therapist and patient utterances with the given code (across the 8 dyads in each convergence group), adjusted for each interactant's total number of coded utterances. This weighting controlled for differences in each person's in-session verbosity.

Panel A



Panel B

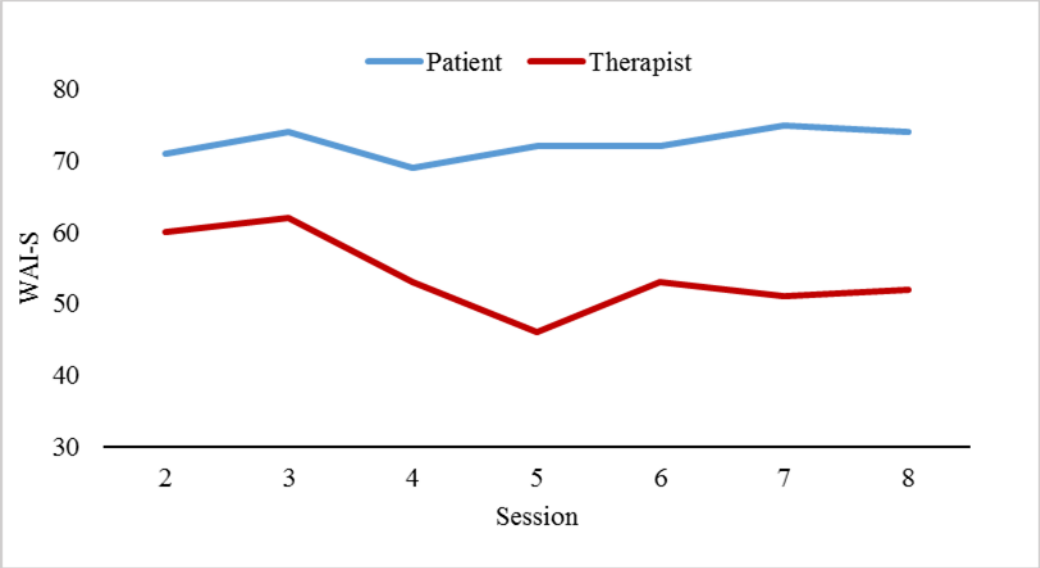
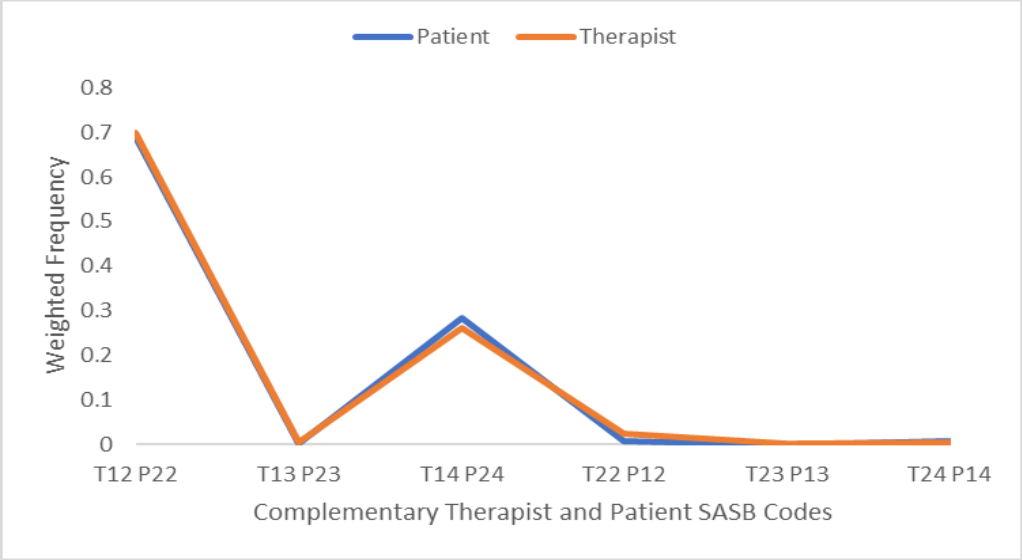


Figure 1. Hypothetical depiction of alliance convergence. Panel A depicts a hypothetical high alliance convergence dyad; Panel B depicts a hypothetical low alliance convergence dyad.

Panel A



Panel B

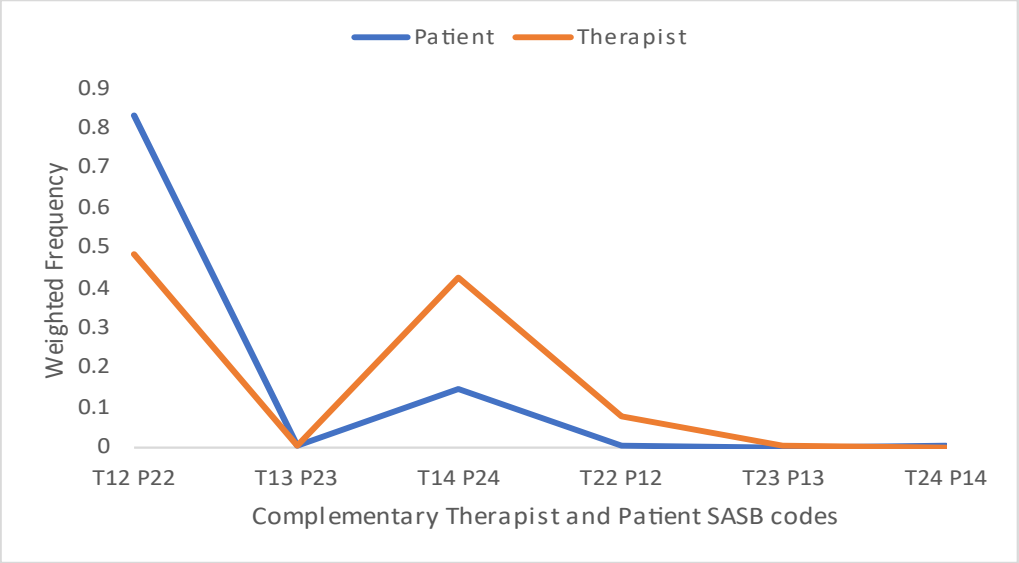
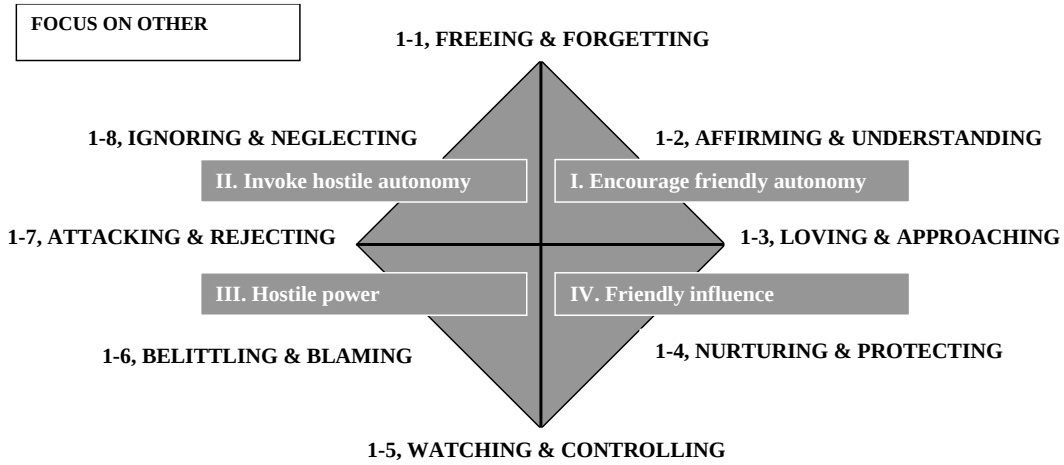


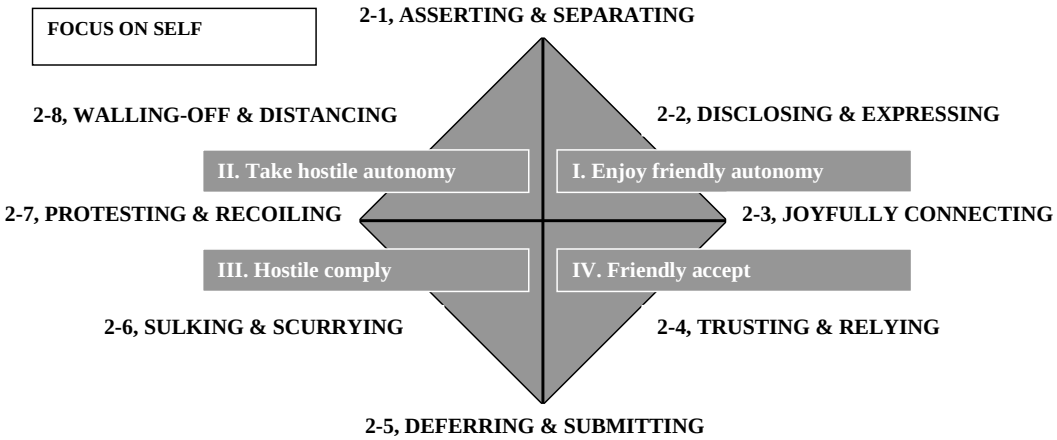
Figure 2. Examples of positive complementarity from study data. Panel A depicts the dyad with the highest level of positive complementarity (r = .99) in the sample; Panel B depicts the dyad with the lowest level of positive complementarity (r = .80) in the sample.

Note. T = therapist, P = patient; the numbers on the X axis represent the 2-digit SASB codes; the numbers on the Y axis represent the percentage of each dyad member's total utterances that received a given code.

APPENDIX A

COMBINED QUADRANT AND CLUSTER SASB MODELS FOR SURFACES 1 AND 2[4]





[4] The quadrant and cluster versions are combined (with permission) in: Benjamin, L.S. (2000) SASB User's Manual. Copyright, Interpersonal Reconstructive Therapy Institute.

APPENDIX B

WAI-S: THERAPIST VERSION

On the following page there are some sentences that describe some of the different ways a person might think or feel about his or her client. Please complete these ratings in terms of your experience with your client during this first portion of the session. As you read the sentences, mentally insert the name of your client in place of the _____ in the text.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

Use the above seven-point scale for each item. If the statement describes the way you always feel (or think), circle the number '7'; if it never applies to you, circle the number '1'. Use the numbers in between to describe the variations between these extremes. Work fast; your first impressions are the ones we would like to see.

_____ 1. _____ and I agree about the things I will need to do in therapy to help improve his/her situation.

_____ 2. _____ and I both feel confident about the usefulness of our current activity in therapy.

_____ 3. I believe _____ likes me.

_____ 4. I have doubts about what we are trying to accomplish in therapy.

_____ 5. I am confident in my ability to help _____ .

_____ 6. We are working on mutually agreed upon goals.

_____ 7. I appreciate _ _____ as a person.

_____ 8. We agree on what is important for _____ to work on.

_____ 9. _____ and I have built a mutual trust.

_____ 10. _____ and I have different ideas on what his/her real problems are.

_____ 11. We have established a good understanding between us of the kind of changes that would be good for _____.

_____ 12. _____ believes the way we are working with his/her problem is correct.

APPENDIX C

WAI-S: PATIENT VERSION

On the following page there are some sentences that describe some of the different ways a person might think or feel about his or her therapist. Please complete these ratings in terms of your experience with your therapist during the most recent session. As you read the sentences, mentally insert the name of your therapist in place of the ____ _____ in the text.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

Use the above seven-point scale for each item. If the statement describes the way you always feel (or think), circle the number '7'; if it never applies to you, circle the number '1'. Use the numbers in between to describe the variations between these extremes. This questionnaire is confidential; your therapist will not see your answers. Work fast; your first impressions are the ones we would like to see. Please don't forget to respond to every item.

_____ 1. _____ and I agree about the things I will need to do in therapy to help improve my situation.

_____ 2. What I am doing in therapy gives me new ways of looking at my problem.

_____ 3. I believe _____ likes me.

_____ 4. _____ doe s not understand what I am trying to accomplish in therapy.

_____ 5. I am confident in _____'s ability to help me.

_____ 6. _____ and I are working on mutually agreed upon goals.

_____ 7. I feel that _____ s me.
appreciate

_____ 8. We agree on what is important for me to work on.

_____ 9. _____ and I trust one another.

_____ 10. _____ and I have different ideas on what my problems are.

_____ 11. We have established a good understanding of the kind of changes that would be good for me.

_____ 12. I believe the way we are working with my problem is correct.

APPENDIX D

STUDY-SPECIFIC EXAMPLES OF THERAPIST SELF-DISCLOSURE

"I'm not gonna tell you to avoid more."

"I'm just going to take a quick look."

"I'm just wondering, going forward what might be some-some ways you cannot avoid?"

"I'm glad."

"Well, I'm going to teach you some things today that you can do."

"I mean I think objectively that sounds like a pretty awkward conversation."

"I guess the immature piece—I'm curious about sort of that labelling it as immature?"

"It's a lovely side, there's a playfulness to it I guess."

"I feel like a little bit nitpicky."

"I think that is fine as well."

"I think there is so much variability in terms of what effects our mood."

"I mean, all I can share is my perspective."

"I can't change how you think about it."

"I like it."

"This is something I've noticed with you since the beginning."

"Well, it's not that they're unfounded."

"I hope you know that even for me to sit here with you is inspiring."

"Not everybody that comes through this door, actually most people that come through this door are not, um, like you."

"That really struck me when I was looking back at it"

"And you know what, given what we talked about last week I see why."

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