ABSTRACT

The Study of Affect Regulation in the Therapeutic Dyad as a Measure of Alliance

Based on an integration of findings from empirical studies in cognitive science, psychoanalytic theory, developmental psychology, neuropsychology, and dynamic systems theory, affect regulation is conceptualized as a sub-symbolic, procedural, automatic process that is communicated through the non-verbal, sensori-perceptual-motor domain. These sub-symbolic processes serve a fundamental function in emotional communication in interpersonal interactions. Established in infancy, the learned patterns of how we relate to others become our "implicit relational knowledge" (Lyons-Ruth, 1998), an idiosyncratic, patterned way of relating that we bring to all relationships. One's style of affect regulation is a measure of relatedness, which may be observed in its most typical form, in intense, intimate encounters, such as the psychotherapeutic relationship.

Establishing the presence and style of affect regulation within the psychotherapy relationship, elucidates questions about the nature of therapeutic action, and the ways in which the therapist and patient either contribute to change and/or collude with pathological patterns – all within the nonverbal domain. Understanding this moment-by-moment process will, in turn, inform our technical interventions. Mapping out this process empirically is a way to take the phenomenon of emotional communication out of the intuitive realm, and make it the focus of our explicit, conscious awareness.

The current study examined the process of affect regulation in individual psychotherapy by applying microanalytic coding schemes to videotaped psychotherapy sessions with frontal views of patient and therapist, and were coded second-by-second to

obtain a measure of interaction in the nonverbal behaviors of gaze, torso lean and self-regulating behaviors. Affect regulation was defined as a significant association between nonverbal behavior, alliance level (high versus low as measured on the Working Alliance Inventory) and affect measure (positive, sad, angry, fearful as global affect judgement ratings). It was hypothesized that regulated interactions between patient and therapist would be significantly associated with self-reports of a high alliance on the Working Alliance Inventory, while dysregulated interactions between patient and therapist would be significantly associated with self-reports of a low alliance on the Working Alliance Inventory. Behaviors were then analyzed using a hierarchical loglinear technique in order to examine the contingency of behaviors, finding that specific patterns of nonverbal interactions were associated with low versus high alliance ratings.

The Study of Affect Regulation in the Therapeutic Dyad as a Measure of Alliance

By

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Chapter 1

Literature Review

Introduction

The relational components of psychoanalytic change include the implicit, subsymbolic, affect-driven experience of a consistent, empathic listener working within a therapeutic frame, while verbal components of change occur on the symbolic, representational level of discourse between the analyst and patient. A clearer understanding of the emotional interaction between patient and therapist is needed to more fully understand this aspect of the therapeutic process. It is the purpose of this article to outline the theoretical understanding of the affective interchange, or, *affect regulation* between patient and therapist, and make the technical implications of this perspective explicit. However, it is the assertion of this study that emotional communication (as opposed to verbal communication) within psychoanalysis, is the foundation upon which verbal interventions are made, and a clearer understanding of the emotional interaction between patient and therapist will provide useful understanding of the therapeutic process.

Purpose of this Study

How does this process of affect regulation take place? What are the conditions of and variations in its functioning? It is the goal of this study to demystify the process of emotional communication, rapport, alliance and affect regulation by taking them out of the intuitive, experiential realm, and exploring them empirically.

With the intention of fully understanding the development of affect regulation, the encorporation of this construct into psychoanalysis and psychotherapy, and the empirical work that operationalizes affect regulation as nonverbal communication, this review will cover a wide variety of areas. The construct of rapport, affect-regulation and emotional communication are looked at from two major lines of research: the first is the mother-infant literature, and the second is the study of nonverbal communication in intimate relationships, including psychotherapy. This paper will outline these lines of research and methodologies, with the goal of integrating key concepts, and building on empirically validated theory, to more fully understand affect regulation in psychotherapy. Throughout this review, the term affect regulation will be used interchangeably with the concepts of nonverbal aspects of therapeutic alliance, empathy, rapport and emotional communication.

To set the context for the theories and ideas raised in the mother-infant literature, cognitive theories of mind that support a split in the symbolic and subsymbolic levels of functioning were reviewed. The concepts of affect regulation as subsymbolic level of processing, will then be understood in the context of Dynamic Systems Theory.

Following this discussion, the paper will explore the developmental aspects of affect regulation, and the theoretical application of mother-infant research to psychoanalytic theory and technique. This will bridge theories of affect regulation and the relationship of rapport and nonverbal behavior in psychotherapy to the construct of therapeutic alliance. Finally, this will lead us to propose the hypothesis that a well affectively regulated therapeutic relationship is highly correlated, even predictive, of a positive therapeutic alliance, while dysregulated interactions will be associated with a poor alliance.

Affect is regulated through an interpersonal process. It is the establishment of predictable, mutually responsive patterns of affective states within a dyad, the purpose of which is twofold: to regulate both the dyadic interaction and internal feeling states. These affective states are manifested through expression of vocal, visual and kinesic behaviors. The facial expression, the gestures of the limbs, the nodding of the head, the tone of voice and ultimately the visual regard from the other and towards the other - in its most literal sense, all serve to promote a specific and unique interpersonal environment. This nonverbal context is characterized by the nonconscious, continuous, interaction of expressive movements between participants; it is in this nonverbal context that the verbal exchange takes on its meaning. In fact, studies that examine the incongruence between words and emotional expression show that nonverbal aspects of communication make a significantly larger contribution to meaning (Hass & Tepper, 1972; Gottman, Markman & Notarius, 1977; Watzlawick, Bavelas, & Jackson,1967). In other words, it is not so

much what you say, but, how you say it that ultimately determines much of the meaning in communication.

This perspective rests on the belief that the therapist is an active participant in the emotional relationship with the patient. Many propose that the therapist's emotional response facilitates the healing process. Again, this is no way a new idea; in more traditional terms one can think of the Holding Environment (Winnicott, 1965), Mirroring (Kohut, 1978), Containment (Bion 1962), in addition to all of the other relationally oriented theorists who posit that "Relationship" is the cornerstone upon which cure takes place – it is the bedrock of the psychotherapeutic process. Additionally, there are a wide variety of terms to describe the ways in which feelings are transmitted between patient and therapist; they may be projected, introjected, shared, withheld, transferred, transformed, identified with and internalized. From a more contemporary perspective, the concept of therapeutic alliance and its relational-bond aspects focuses the lens on the intersubjective arena as the arena in which therapeutic work is completed. (Safran & Muran, 2000). Psychotherapy researchers (Horvath & Symonds, 1991) have empirically established the need for therapeutic rapport in order to engage the patient's trust. These relational contributions are also referred to as the "nonspecfic factors" that contribute to change (Strupp & Hadley, 1979).

Relational psychoanalytic theorists, as well as other contemporary psychoanalytic schools of thought, have a more contemporary perspective on "nonspecific factors". Generally, they focus on the here and now momentary experience between therapist and patient (Mitchell, 1988); this theory often points to aspects of therapeutic action that

occur in the nonverbal realm, that are clearly described and discussed theoretically, but that seems to be difficult to implement as deliberate, intentional technical interventions. The interpersonal process in psychotherapy, or any relationship for that matter, includes dimensions of relatedness comprised of affective communication, enactments, and other behaviors that are not a part of the verbal exchange. These are the aspects of the therapeutic relationship that are often out of our awareness and beyond what we can consciously control at the moment in which they occur. Nonverbal communication is the ubiquitous and mutually influencing backdrop against which our technical interventions are made. To this point, Ehrenberg (1992) distinguishes between therapeutic technique and therapeutic action. Technique is the intentional intervention that one implements based upon the school of thought to which one adheres. Alternately, therapeutic action is that which facilitates change in the therapeutic process; it may or may not be a result of therapeutic technique. In part, therapeutic action is made up of nonverbal behaviors that serve the purpose of communication, which are potentially facilitative of the relationship.

It would be useful to further elaborate on aspects of this seemingly nebulous quality of the emotional context of psychotherapy, with the hope that therapeutic action that may be translated in therapeutic technique. This paper will explore these issues by (1) establishing the subsymbolic as the nonverbal domain of affect regulation (2) examining empirical evidence on the mother-infant literature that highlights important principles of affect regulation and (3) reviewing case examples of how different analysts have applied these principles clinically.

Sub-symbolic and symbolic levels of mental representation: the procedural - declarative distinction

Our knowledge of what occurs relationally is represented procedurally in the sub-symbolic system. These procedures refer to the skills or set of behaviors that involve emotionally relating to others, that is, the procedural knowledge of how to attach to others, ways of being with others, or, how to self and mutually regulate emotional states. Lyons-Ruth (1998) refers to this as "*implicit relational knowing*". This process occurs on many different levels of experience, from the split second, continuous processing level of sensory perception and expression, to larger units or levels of organization of behavior, such as those observed in attachment-style, to molar units of nonverbal communication that comprise enactments - all occurring at the nonconcious level. (This will be referred to as nonconscious, as opposed to unconscious, which refers more specifically to the symbolic, dynamic unconscious.) (Bucci, 1997; Beebe, 2000).

Sub-symbolic processing is very fast, simultaneously receptive and expressive, and multimodal, occurring in all sensory modalities, including the kinesthetic systems. The function of this system is regulatory in nature; the somatic communication of affect serves a regulatory function by inter-communication with the environment. As described by Bucci (1997):

> "Sub-symbolic processing accommodates infinitely fine variations; this processing is not represented by standard metric systems or computational rules. We recognize changes in the emotional states of others based on perception of subtle shifts in their facial expression or posture, and recognize changes in our own states based on somatic or kinesthetic experience; we carry out this processing without being able to specify the basis on which the judgments are made." (p. 174)

Beebe (2000) refers to the sub-symbolic as the *perception-action* level of representation that is expressed implicitly through procedural expressions such as nonverbal patterns of communication. Similarly, the perception-action view conceptualizes the process of affect regulation as occurring in the context of the relationship, again, in a continuous, moment-by-moment basis, outside of awareness, suggesting a process-oriented, dynamic quality of internalized representations.

In contrast to the sub-symbolic, the symbolic level of functioning refers to both verbal and nonverbal events that are discrete and symbolized, that is, have a direct referent in their mental representation. Nonverbal symbolic events are typically images that can be described fully by language. Symbolic functioning is sequential and linear in nature, such that one can think about or visualize only one thing at a time. The primary function of the symbolic system is to execute higher order mental processes such as goal directed behaviors that are intentionally executed. From a clinical perspective, one way to regard the health of the symbolic system is the patient's ability to elaborate and reflect on his or her own experience, or *reflective functioning* (Fonagy, 2000), or, the extent of narrative coherency in the patient's ability to express his or her own emotional life (Slade, 2000).

In fact, these measures of reflective functioning and narrative coherency can be viewed as an index of the degree of smooth integration between the subsymbolic and symbolic systems. The psychologically healthy (or healthy enough) individual has verbal-symbolic and emotional-subsymbolic systems that interact with each other to produce a stable, engaging, quality of relatedness. This individual will be able to reflect

upon the subsymbolic experience in an integrative, elaborative way, reflecting narrative coherency and high reflective functioning, In contrast, the person seeking out treatment, is likely to have some degree of disturbance or imbalance between (and within) these systems that will manifest itself in the ways in which he or she relates to others, and to his or her own emotional experiences. The degree of dissociation between the verbal and emotional systems directly reflects the level of personality organization, with the extreme split clearly observed in borderline and psychotic levels of organizations (Fonagy 1998). In the case where developmental experience is less than optimal, the dissociation between the symbolic and subsymbolic leads to lacunae in the quality of relatedness, or in more extreme cases, a lack of control or awareness of emotional/subsymbolic expression (what one might see, for example, in the explosive, borderline rages or prolongued states of depression.)

Developmental Aspects of Affect Regulation

The regulatory processes that begin developing in the infant are focused around the establishment and maintenance of homeostasis of bodily tensions, including stable temperature, sleep and feeding cycles (Sander 1977). These cycles are formed through the repeated interactions of nonverbal behaviors between mother and infant that create temporal patterns and expectancies, which are in turn based on the infant's communication of internal tension states and the environmental adaptation to those signals. Once the cycles are stabilized for these basic systems, a scaffold or foundation is established upon which more complex emotional functioning may develop. Inability to

establish these initial physiologically oriented cycles of sleep, feeding and temperature maintenance, according to this theory, will have negative consequences at latter points in emotional development, disrupting particular aspects of affect regulation.

For the infant, regulation of affect occurs through matching of affect and arousal level, repair of unmatched moments, rhythmic patterning or coordination of communicative behaviors, and negotiating particular spatial relationships within the dyad (Beebe, Lachmann, & Jaffe, 1997). These processes of mirroring, matching and coordination help the infant maintain mutually regulated affective states, that when functioning well, maintain mostly a positive affective valence. Interaction thus becomes the method by which the infant maintains a sense of calm and homeostasis, for internal, physiological states as well as sense of emotional well-being. This regulation occurs mainly through perceptual means, specifically, within the visual, auditory, proprioceptual - multimodal pathways. As the infant learns the process of emotional regulation, he or she will strive for a shared state to achieve mutual regulation. Ideally, the matched moments will be more positive than negative.

As patterns develop within the relationship, such as rhythms of torso movement, idiosyncratic cycling through positive and negative affects, etc., these process-oriented patterns are internalized as interaction structures (Beebe, Lachmann, & Jaffe 1997). Under optimal conditions, the behaviors exhibited within the dyad occurs within a mid-range of expression (i.e. neither too intense nor too weak), with a wide range of possible responses available to both partners. This results in interaction structures that are highly adaptive to multiple situations (Beebe, Lachmann & Jaffe 1997).

Alternately, in instances where dysregulation is the norm, matched affect is mainly in the negative range, and the infant is unable to negotiate other possibilities with his or her partner, the internalized patterns become rigid, and tend to occur at the extreme range of expression. Often, this child will resort to self - regulatory measures, and remain in the negative state because of his or her inability to mutually negotiate a different, more beneficial, position. This may include emotional disengagement, limited visual gaze, orientation away, and increased self and object touching. Because one of the foremost goals for the infant is to maintain a matched state, in cases where the infant is helpless to effect change towards the positive, the infant will strive to maintain the negative state in order to be joined by the mother (Gianino and Tronick 1988).

The consequences of prolonged dysregulation:

The skill of affect regulation that contributes to a larger style of emotional expression and relating is first established in the perceptual-motor exchanges that occur within the mother-infant dyad. A normal range of functioning includes a wide scope of regulatory processes and responses, that ultimately serve the goal of an enhanced, shared state. However, in situations where the mutual regulation process is interfered with, be it because of misattunement due to difficult temperament in the infant, or, an inability on the mother's part to respond in a way that serves the regulatory function, or a combination thereof, the style and characteristic way of responding to the presence of another becomes rigid, with fewer variations in expression at the dyad's disposal (Gionino & Tronick, 1988). This is considered a failure of dyadic function, creating a “learned helplessness” on the part of the infant. Efforts to achieve and maintain a positive affective valence

through engaging the mother positively fail, thus the infant does not learn the skill of interactive repair. Practically, this means that infants engage in a range of stress reducing behaviors such as rejecting stressful objects, withdrawing by sharply turning away or loosing postural control, or, decreasing perceptual receptivity, a type of dissociative process.

The split second world of the infant and visual perception: regulatory processes are quick and continuous:

As discussed above, the sub-symbolic level of processing is fast, continuous, processing of multiple levels of input. In order to study the mutual regulatory processing, one must use a microanalytic technique. The smaller the unit of the time studied, the more reciprocal interaction between partners one will find. Beebe, Lachmann and Jaffe (1997) studied five mother-infant pairs at four months of age, looking at four to five minutes of interaction. They found that when studying facial mirroring between mother and infants, partners did not change at exactly the same rate, rather they tended to follow each other in direction of affective change. They also found that the smaller sampling unit that they used (1/12th second), the more bi-directional influence they could observe. Mother's movements were always faster than the infants, and there was a range of rates at which the responses occurred. (range of response time for 3 of the 5 infants was 1/3 second, one at 5/6 and one at 1.5 seconds; adults responded within 1/6th and one at 1 1/3 seconds.) This suggests that the mother's ability to anticipate behaviors more quickly gives her the guiding, structuring role in the relationship. The rapidity of response by both partners suggests that these responses are driven by anticipation of other's responses,

or expectancies. The responses occur more quickly than would be seen in a stimulus response paradigm.

Stern (1977) labels this phenomenon temporal-visual schemas where the perceiver's response is patterned by the anticipation and contingency rates of the other's response. To make this point, he studied Mohammed Ali in a world championship fight with Al Mindenberger. In a microanalytic study of their interaction he found that 53% of Ali's and 36% of Mindenberger's jabs were faster than reaction time (180 milliseconds). Thus what made Ali a superior boxer was his ability to correctly anticipate and decode Mindenberger's behavioral patterns. This further supports the concept of interactional structures as an internalized temporal-spatial organization of expectancies of another's behaviors.

Affect Regulation in Normal Mother-Infant Dyads: Empirical Evidence

A review of the empirical research supports the theoretical position outlined above. Well regulated dyads engage in nonverbal expression of affect that occurs in a rhythmic, patterned way, where most of the interaction maintains a positive affective valence. Both partners will be engaged with each other visually, with fully oriented torsos, mirrored facial expressions, and coordinated body movements. Infant gaze indicates readiness to interact, and gaze sustains normal interaction of mother-infant dyad. Sensitive mothers will respond to infant's signal to terminate interaction when gaze is terminated by infant (Brazelton, Koslowski & Main, 1974). A regulated mother-infant interaction is bi-directional and mutually influencing, such that a behavior by one in pair

will be responded to directly by the other (Cohn & Tronick, 1988). This means that changes in affective states and behaviors are not simultaneous, but that one partner follows that other in affective change, with the sensitive mother following the lead of her infant. Mothers and infants are in synchronous affective states during part of their interaction, (Cohn & Tronick, 1987) suggesting that the dyad normally moves from coordinated to miscoordinated states at a microanalytic level. In studying these interactions, Cohn and Tronick (1987) found that mothers and infants spend about 30% of time with shared affect, with interactive repairs occur about once every 3 to 5 seconds, and about one third of repairs being made in the following second (Tronick & Gionino 1986). In healthy development of affect regulation, these patterns are expressed in a multimodal fashion, with the ideal dyad having a full range of options available to them. Regulation patterns become stable over time and across situations. For example, regulation patterns at 4 months predicts attachment style at 12 months such that synchronous interactions predict secure attachments, and asynchronous interactions predict insecure interactions. (Isabella, Belsky, von Eye, 1989). Additionally, Feldman and Greenbaum (1997) found that regulation patterns at three months predicted symbolic competence in the infant, defined by IQ, symbolic play and attunement, at two years of age. Infants with mothers with a high sensitivity rating had better re-engagement behaviors characterized by attention seeking/maintenance (infant initiates gaze, vocalizing, smiling or reaching) Four month reengagement codes predicted attachment style at 12 months (Kogan & Carter 1996).

Dysregulated Affect in Depressed Mother-Infant Dyads: Empirical Evidence

Overall, depressed dyads spend significantly more time matching in a negative affective state than non-depressed dyads. The dyad is typically more disengaged, spending little time in spontaneous play (Field, 1995). Depressed dyads engage in mostly asynchronous behaviors, meaning that their movements are uncoordinated, creating no discernible pattern of interaction. Higher rates of the depression in the mother is associated with lower incidence of synchrony, affect sharing and bi-directionality, with less faciliative and more withdrawn and/or hostile responses (Weinberg & Tronick, 1997). Interaction disturbances are frequently characterized by infant gaze aversion and maternal overstimulation (Brazelton, Koslowki & Main, 1974) However, high levels of synchrony may exist with depressed mother-infant pair, while they reciprocally maintain negativity. (Field, 1995; Cohn, Campbell, Matias & Hopkins, 1990). This is considered a situation where the contingency between mother and infant behaviors and affect is too tightly coupled. Depressed infants will maintain their negative affect and disengagement with non-depressed adults (Field, 1995).

Infants in a simulated depression condition (Tronick's still-faced paradigm used to mimic maternal depression), respond with protest, wary and look away behaviors (Cohn & Tronick, 1983). Infants in simulated depression studies also have difficulty re-entering the regulated state with mothers who are typically less sensitive and responsive to the infant's needs. These infants engage in behaviors characterized as avoidant (gaze aversion, turning away, or withdrawal from mother) and/or resistant (fussiness, squirming, aching back, increased protest). As stated above, the infant's regulation styles,

characterized as dysregulated at four months predicted insecure attachment styles at one year. Additionally, the way in which infants re-engaged with their mothers following the still-face paradigm at four months predicted attachment style at 12 months (Kogan & Carter, 1996).

The regulatory process within the therapeutic dyad
Self-regulation in the patient – self-regulation in the analyst:

Beebe and Lachmann (1998) provide clinical vignettes demonstrating the self-regulatory processes that patients and analysts engage in to compensate for lack of mutual regulation within the dyad. Based on their research with avoidant infants, they conclude that self-regulatory behaviors are expressed in order to manage the experience of overstimulation. In avoidant infants, one observes an over-reliance on self-regulating, avoidant style behaviors (such as visual avoidance, manipulation and preoccupation with objects, turning away of torso) while engaged dyadically. This allows the infant to maintain a comfortable level of interaction while engaging in self-soothing behaviors. Similarly, this avoidant style of relating can also occur in psychotherapy. For the patient, a learned or temperamental need to maintain arousal at manageable levels might mean that too much positive affect may have a flooding effect, and so the patient will thus avoid gaze, frontal body orientation and engage in increased manipulation of objects or body movements. The analyst, as well, may engage in behaviors that serve to self-soothe during moments of intensity in order to maintain engagement. The analyst may function differently with different patients in this respect, such that with some, the balance may be towards self-regulatory functioning, while with others, the balance lies in the mutual-

regulatory range. Overall, this implies a model of compensation between self and mutual regulatory behaviors, with the goal of maintaining engagement.

How does this awareness aid in therapeutic intervention? The nonverbal exchange often anticipates upcoming relational difficulties and tensions, and if the analyst is able to elevate awareness of these experiences, he/she can make meaningful use of this information. These exchanges occur in the here and now of the experience, giving them a special lived quality that serves to inform both the current relationship and historical experience of the patient (and therapist).

> "These self-regulatory behaviors of patient and analyst, such as subtle head and gaze aversions, postural orientations, and varieties of self-touching, add valuable information to the treatment in which they are recognized, acknowledged, and their place in the ongoing interaction is understood. They can provide critical information about the state of relatedness between the two partners, may reveal various difficulties in regulating the engagement, and may be useful in understanding the patient's history. When analysts find themselves tilting toward self-regulatory behaviors, they can be alerted to the possibility of interactive stress, well before they might recognize it at a more conscious, symbolic level." (Beebe & Lachmann, 1998, p. 505)

Raising the subsymbolic to symbolic: a traditional perspective

Bucci (1997) proposes that verbalizations are the path by which the sub-symbolic becomes symbolic, that is, through the method of free association and *Referential Process*. This involves chunking continuous sub-symbolic representations into functionally equivalent classifications/representational units, which may then be symbolized. Chunking may be organized by similarities in rhythm, affect or level of arousal. These chunks then come to form prototypes in the nonverbal symbolic level of processing. Once these prototypes are established, they may be labeled verbally, a process Bucci refers to as symbolization (Bucci, 1997). The patterns that develop sub-

symbolically may also form emotional schemas or transference relationships. Ultimately, this level of nonverbal experience must eventually be accessed through language. Her theory emphasizes the interaction between the therapist and the patient that occurs on the subsymbolic, nonverbal level, however, the free association process is patient focused, in a more classically oriented, transference-countertransference, one-person psychology framework. In other words, the focus is not the emergent interaction between patient and therapist, as much as the way in which free association will aid in the chunking/labeling process. The technical impact does not occur directly on the subsymbolic experience itself, rather the analyst's function is one of facilitating this translation process through interpretation. While this specifically includes subsymbolic activation – the visceral, somatic experience of affect in the patient and then responsively, in the therapist, the technical lens is focused on raising the subsymbolic to the symbolic.

A relational perspective on the use of nonsymbolic process

A more fully relational perspective focuses the locus of change on the mutual contributions brought to the therapeutic relationship by patient and therapist. Relational theorists have developed a new language to describe various aspects of the therapeutic interaction. Stern, Sander, Nahum, Harrison, Lyons-Ruth, Morgan, Bruschweiler-Stern and Tronick (1998) refer to the back and forth regulatory process as *moving along,* while Lachmann and Beebe (1996) label it *ongoing regulation.* This regulatory process is characterized by a match-mismatch/rupture-repair process that serves to move the dyad to a transformed state (Lachman and Beebe 1996, Safran and Muran 2000). The *heightened*

affective moments (Lachman and Beebe, 1996) and the ruptured moments are fertile and receptive points in the interaction where interactive change may occur. These become and are the *moments of meeting* (Stern et al.) – receptive, fertile, rich instants in the interaction that are special because of their authentic quality – the authentic moment of the intersubjective meeting of two minds and bodies.

Ongoing Regulation and Moving Along

'Moving along' (Stern et al 1998) applies to the process of affect regulation occurring in the dyad as "a string of 'present moments" (p. 909). The moving along moments are made up of 'present moments', the smaller, microanalytic events that add to the larger patterns of implicit experience.

> "The fairly tight cyclicity of infant activities (sleep, activity, hunger, play etc.) assures a high level of repetition, creating a repertoire of present moments. In therapy too, present moments repeat variations on the theme of habitual moves that constitute the unique way any therapeutic dyad will 'move along'. Present moments will of course be constrained by the nature of the therapeutic technique, the personalities of the interactants and the pathology at issue." (Stern 1998, p. 911)

Lachmann and Beebe's (1996) use a similar construct of 'ongoing regulation', to characterize the moment-by-moment patterns that develop within the relationship. As with mother-infant relationships, ongoing regulation is essentially the 'moving along' process, characterized by patterned expectancies between patient and therapist regarding what they can and cannot expect to receive from the other. Expectancies occur around patterns of reaction, affect valence and arousal level, and physical orientation to each other (as discussed in infant development section above). In the therapy, these regulatory patterns become internalized, over time, on a procedural level.

Rupture and Repair:

Another major organizing principle of the affect regulation process is the construct of rupture and repair. This is discussed by a number of theorists from varying perspectives, and again has its roots in mother-infant research.

When heightened moments remain dysregulated, or when ongoing regulations become dysregulated in a prolonged way, a breech in the regulatory functioning may occur. Only when these dysregulated moments become repaired, that is, re-regulated, they may become a therapeutically special event.

Mild disjunctions in mother-infant dyads are considered normative, even desirable, (Gionino & Tronick, 1988) such that "coming to implicitly know how to repair and redirect the improvisational process is one of the main hidden agendas of the parent-infant interaction" (Stern 1998a, p. 303). In contrast, more severe disruptions, and disruptions that go unrepaired for a prolonged period of time, are associated with an increase in dysregulated states (Tronick & Weinberg, 1997). This was evidenced in work with depressed mothers and their infants, as well as consistently intrusive mothers.

Disruption and repair in the analytic relationship focuses on the violation of expectancies, and the attempts to repair that interaction to regain an affective homeostasis. In adult psychotherapy literature, ruptures are highlighted as a pivotal juncture in the relationship that is potentially highly reparative and predictive of good therapeutic outcome (Safran, Crocker, McMain, & Murray, 1990; Safran & Muran, 1996; Lachmann & Beebe, 1996).

> "The therapeutic action of disruption and repair lies in the organization of a greater flexibility in negotiating a range of coordination and miscoordination in the process of mutual and self-regulation." (Lachmann & Beebe 1996, p. 6)

Ideally, a stable, positive alliance is ultimately attained by the end of treatment. Achieving this will most likely include moments of misunderstanding and feeling misunderstood, leading to the expression of negative feelings and to a rupture in alliance. These are very important moments related to the relational history that the patient and therapist bring to the therapy as well as to what aspects of interaction are highlighted in the here and now of the relationship.

> "Since alliance ruptures are likely to occur at junctures where the therapist's actions confirm a client's dysfunctional interpersonal schemata, they are ideal points for phenomenological exploration. The existence of an alliance rupture provides the therapist with a unique opportunity to explore expectations, beliefs, emotions, and appraisal processes which play a central role in the client's dysfunctional cognitive-interpersonal cycle." (Safran et al. 1990, p. 156)

The bond/rapport aspect of therapeutic alliance is the ongoing affect regulation in the therapeutic dyad, as measured by the moment-by-moment quality of connectedness. As with the mother-infant dyad, this regulation may be studied and used to predict long-term outcome of the therapy. DeRoten et al (1996, 2000) and Fivaz-Depeursinge et al (1994) study this aspect of therapeutic alliance as commnicational alliance. They found that in couples therapy, self reports of high therapeutic alliance and dyadic adjustment were correlated with patterns of regulated communicational alliance (which they measured by looking at the interaction of nonverbal behaviors). These couples were affectively engaged with each other and the therapist, and were coordinated body

movements that helped to sustain this engagement. Alternately, miscoordinated interactions predicted low alliance ratings.

From a dynamic systems, relational perspective, the primary goal of therapy is not complete attunement, but an understanding of the ways in which misattunement and attunement occur (Morgan, 1997). Additionally, from a systems approach, the *theory of perturbation* states that systems must be disorganized in order to create new forms of organization (Thelen & Smith, 1994). This implies that focus on the nonverbal aspects of rupture, disappointment and non-empathic connections that can develop in the relationship will give understanding into malfunctioning relational patterns. Morgan (1997) highlights the importance of examining rupture and repair in the psychoanalytic situation:

> "Therapy that fails to notice and repair interactive failures can reinforce that kind of experience of turning to one's self and excluding the therapist -- in this case, with the patient relinquishing her state of need in the face of my lack of response. In other words, if my patient and I had not repaired the miscoordination, we could have further reinforced her sense of needing to hold back from being the person she really felt herself to be, the issue which we had successfully confronted the previous session. In the face of the derailment of the coordination between us, something more than passive waiting was required of me to bring us back into attunement. It was necessary for me to be aware of both of our states, eventually in the shift that occurred from the rich preceding hour to the dryness of the current one, but first in that state I felt when I was only dimly aware that I had rebuffed her at the hour's beginning." (Morgan, p. 326)

According to systems theory, pathology may develop when patterns of relating become rigid and enclosed, such that the system is not responsive to varied and alternative ways of interacting. Therapeutic action comes about when the relationship transitions from one stable state to another; thus change requires disorganization (Thelen

and Smith, 1994). The rigidity of the system, within the patient-analyst dyad, develops initially through the patient's early experiences of misattunement - whether it be misunderstanding through deprivation or intrusion, or both, that result in painful feelings on the child's part that need to be defended against in order to sustain engagement with the misattuning caregiver (Gionino and Tronick, 1988). This makes disruption and perturbation in the analytic dyad especially important because it gives the analyst insight into those early difficulties and opportunity for a new experience in the relationship.

> "the analyst investigates and interprets the qualities or activities of the analyst that produced the disruption, its specific meanings; its impact on the patient's state and experience of the analytic bond; the early developmental traumas it replicates; and especially important, the patient's expectations and fears of how the analyst will respond to the articulation of the painful feelings that follow in its wake" (Stolorow, p. 344)

Heightened Affective Moments

In a similar vein, *heightened affective moments* are special moments that serve as an organizing principle in changing regulating patterns within the therapeutic dyad (Lachmann and Beebe, 1996). These are events that are uniquely intense in a particular way, and occur in the context of the ongoing regulations. These moments may be therapeutically seized upon at the nonverbal level, again by implicit engagement. The nonverbal exchange may involve matching/joining, or scaffolding/supporting in attempts to re-regulate a dysregulated moment.

> "The therapeutic action of heightened affective moments is mediated through state transformations that potentially usher in opportunities for expanded self-regulatory range and altered patterns of mutual regulation." (Lachmann & Beebe 1996, p. 7)

The dyadic system and implicit relationship is emergent from the bi-directional, moment-by-moment ongoing affective interaction. Forms of organization are moved beyond their criteria points, that is, the ongoing regulation (Lachmann and Beebe, 1996), or, moving along process (Stern et al, 1998) by multiple means, such as through a particularly emotionally intense interchange (heightened affective moment or rupture). These events, having been built on already, ongoing processes, serve to disorganize or destabilize prior organizations and create new ones. They may potentially become 'moments of meeting'.

Moments of Meeting

Stern et al (1998) go on to describe the 'present moments', 'now moments' as a part of the 'moving along' process. The patterns of the 'present moments' will become familiar (and unique) to the dyad over time. These 'present moments' are the context in which the special 'now moments' takes place. The 'now moment', a new experience in the relationship, is pregnant with possibility. It is the emergent moment of the dyadic system, and cannot be predicted. When this 'now moment' is therapeutically utilized in a productive way, the dyad moves into the 'moment of meeting'.

> "There are essential elements that go into creating a 'moment of meeting'. The therapist must use a specific aspect of his or her individuality that carries a personal signature. The two are meeting as persons relatively unhidden by their usual therapeutic roles, for that moment. Also, the actions that make up the 'moment of meeting' cannot be routine, habitual or technical; they must be novel and fashioned to meet the singularity of the moment. Of course this implies a measure of empathy, an openness to affective and cognitive reappraisal, a signaled affect attunement, a viewpoint that reflects and ratifies that what is happening is occurring in the domain of the 'shared implicit relationship', i.e. a newly created dyadic state specific to the participants." (Stern 1998, p. 913)

'*Moments of meeting'* are the golden events where change occurs in the subsymbolic, implicit relationship (Stern et al. 1998). They are a salient, special or unusual occurrence in the relationship. Sander (1977) first used this term in describing mother-infant interaction and adaptational processes in the relationship. These are unusual moments, due to either their intensity, a temporary breech in the relationship, or an unusual behavioral enactment that potentially precipitates a new experience between therapist and patient. A 'moment of meeting' provides a new context in which patient and therapist interact, which will be subjectively experienced as a sudden shift in experience. The 'moment of meeting' that occurs during the process of mutual regulation allows for a re-organization of the dyadic experience, ultimately creating an 'open space' in which both partners attempt to readjust to the new context.

Mutual regulation and the role of interpretation

New relational ways of being involve creating new intersubjective experiences that occur on both the implicit and explicit levels of interaction. Dyadic states are emergent and context dependent; they develop collaboratively through verbal understanding and empathic responsiveness. However, some perturbation in the ways of interacting is essential for change. Thus, what is subjectively experienced as precipitous, acute moments of change or insight in the therapy, are in fact moments that have been effectively and affectively negotiated over a long period of time. In this line of thinking, the longer-term process of emotional regulation serves as the preparatory phase for interpretation, so that the interpretive moments may be contextually embedded, and

facilitated by that emotional context. Stern et al (1998) refer to this as the "something more" that is needed for an interpretation to be effective. It is at the point where the subsymbolic and symbolic levels of experience may be usefully integrated.

According to Stern et al. (1998a), 'now moments' are transformed into 'moments of meeting' as a result of change in the implicit relationship. This means that interpretations have a less valued place than is typically thought of in classically oriented psychoanalytic literature. In fact, Stern suggests that interpretations are not ever necessary for a change in the implicit relationship because these are two independent and parallel cognitive systems. In the worst case, interpretations may even be counterproductive by taking away from the momentary experience:

> "Strictly speaking, an interpretation can close out a 'now moment' by 'explaining' it further or elaborating or generalizing it. However, unless the therapist does something more than the strict interpretation, something to make clear his or her response and recognition of the patient's experience of a shift in the relationship, then there will be no new intersubjective context created. A sterile interpretation may have been correctly or well formulated but it will most likely not have landed and taken root. Most gifted psychoanalysts know this and do the 'something more', even considering it part of the interpretation. But it is not. And that is exactly the theoretical problem we are grappling with. If the scope of what is considered an interpretation becomes too large and ill-defined, the theoretical problems become impossibly confused." [italics added] (Stern et. al., p. 914)

According to Stern et al., there is something special and uniquely different about 'moments of meetings', and that to consider that these moments would occur as a result of interpretation, would miss their whole argument that implicit relational knowing is something qualitatively different than semantic knowledge. They make the point that the therapist and patient, acting within their roles, are working within the transference-countertransference framework. But for a 'moment of meeting' to occur, the interaction

must take on an authentic quality, and this authentic interaction may only occur when the 'role relationships' are shed. This is the emergent, dynamic, and unique quality that is idiosyncratic to each therapeutic dyad.

Similarly, Lyons-Ruth (1999) states that the interpretative moment is not mutative in and of itself, but only lends clarity to the preceding period of destabilization and reorganization in implicit relationship. "The more distal source of change, however, is not the proximal crystallizing encounter or interpretation but the proceeding long period of destabilizing patient-analyst encounters" (Lyons-Ruth 1999, p.610). Her position is slightly more integrative, suggesting that interpretations have ameliorating effects in the context of the moment-by-moment regulatory process. Again, change does not necessarily involve a mapping of symbolic onto sub-symbolic. According to Lyons-Ruth, this can never be done completely, and may at times not even be necessary for productive work to occur. Instead, change in this system occurs relationally through an experience of perturbation or rupture in the system; old implicit patterns become destabilized and transformed based on new experience. This process occurs through empathy on the therapist's part, which involves the complex process of perceiving and responding to another's subjectivity on a perceptual-motoric level. Ultimately, the cumulative effect of subsymbolic interaction over time creates a moment of intensity that is distinctly different, and that may or may not be verbalized.

> "In psychoanalytic work, paying close attention to all transactions in the hour is in keeping with the need to understand the multiple implicit procedural maps of the patient and their breadth, flexibility, and range of application or their discontinuities and inflexibilities. However, if development is not primarily about

> translating primary process into symbolic form, but about developing implicit adaptive procedures for being with others, in a wide range of emotionally charged situations, then making the unconscious conscious does not adequately describe developmental or psychoanalytic change. (Lyons-Ruth 1999 p. 590)

Examples of therapeutic action on the subsymbolic process

In reviewing the literature, there appears to be at least two distinct but related ideas about how to have an therapeutic impact on the subsymbolic patterns of relating. Both approaches directly apply the organizing principles of the mother-infant relationship; affect matching, working with arousal level, use of rupture and repair, and matching rhythm of interaction and spatial relationship between the two participants. However these approaches differ in how explicitly these concepts are used.

Kiersky and Beebe (1994) use a constructivist approach, using these techniques with more "difficult" patients, because of these patient's tendencies to strongly dissociate affective states, and express them more solely on a sub-symbolic level. Difficult patients have:

> "consistent difficulty representing their experience of themselves or the therapist. With them, it is possible to observe how they create and maintain degrees of physical distance and spatial boundaries, what kind of temporal pattern they establish in their communication, and how they manage and maintain emotional arousal. It is also possible to observe whether and how the analyst is utilized to regulate aspects of experience and inner alone states. Here, background becomes foreground. Every nonverbal action of the patient has greater significance: greeting and leave-taking, gaze behavior, posture, inadvertent vocalizations, turning toward or away, moving with or against the analyst, timing, intensity, and so on." (Kiersky & Beebe, 1994, p. 393)

According to this approach, the analyst would reconstruct a plausible early experience, or "model scene" (Lachmann, 1992), that would make sense out of the nonverbal interpersonal process being played out in the therapy. This construction would then be elaborated on, linking it to accessed memories and feeling states.

Kiersky and Beebe cite an example of a woman who came to treatment with the presentation of feeling "frozen" much of the time. She would often shut her eyes to "shut-out" her visual field. This was explored in terms of early mother-infant interactions, as a way for the patient to regulate arousal and degree of contact by limiting visual contact. The analyst suggests that the patient needed to rely on self-regulatory means after repeated inability to engage a depressed mother in a mutual regulatory process. Her behaviors represent an attempt to maintain a homeostasis between relatedness and disconnection with her mother, and were represented as an interaction structure formed during childhood that the patient carried into adulthood. Her

> "apparent avoidance of contact was in fact an attempt to remain connected, while managing internal fears and conflicts. Such apparent lack of engagement can be overcome if it is understood not as a lack of capacity for attachment or transference but as part of the transference, providing valuable information about early experience. It is as though a fragment or dimension of an early interaction structure has been rigidly retained, delaying further symbolic elaboration and transformation." (Kiersky & Beebe, 1994, p. 397)

Similar to Bucci's ideas (1997), this approach relies very much on verbally labeling, identifying and elaborating on the nonverbal patterns as they become apparent to the analyst. The reconstructions are taken as prototypic summaries of the implicit relationship the patient experienced with primary caregivers during childhood. However,

the reconstructions may only be done in retrospect, after the analyst has come to realize her engagement and participation in the patient's implicit relational patterning.

An alternative approach, elaborated by Knoblauch (1997), is more technically implicit than Kiersky and Beebe's (1994). As in infant researcher, Knoblauch focuses on the "patterns and shifts in patterns of process contours (volume, tone, tempo, rhythm) that emerge in dyadic interaction" (Knoblauch 1997, p. 3). This implicit level of interaction is neither symbolically encoded nor understood, but is enacted between patient and analyst. He cites two clinical examples in which he discovers that he engaged with the patient in a particular nonverbal pattern in his vocal qualities - level of volume and rhythm of speech - that had a modulating effect on their experience. He was able to recognize this process with the patient only in a post-hoc understanding, and at a later time, explores this experience with the patient verbally.

> "Using our interaction and the process contours that characterized as the medium for communication, I was establishing a new pattern with my patient, one that he might be able to feel although not verbalize. With his response to my rhythms, volume, and tone, he was able to begin feeling what it was like to calm down with the help of another person. He appeared to feel responded to and protected by me in the sequences." (Knoblauch p. 5)

Knoblauch describes feeling himself being drawn into a pattern that he could only identify retrospectively. In contrast to Kiersky and Beebe (1994), he does not make any attempt to reconstruct historical meaning from the nonverbal aspects of the interaction, but allows the meaning to emerge and unfold organically. From this perspective, the mutative process occurs in the nonverbal realm without the aid of symbolization. However, the later ability to integrate this experience symbolically also has further

impact on the integration and mediation of dissociated affects. Clearly, the important impact for these difficult patients occurs in the nonverbal realm. This model relies on the assumption that the meaning for the patient is co-created and emergent, as opposed to interpreted in a positivistic context, such that these properties and meanings cannot be known by the analyst prior to the interactive experience with the patient.

Review of the literature on nonverbal behavior and rapport in psychotherapy - Linking theory to method.

Research on nonverbal behavior in adults share similar views with the mother-infant literature about the function of nonverbal behavior in communication. Scheflen (1963) states that emotional communication is as a regulatory process that is largely nonverbal and kinesic, and serves to regulate and pace and level of intimacy of the relationship, as well as individual deviant behaviors. Scheflen anticipates the later dynamic systems theories by emphasizing the emergent qualities of the interaction. The dyadic system between partners is made up of a mutual reciprocity of signals that cannot be defined as action-reaction events, but rather as an interaction within a social context. Nonverbal communication research tends to be behaviorally oriented, with theory oriented towards understanding the general principles of communication. Specifically, this means that the focus is on nonverbal behaviors that facilitate or hinder the communication process. Those studies that focus on dyadic relationships, psychotherapy and doctor-patient specifically, focus on the how nonverbal communication supports and contributes to an experience of rapport. Much of this research can be organized under the rubric of the Coordination-Rapport Hypothesis (Tickle-Degnen & Rosenthal, 1987)

which states that there is a significant relationship between coordinated nonverbal behaviors within the dyad and subjectively perceived rapport. According to this theory, coordination of nonverbal behavior (not simply the expression of behaviors themselves) determines the meaning of the communication. For example, Noller (1980) showed that distressed spouses gaze at each other more often but, that their gazing behavior is not coordinated with their speech. Whereas non-distressed couples engage in coordinated gazing that promotes an experience of intimacy and rapport (Bernieri & Rosenthal 1991, Meltzoff, 1993).

The constructs of coordination and interactional synchrony studied in adult nonverbal behavior have a large degree of overlap with the principles outlined in the mother-infant literature, including the rhythmicity of interaction, bi-directional influence of behaviors, matched valence of affect and spatial organization between partners. These constructs are operationalized in the nonverbal communication literature by the study of postural mirroring, coordination of kinesic behaviors, orientation of torso and gaze, qualities of vocal intonation and affective valence. A well-regulated mother-infant dyad follows the principles of coordination, synchronicity and matching affect valence. These principles are also empirically validated in studies measuring the relationship between coordination and rapport.

The following section will summarize this literature, with the goal of supporting the connection between regulatory principles established in the mother-infant dyad and those theories outlined in the study of nonverbal communication in adult.

Though a few earlier studies focused on the interactive process (Scheflen, 1963), most of the earlier work focused on one partner within the dyad. This was in part due to the methodologies and statistical analyses available at the time. As methods and statistics became more sophisticated, theories of nonverbal communication have become more complex and precise. However, earlier studies were still able to identify important nonverbal behaviors related to good rapport and empathic relating. The one-person focus was the first step towards understanding basic aspects of nonverbal communication. These findings have been validated and expanded upon by subsequent research that focuses on the two-person, interactional process.

The methodology used in the study of coordinated behavior may be divided into three areas: (1) studies that measure rapport by observer judgment of nonverbal interaction between patient and/or therapist, (2) studies that use microanalytic coding to measure the number of nonverbal behaviors and then correlate these behaviors with measures of rapport using tradition methods of analysis of variance, and (3) studies that use microanalytic coding to statistically model nonverbal interactions using sequential analysis and correlating these results with measures of rapport. These studies use either microanalytic methods of coding that break either time units or behavioral events into discrete, minute segments, or, macroanalytic methods that refer to large scale phenomenon such as sequences of events or repeated occurrences of same event over extended period of time (event based coding).

The review below will focus on empirical research that uses behavioral coding methods. This will provide support and sound reasoning for the methods section to follow

this literature review. Scheflen (1973) established one of the first and most detailed studies on nonverbal behavior in a family psychotherapy. He created an elaborate coding scale that focused on many nonverbal aspects of the interaction, including posture, body orientation and visual orientation. Using this behavioral coding method, he found that nonverbal postural congruence is often a good measure of rapport. Two people can be considered posturally congruent when they hold their extremities, (heads, arms, hands, legs and feet) in the same positions. Scheflen observed that congruence often occurs in the context of a close or intimate relationship. Lack of postural mirroring is often associated with other non-communicative behaviors such as lack of eye contact. Scheflen's findings have been supported by others (Charny, 1966; LaFrance, 1979; Condon, 1979; Kendon, 1970), to be further elaborated below.

Charney (1966) sought to replicate and further understand the relationship between congruence and verbalizations in a psychotherapy. He "filmed" a therapeutic dyad, with full view of the upper body both participants. Specifically, he hypothesized that patterns of postural relationships are behavioral indicators that correlate with the moment-to-moment relationship operating within the dyad. He analyzed 34 minutes of the session, coding behavioral interactions frame by frame (1/24th second) and found that as the film progressed, the duration of the congruent events increased, and the duration of the noncongruent events decreased. As this congruence increased, the references made by the patient tended to increasingly refer to other people and become more "object oriented" and less self-referencial.

In a counseling psychology study, Fretz (1966) looked at 17 counseling dyads during the first, third and sixth interviews. Sixty nonverbal behaviors were coded and then factor analyzed, resulting in 10 distinct behaviors that were positively correlated with self-report inventories of rapport. These were various levels of head movements, hand movements, smiling and leaning forward. He found that forward/backward lean was the single most significantly correlated variable, and most positive indicator of a good relationship for clients.

LaFrance (1976, 1979) was specifically interested in validating Scheflen's hypothesis that people in a group will mirror each other when they have common ideologies or perspectives. She operationalized this as interactive rhythms, or patterned coordination in time. LaFrance and Broadbent (1976) looked at posture sharing between students and professor in a classroom setting, and self-report of rapport by students. They found a positive and significant correlation between high rapport and posture mirroring. LaFrance (1979) underwent a second study to attempt to establish the direction of causality between rapport and posture mirroring using a cross-lagged analysis. Using a macrocoding scheme, she found a significant correlation between posture and rapport and found "cautious" support for the direction of causality going from mirroring behavior to rapport, meaning that rapport was an experience that emerged from the postural congruence.

In a similar vein, Kendon (1982) focused on interpersonal spatial organization, the orientation of body torso and its relationship to emotional availability. How people place themselves in relation to another physically may indicate how available they make

themselves to that person emotionally. Two people facing each other in relatively close proximity will have a qualitatively different communication experience than two people who do not completely face each other and are more physically distant. Shared "interactional space" in which two individuals are en face facilitates the communication process. Kendon refers to these as "facing formations" or "F formations".

> "if one examines instances where two participating members of a multiperson conversational group establish an utterance exchange axis together, in many cases one may observe how the bodily orientation of each to the other is accomplished prior to any exchange of talk and it is done synchronously, suggesting that the two interactants, in advance of any explicit exchange of utterance or gesture, had come to share each other's tempo of action. The bringing of orientational and other movements into synchrony at these points may be or importance in establishing the jointness of orientation necessary for each other's acts to become the shared focus of attention. Presumably, by coming to share each other's tempo, each perceives that the other's tempo, behavioral pace is linked to his own, and it is by this that the jointness of attention is conveyed" (Kendon, p. 360)

In an actual, videotaped, sixty-two session psychotherapy, Davis and Hadiks (1990, 1994) studied the relationship between nonverbal behavioral changes and client state changes as measured by Gendlin's Experiencing Scale. The first study focused on the client state changes, while the second attempted to look at the interactional process between patient and therapist. Using an adapted coding methods based on the dance therapy movement, they focused on ten randomly selected sessions representing each quarter of the therapy. Raters looked at trunk lean, lower body width and leg tuck, upper and lower body orientation, with positions coded by event. Gesticulations were coded as laterality, body part articulation, dynamics, gesticulation length and spatial complexity. Gesticulations were coded for every 30-second interval.

The 1990 study found significant correlations between the Experiencing Scale and

the position variables simultaneous to and following the two-minute period during which the experiencing scale was scored. (position variables are trunk lean, relative separation of knees and leg tuck, collapsed into one variable). They interpreted these findings to mean that as the client was able to discuss material in a more meaningful way (e.g. higher on the experiencing scale), her body language became more open towards the therapist. They did not substantiate the second hypothesis, that the nonverbal behavior precedes the verbal content that is related to it. This is attributed to the possibility that the interval of measurement (2 minutes) was too large, and that they needed to use smaller units of measurement in order to assess the sequence of events.

Davis and Hadiks (1994) were interested in finding a nonverbal measure of the therapist's attunement to the patient. They predicted a positive and significant correlation between the therapist's "position accessibility" ratings and the Therapist Experiencing Scale, as well as a positive correlation between therapist and patient accessibility ratings as measured by the Nonverbal Interaction and States Analysis scale. They found a highly significant correlation between therapist position and Therapist Experiencing Scale, such that the more verbally engaged the therapist was, the more forward leaning, en-face orientation, were his body positions and the more intense and dense were his gesticulations. In an analysis of the interaction, they also found a significant positive correlation between patient and therapist positions, supporting the mirroring findings of Scheflen and LaFrance noted above. Finally, the patient's positions and the Therapist Experiencing Scale were highly correlated. They interpret these findings to support the significance of nonverbal behavior as an important indicator of level of engagement.

Marital Interaction: A study of microanalytic interaction in an adult dyad

Gottman, Markman and Notarius (1979) studied marital interaction using improved methodology over the studies reviewed previously in terms of the attention given to listener-speaker roles, and by using a sequential analysis to look at dyadic interaction. They distinguished between the printed word content, the nonverbal delivery of the message (affect) and the nonverbal behaviors of the listener (context) by comparing these behaviors between a group of 14 distressed couples and 14 satisfied couples, with level of marital satisfaction of each pair determined by a self-report. Subjects were videotaped while discussing one problem in their marriage with the goal of coming to a mutually satisfactory resolution. Videotapes were then coded on content items using the eight summary codes of the Couples Interaction Scoring System (CISS), and nonverbal domains were coded using a hierarchy of cues that code positive, negative and neutral affect. Length of behavioral units coded was dependent on the change in content or affect of either speaker or listener. Thus, the length of time coded was variable, and significantly longer than studies on mother-infant interaction. The results include analyses of combined nonverbal and verbal process and well as independent examination of each. Analysis of variance showed that positive content codes discriminated distressed from non-distressed couples, but positive nonverbal codes did not. However, negative and neutral nonverbal codes did discriminate the two groups. Overall, nonverbal behavior discriminated distressed couples better than verbal behavior. Interactional patterns, as measured by sequential analyses technique, in summary of both verbal and nonverbal codes, showed that distressed couples are likely to enter into cross-complaining loop,

followed by a negative exchange loop, and are less likely to enter into a contract phase. Alternately, non-clinic couples are likely to enter a validation sequence, avoid negative exchanges, and end with a contract phase. Finally, Gottman attempted to validate the reciprocity of affect hypothesis using the sequential analysis technique. He found mild support for the finding that clinic couples tend to reciprocate positive affect early in the discussion, while non-clinic couples tend to be more positive later in the discussion. Clinic couples also showed a tendency to reciprocate more negative affect than non-clinic couples, though both engaged in negative exchanges.

In a later study, Gottman and Levenson (1992) sought to identify marital processes that were related to dissolution of marriage. They identified regulated and dysregulated couples by coding a problem solving conversation using three different measures: the Rapid Couples Interaction Scoring System that classified couples into regulated and dysregulated groups (Krokoff, Gottman & Hass, 1989); the Marital Interaction Coding System (Weiss and Summers, (1983) and the Specific Affect Coding System (Gottman & Krokoff, 1989). The RCISS classified couples in the regulated - dysregulated groups based on the total number of positive speaker codes minus the total number of negative speaker codes (operational definition of regulation). The cumulative total of these points was plotted, each of which was thought to be a stable estimate of the difference between positive and negative codes over time. The coding unit was defined by the speaker turn. MICS coding is a variation of the RCISS, with data reduced into the four following negative summary codes: defensiveness, conflict engagement, stubbornness and withdrawal from interaction. The MICS was coded continuously during

30 second intervals for a span of 15 minutes. Finally, the SPAFF focuses solely on affect, including subscales for verbal content, voice tone, context, facial expression, gestures, and body movement. Again, the speech turns were used as coding units. This study coded only the speaker affect, coding each turn at speech as affectively neutral, negative affects as anger, disgust/contempt, sadness, fear and whining, and positive affect as affection, humor, interest and joy. Though there was no formal sequential analysis performed, one can observe that regulated couples appear to have more variability in their response, and their interactions are more positive than negative. Alternately, the non-regulated couples more closely mirror each other in their negativity.

Gottman's work is different than the studies reviewed prior to it in that he codes affect directly (positive, negative and neutral), and indirectly through nonverbal behaviors. Also, the units of analysis - the behavioral, event based codes, are relatively large units of time, as compared to other research that is able to support a model of reciprocity of affect. (see Cohn & Tronick, 1987, and DeRoten et al, 1999, 2000 for examples). His work supports the finding that nonverbal aspects make an important contribution to meaning in the interaction than verbal components alone.

The study of microanalytic interaction in psychotherapy

Based on Kendon's work on gaze and body orientation, Fivaz-Depeursinge et al (1994) piloted methodology for measuring coordinated gaze behaviors, or the "attending frame" within a couples therapy. They administered the Lausanne triadic discussion task, a task lasting 30 minutes that asked couples to discuss on a self-identified conflict two

separate occasions. This task has a specific structure that designates speaker roles to husband, wife and therapist consecutively, ensuring that each person will be designated for each role at a different time, allowing the measurement of the nonverbal behaviors that correspond to each speaker role.

The therapeutic alliance was measured by self-report, using the Dyadic Adjustment Scale, and the Couple Therapy Alliance Scale. Eight triads were examined in all. The groups were controlled for marital satisfaction, and were then were further dichotomized for degrees of therapeutic alliance. During the discussion, they coded gaze towards or away at one half second intervals, and coded speaker turns using an event coder, into speaker-listener roles.

For the analysis of triadic gaze engagement, individual codes of towards or gazing away were combined into triadic addresses. For this study, two couples were compared; one with high marital satisfaction and therapeutic alliance measures, and the other with low marital satisfaction and therapeutic alliance measures. The individual participation was assessed as to whether they adhered to speaker turns during the task, e.g the percentage of time spoke during speaker and listener roles. Individual gaze behavior according to speaker role was also assessed. The results supported their hypothesis regarding therapeutic alliance and attending frame. The high alliance, nondistressed martial couple triad maintained high gaze engagement appropriate to their conversational roles, while the low alliance, distressed marital couple did not maintain the attending frame. Specifically, the husband was disengaged (not attending) for a significant amount

of time that the wife was speaking. Both therapists appeared to maintain visual attending throughout the segment.

In a follow-up study, DeRoten, Fivaz-Depeursinge, Stern, Darwish, and Coboz-Warnery (2000) wanted to further establishing a nonverbal measure of the communicational alliance by looking at body formation (Kendon, 1970, 1982, 1990) and gaze behaviors. The authors propose to explore the interactional process and the mutual contributions of patient and therapist of repairing ruptures in the alliance. They understand "interaction" research as being divided into: (1) the study of affect involvement and (2) the coordination of exchanges. The authors are interested in defining a sublevel of therapeutic alliance called the communicational alliance, defined as the coordination of individual affective involvement behaviors of all of the participants in the therapy. This alliance is the subtext of a stable affective context against which a verbal alliance may form. They hypothesize that this communicational alliance is a necessary but not sufficient condition for a therapeutic alliance to occur. They examine three levels of exchange; the frame of readiness at the body level, mutual attending as measured by gaze, and affective sharing. They seek to validate their concept of communicational alliance by comparing two procedures – a microanalysis and global assessment of the interactions. They want to also further clarify the relationship between body orientation and gaze. They compared the high and low communicational alliance groups, as assessed by judges, and the observations of behavioral coordination. Their hypotheses were as follows: 1. Partners with high alliance would favor body and gaze formation that was inclusive of all participants, 2. High alliance groups would favor gaze formations that

followed rules of conversational turn taking and 3. High alliance groups would coordinate between turn taking roles, body formation and gaze and 4. Triads with a high alliance initially were more likely to maintain the high alliance.

Body formations were microanalytically coded, based on partner's body movements (coding scheme developed from prior study). The time interval was defined by length of event (event based analysis). Coded data was grouped into three categories: stable inclusion indicated the emergence and maintenance of three way participation; unstable inclusion occurs when inclusion in maintained sporadically or inconsistently; stable exclusion occurs when inclusion is observed only temporarily or not at all. Gaze formation was coded for every 1/2 second. Gaze formation was also combined with adjustment to speaker/listener roles as follows: Inclusion and adjustment – gazes follow rules expected for conversational roles; inclusion and disadjustment – partners gaze at each other but do not follow the conversational rules; exclusion and disadjustment – partners to not gaze sufficiently at each other. They found the following hypotheses were supported: High communicational alliances showed 1. The three way participation (inclusion), 2. Adjustment to conversational roles, and 3. Stability of alliance between beginning and end of the therapy.

Summary of the nonverbal literature:

A review of the constructs of nonsymbolic, procedural processing suggests that the sensori-motor processes involved in communication of affect and empathy are a continuous, reciprocal interaction. These findings support the use of microanalytic coding

to study the processes of affect regulation and empathic communicational processes in psychotherapy. Interestingly, studies that use the alternate method of observer judgment to assess interpersonal coordination reliably predict self-reports of rapport based on observation of nonverbal interactions. These judges rely on their own perceptual processes to observe coordination, and so are likely to act as refined measuring tools of rapport. When asked to describe the behaviors observed using language, they appear as larger, molar events, or behaviors that are synchronous, while in fact, the continuos, interactional process occurs at a minute level. This follows Gestaltist principles of perception - the whole appears greater than the sum of its parts, and the isometricism of behaviors, such that interaction may appear to occur on multi-modal levels. (Feiner & Kiersky, 1994).

Studies that measure more molar levels of behaviors, such as matched leg and arm movement, to a large extent, do not measure interaction, but frequency counts of matched behaviors. This allows for a "snapshot view" of the interactions, such that the increased frequency in matched moments is most likely a reflection of high frequency of coordinated, reciprocal interactive behaviors over time. Finally, the microanalytic studies looking at interactions between married couples and mother-infant dyads are able to capture the interactive process through statistical modeling through time series analyses. These studies are most accurately able to measure our perceptual process in order to study moment-by-moment change in regulation within the dyad. Overall, all three types of methodologies provide converging evidence that level of rapport is directly related to degree of coordination of nonverbal behaviors. These studies consistently find that gaze,

spacial orientation of body, symmetrical positioning of limbs in an open position and head nodding, all occurring in the context of shared affective expression, provide a sense of rapport, empathy, and alliance within the interaction. These behaviors occur in a coordinated, responsive fashion, with multimodal pathways of responsiveness. These studies share common organizing principles in mother-infant interactions, specifically, as follows: rhythmic coordination of behavior (DeRoten, 2000, Bernieri 1988; Bernieri et al 1991; Cappella, 1981, 1983, 1987, 1994, 1996, 1997; LaFrance 1979, LaFrance et al, 1976), shared affect that is mostly positive (Gottman et al, 1977, 1989), en-face spacial orientation (Kendon, 1970, 1982) mirroring and symmetry of behaviors (Scheflen, 1963, 1973, LaFrance 1979, LaFrance et al, 1976 Trout and Rosenthal), and moving from miscoordination to coordination (Gottman et al, 1977, 1989) all promote an affectively regulated experience.

Discussion:

Affect regulation is the establishment of predictable, interactive patterns of affect states within a dyad. These affective states are manifested by nonverbal expressive behaviors such as vocal, visual and kinesic behaviors. The literature reviewed above provides converging evidence and support for: 1. affect regulation as a developmental process, 2. affect regulation as a subsymbolic-cognitive process, 3. the significant relationship between affect regulation and therapeutic alliance in the therapeutic dyadic relationship, and 4. the measure of nonverbal behavior interaction between adults as an index of rapport.

Implicit-procedural processing and explicit-declarative processing are two separate, parallel, but equally important cognitive systems. There may be changes in one system without changes in the other, and both are open for influence in the therapeutic relationship. Under optimal conditions, both systems work in a coordinated fashion, with access to both levels of functioning.

Infant research has much to say about interpersonal functioning in adults. The dyad strives towards shared affective moments, and shared moments are essential for the mutual regulation process. An ideal intimate relationship maintains a positive affective equilibrium through matching, collaborating with and scaffolding of verbal and non-verbal experience. Optimal levels of attunement are mid range, neither too closely coupled nor too unresponsive, and moments of affective intensity serve as organizing principles for the relationship. During moments of inevitable negativity, reparation of breeches in the relationship serve to facilitate sense of efficacy, agency and initiative on the part of the infant and patient. The patterns of relating are established within the dyad through repeated rhythmic, coordinated experience. Through the establishment of patterns, the infant and patient internalizes these interaction structures that shape perceptual anticipations and contingencies. Ideally these cover a wide range of behaviors, but in pathological cases, the expectancies fall within a narrow range, leading to dysregulated style of relating.

From the perspective of this thesis, it is interesting to look at the bond/rapport aspect of therapeutic alliance as the ongoing affect regulation in the therapeutic dyad. As with the mother-infant dyad, this regulation may be studied and used to predict long term

outcome of the therapy. It is also a useful way of framing the methodology and design of this study. If therapeutic alliance is a consistently good predictor of outcome, then one would expect that positive affect regulation would predict alliance measures, and that understanding the moment-by-moment process of affect regulation within the dyad will give useful information about how to create and maintain a good alliance. It will also allow us to understand the process of stress in the alliance, and how both partners are contributing. The methods for studying this follow the line of research in mothe-infant study and nonverbal behavior. The review of literature on nonverbal communication in adults strongly supports the coordination-rapport hypothesis (Tickle-Degnen & Rosenthal, 1987). Nonverbal behaviors suggesting mutual attention, such as gaze and body orientation, positivity of affect and coordination of movement are related to self-reports and observer ratings of rapport within a dyad. These methods may be usefully applied to the study of affect regulation in psychotherapy.

How can we optimize the therapeutic conditions in order to highlight the importance of the implicit relationship and affect regulation within the dyad? Are there particular techniques, or approaches that facilitate the empathic emotional communication between therapist and patient?

> "Does the therapist envision the analytic task as matching and tracking the patient's attention and affect states (joining), stimulating and dampening the patient's affect and arousal (altering) or keeping a steady, relatively unvarying level of attention and affect (neutrality)? And how do patients respond to these different styles? What of the patient's implicit/unconscious- interactive goals (making sure the therapist does not intrude, needing the therapist as a benign background, obtaining love and approval, attempting to find the therapist's own need for the patient, etc.), and the therapist's response?" (Beebe & Lachmann 1998)

The ideal psychoanalytically oriented psychotherapy will establish the ideal conditions for eliciting familiar patterns for the patient by requiring consistency in time and place, a focus on the moment-by-moment interactions between patient and therapist, both within the patient and the relationship, will also allow for a degree of expressive freedom in order to facilitate the regulatory process. An approach that is process oriented in the here and now serves to highlight the implicit relationship as it unfolds.

This has many implications for traditional psychoanalytic interventions. One may take away from this discussion that the classical notion of transference is being relegated from a "star" to a "supporting" role (Fonagy, 1998). In part, this may be true in that this theory suggests a reconceptualization of the idea of transference in that symbolic levels of transference are contextually embedded in an implicit/affective process (Stern, 1999). It is likely that at some point, the implicit/procedural context/process for the symbolic representations of significant objects becomes so intertwined, that experientially, theoretically and technically, they cannot be separated. Though again, we must do this for clarity of discussion.

This discussion also suggests an alteration to the classical notion of interpretation. There are varying views on how important interpretations are in facilitating change. The extreme view is that they are not necessary at all (Stern, 1999). The more moderate view suggests that they are important towards integrating the subsymbolic and the symbolic, but must be timed in a moments that are affectively important. As Stern points out, any good analyst knows this on some level, but our point here is that focusing on the

nonverbal interchange gives us information about how to do that. In the context of this discussion, timing takes on an important relational meaning

Outcome measures of psychotherapy support efficacy in many different forms of psychotherapy (Roth & Fonagy, 1996). Thus, the implicit relationship may in some sense come under the rubric of "non-specific therapeutic factors" (Fonagy, 1998). In this sense, this paper is an effort to make those nonspecific factor explicit and less mysterious. The focus on the 'now moment' as necessary to create a 'moment of meeting' requires that an authentic and spontaneous exchange occur between patient in therapist. Interestingly, Fonagy suggests that the therapist is *unable* to intentionally influence the non-specific factors because theory and technique are a part of our explicit/declarative level of knowledge.

> "The "moment of meeting" has the potential to alter implicit relational knowing. This does not happen suddenly, as may be the case for intellectual insight....., but rather gradually shifting something that may be imperceptible to either patient or analyst except, perhaps, for a sense of increased well-being when in each others company." (Fonagy, 1998, p.350)

However, the responsive therapist, like the responsive mother, is likely to have some degree of self-awareness of his or her own behaviors and how they relate to feeling states. This again relates to Fonagy's construct of reflective functioning. It is an aspect that can be developed with effort and focus. Likewise, others have suggested (Kiersky et al, 1994; Knoblauch, 1997) that because the implicit relationship occurs in the realm of therapeutic action, we may have an intentional influence upon it, however retrospect it may be. As therapists, we are able to heighten our level of awareness to the moment-by-

moment nonverbal/affective/perceptual experience, and if the ‘moment of meeting’ cannot be experienced in the present, it may be productively reviewed at a later time.

In conclusion, psychotherapy process research has established that “nonspecific factors” are the variables that have the largest impact in therapeutic change. Various schools of psychoanalysis conceptualize these relational factors in different ways. This relational psychoanalytic perspective is unique in that it attempts to formalize the nonspecific factors as subsymbolic process that allows us to raise the nonconscious, automatic process of relationship to awareness. From that perspective, we may begin the process of translating therapeutic action into therapeutic technique.

Chapter 2

Methodology

Introduction:

A well-regulated mother-infant dyad involves coordinated movement from mismatched to matched moments at the microanalytic level, with the goal of the dyad to maintain an overall positive affective experience. This involves the mother actively matching, following, and responding to the infant's nonverbal cues, and includes continuous movement from states of miscoordination to coordination. In the ideal interaction, the sensitive mother follows the infant's lead. Her behaviors act as a scaffold or support for the infant's emotional experience. The infant needs the mother to maintain a regulated state; interaction is essential.

In dysregulated dyads, the mother is not able to adequately perform the matching, coordination and scaffolding functions, and will "misread" the infant's communicative signals. Her responses include variations on behaviors that range from intrusive to non-

responsive in quality. Behaviorally, this may appear as chronically mismatched and miscoordinated behaviors, or coordinated behaviors that are mostly negative affect. The insensitive interaction involves lack of response, or the mother taking the lead in the interaction.

Behaviorally, these studies focus on the process of matched behaviors and affects, the contingency of one partner's behavior from the others, and the presence of established patterns, or synchronicity of behaviors, as a measure of behavioral and affective coordination.

Mother-infant research has excelled at measuring this process through development of elaborate microanalytic coding schemes and sophisticated use of sequential analyses (Brazaelton, Kowlowski and Main (1974), Cohn and Tronick, (1987, 1988), Tronick, Als and Brazaelzton (1977), Stern (1977).

Applying this microanalytic technique to adult psychotherapy has been done by psychotherapy and marital researchers: DeRoten et al (1996, 1998, 2000) have studied the attending frame and communicational alliance in couples therapy; Gottman (1979) and Gottman and Levenson (1992) have studied affect regulation in married couples; and Condon and Ogston (1967) have used a frame by frame analysis to study the relationship between speech behavior and body movement in the patient in an adult psychotherapy. (For further references see literature review above.)

The microanalytic study of nonverbal behavior in an adult psychotherapy is an optimal way to capture the process of affect regulation within a dyad. It allows for a

moment-by-moment analysis of the affective communication, engagement and rapport between patient and therapist that occurs on a nonconscious level.

In this study, affect regulation was considered as a part of the bond aspect of the therapeutic alliance. It is a measure of the quality of engagement between the patient and therapist over time, and serves as a process measure of the therapeutic alliance. Understanding the emergent emotional interaction allows for a detailed examination of the bond component of the alliance. This study allows one to consider how the patient and therapist emotionally contribute to the success or failure of the alliance by attempting to establish the relationship between the nonverbal interactions and self-report measures of alliance.

Plan of Study:

This study had two goals: the first was to establish a method of measuring affect regulation within the therapeutic dyad; the second was to evaluate the connection between degree of therapeutic alliance and patterns of interaction of nonverbal behaviors of gaze, torso lean and self-regulating behaviors and judged affect rating of therapist and patient.

The database consisted of 16 completed, twelve-session brief psychotherapies, yielding 192 completed sessions in all. From the 192 completed sessions, 168 Post Session Questionnaires were completed, thus reducing the overall sample to that size. All sessions were videotaped using two cameras, and combined into a split screen, frontal

view of both patient and therapist, from the torso to the top of the head. Each tape had a time meter dubbed onto it for use during the coding process.

The post-session questionnaires included the Working Alliance Inventory-12 (WAI-12, Tracey & Kokotovic, 1989) and three questions about any interpersonal difficulties or tensions within the session, and whether the tension was resolved. (see appendices 2 and 3). Intersubjective ratings of the alliance, as measured by agreement on the WAI-12 in post session questionnaires by the therapist and the patient, reflected the state of the alliance in the therapy, and can be strongly predictive of therapy outcome. Following this, these ratings were expected to reflect how affect is typically regulated in the therapeutic relationship. Specifically, a therapy with a high rating on therapeutic alliance was expected to emerge from a well-regulated dyad. Alternately, a therapy with a rating of poor therapeutic alliance by one or both participants was expected to emerge from a mainly dysregulated dyad. This study design was established in the couples therapy studies looking at communicational alliance and attending frame (see above - DeRoten et al, 2000, Fivaz-Depeusinge et al, 1994)

Two distinct subsets of sessions were chosen according to criteria described below: the first was identified as the High Alliance Group, the second was identified as the Low Alliance Group. The sample consisted of 10 sessions in each group, yielding a sample size of 20 sessions in total.

One five-minute segment from each session will be coded using a nonverbal behavior and affect rating scales described below, yielding 10 high alliance segments and 10 low alliance segments. The nonverbal behaviors of gaze, torso lean and self-regulating

behaviors were coded on a second-by-second basis for both patient and therapist, yielding 300 data points per nonverbal behavior per segment. This allowed for sufficient data to study the interaction of behaviors across time. The global affect rating scale was by coded on a minute-by-minute basis to yield a global rating scale for each segment.

Statistical measures used fell generally under the rubric of Hierarchical Loglinear Analyses (HILOG) (Bakeman & Gottman 1997, Bakeman & Robinson 1994, Gottman & Roy 1990, Bakeman & Quera 1995). Hilog analyses were used to make predictions about the probability of the sequences of behavior. This method of sequential analysis is used with categorical data, and compares predicted or expected frequencies of behaviors suggested by the model of interaction hypothesized, with the actual observed frequencies. Thus the hypotheses themselves become the statistical models to be tested.

Hypotheses:

Defining Affect Regulation

Affect regulation is defined as either reciprocal or complementary nonverbal interactions that help to either sustain or resume a positive affect state or allow for the safe, modulated expression of negative affect states such as sadness, fear or anger. Schore also refers to the re-regulating process from distress to equilibrium as the "stress state recovery system" that is made up of "nonverbal distress relief sequences" (Schore, 1994).

Affect dysregulation is defined as either reciprocal, complementary interactions or asynchronous, nonpatterned interactions that either promote prolonged distress or do

not help to resolve distress states. In the later case, dysregulated states may show non-responsive behaviors by one pair or the other, so that no patterned contingency of behaviors is observed. Alternately, dysregulated affect states can involve highly patterned interactions between both participants that serve to promote a negative affect state such as anger.

Reciprocal influence means that A's behaviors and B's behaviors are equally predictable from each other's past behaviors. Whereas unidirectional influence, or dominance implies an asymmetry in predictability; that is, if B's behavior is more predictable from A's past than conversely, A is said to be dominant (Gottman & Ringland 1981).

In this study, affect regulation was operationalized in the following ways:

- Symmetrical or bidirectional behavior was discussed in terms of either *reciprocity* or *complementarity* of behaviors, so that both behaviors between patient and therapist were corresponding either simultaneously, or nearly simultaneously. Therapist behavior was noted as lagged behavior throughout, that is, as following the patient's behavior, though in fact, the impact was nearly simultaneous. An example of reciprocity is patient gaze met by therapist gaze, or, patient avoidance of gaze followed by therapist avoidance of gaze. An example of complementarity behavior was therapist lean forward met with patient not leaning forward, or, patient gazing towards, and therapist gazing away.
- Asymmetrical behavior was referred to here as unidirectional behavior. This means that only one partner is engaging in the particular nonverbal behavior while the other

partner is nonresponsive. Unidirectional behavior are important but they do not represent an interactive contingency of behaviors within the dyad. An example of unidirectional behavior would be a significant expression of self-regulatory behaviors by one partner with a random expression of SR behaviors by the other.

- Engagement behaviors are characterized by affectively contacting the partner. For example, gaze towards or lean towards are considered engagement behaviors (Cappella, 1997). Disengagement behaviors are characterized by active reduction of emotional contact, such as gazing away or leaning away.
- Within various affective contexts, such as positive, sad, fearful or angry, one may observe both unidirectional and bidirectional behaviors. For example, bidirectional gaze in the context of sadness would be considered to have a regulating quality, while bidirectional gaze in the context of anger would be considered a hostile engagement of aggressive behavior, and would thus be affectively dysregulating.

Guiding hypotheses looking at interaction between alliance level, nonverbal behavior and affect rating were as follows:

Low alliance segments will be characterized by dysregulated interactions as follows:

- Overall, there will be significantly more unidirectional behaviors, e.g. fewer observances of significant interactive behaviors across affect states, indicating a non-responsiveness within the dyad. This prevents the possibility of interactive repair or mutual regulation of feeling states, and promotes a retreat into self-regulatory states.

- During the expression of positive, sad or fearful affects by the patient, patient and therapist will be engaged in significantly fewer reciprocated bidirectional engagement behaviors of gaze and torso lean that would serve to mediate negative affect states. In other words, when patient is expressing these feelings, the dyad will not participate in interactive engagement behaviors that would serve to facilitate the expression of these more vulnerable feelings. Additionally, patient and therapist will engage in more bidirectional self-regulating behaviors that would represent a retreat into a self-regulatory mode in the face of these difficult affect states.
- During the expression of anger, patient and therapist will be engaged in more bidirectional engagement behaviors of gaze and torso lean that serve to prolong distress.

High alliance segments will be characterized by regulated interactions as follows:

- Overall, more bidirectional, interactive behavior will be observed, whether it be reciprocal or complementary, across affect states. This indicates a higher level of responsiveness between dyadic partners.
- During the expression of positive, sad or fearful affect, patient and therapist will be engaged in significantly more bidirectional engagment behaviors that are characterized by reciprocity or gaze and torso lean. This would allow for a sense of responsiveness and receptivity by the therapist during expression of difficult affect states. Patient and therapist will engage in fewer bidirectional self-regulating behaviors, indicating more mutual regulatory functioning.

- During the expression of patient anger, patient and therapist will be engaged in fewer bidirectional, engagement behaviors of gaze and torso lean, allowing for a modulation of intensity of anger. Additionally, patient and therapist will engage in more bidirectional self-regulating behaviors, which will serve a compensatory function during the expression of negativity (Beebe & Lachmann, 1998).

Participants:

Subjects for this study were patients seeking brief psychotherapy for relationship problems at a university-counseling clinic. They were recruited through advertisement and third party referral. Inclusion criteria was as follows: patients were 18 years or older, not active substance abusers, not experiencing psychosis or at risk for psychiatric hospitalization. Applicants experiencing suicidal ideation, psychotic thought process or any substance abuse problems were referred for services outside the clinic. No patient currently seen by an individual study therapist was included in the study. Patients who wished to continue in treatment following the 12-session protocol were referred to the university clinic for further services.

At intake, patients were informed that the focus of therapy was to help them learn about themselves and their patterns relating to others. All patients were notified about the procedures of the study, understood that they would be videotaped and required to complete questionnaires following every session, as well as at periodic assessment points. They also understood that there would be a six-month follow-up after each treatment was completed. Patients were informed that they could withdraw from the study at any time. The patient's informed consent was read and signed after the intake interview.

Following intake, 16 patients were randomly assigned to one of eight therapists, each therapist seeing two patients. Therapists were doctoral candidates in clinical psychology in their 3rd or 4th year of training. Training for the protocol took place during a seminar chosen by the students. During the treatment phase, therapists were supervised weekly in a group supervision. Adherence to the model was closely evaluated throughout the treatment.

Patients in this sample were all white, and all women except for one man. Therapists were all white, and all women except for one male therapist.

Data was collected before the first interview, following each session, at the mid-point of the treatment (following session 6), and after the final session.

Treatment:

Therapists were trained in a seminar taken for their clinical psychology coursework. Two therapy modalities were used within each therapy, with six consecutive sessions in one style followed by six consecutive sessions in the other; the metacommunication condition focused on relational, process-oriented interventions and the psychoanalytic interpretive condition used more traditional approach.

Measures:

The Working Alliance Inventory (WAI) is based on Bordin's (1979) transtheoretical model of the therapeutic alliance. Each item is rated on a 7 point Likert scale, and loads onto one of three factors/subscales: Task, Bond, and Goal. Horvarth and Greenberg (1986) reported very high reliability coefficients (.85-.93), with strong support

for the validity of the measure (Safran and Wallner, 1991). Tracy and Kokotovic (1989) have reduced the scale to a 12-item General Alliance Factor using a confirmatory factor analysis. The WAI-12 is used in the post-session questionnaire administered to both patient and therapist following each session. (see appendix 1)

In order to assess the presence or absence of a rupture and repair in the therapeutic alliance, both patient and therapist also completed questions regarding their subjective experience of whether they did or did not experience any tensions or disagreements with their partner during the session, a rating of the intensity of the disagreement on a 1-7 Likert scale, and the extent to which the disagreement was resolved. (see appendix 2)

Session Selection:

Sessions were selected using an ipsative approach. The WAI-12 scores for each dyad were averaged, and each average session score for the dyad was compared to the overall average dyad score. The differences between these two values (Dyad Mean for 12 sessions and Individual Session Mean) were converted into Z scores and then ranked across the 168 sessions, resulting in a ranking for patient score and therapist score. Scores within .5 Z score (.5 standard deviations) were considered an agreement between patient and therapist, and scores greater than .5 SD difference were considered a disagreement between patient and therapist. Sessions were chosen only where agreement was found between patient and therapist on the WAI algorithm that was established. With the goal

of selecting the most extreme sessions in both high and low direction, the cutoff criteria for the Z scores were chosen at one standard deviation below or above the mean Z score.

Low Alliance sessions were defined by Z scores greater than one standard deviation below the mean and the report by patient and or therapist of a rupture in the alliance during the session. High Alliance sessions were defined by Z scores greater than one standard deviation above the mean. In high alliance sessions, for all sessions that met this criteria, neither patient nor therapist reported a rupture.

One five-minute time period from the 35th to 40th minute was selected from each session for analysis. This time period was chosen for two reasons: first, it allows for a uniform process of selecting the segments across the sessions, a convention already established in the study of nonverbal behavior; secondly, using the last segment of the session is likely to capture each participants experience at the endpoint of the meeting and was thought to most likely be reflected in their self reports, what has been considered in learning theory as the recency effect. Note that minutes 35 to 40 were chosen rather than minutes 40-45 because frequently the very last moments of sessions will include discussion of logistical issues.

Table 1. Sample Characteristics				
Session #	**Therapist #**	**Patient Gender**	**Therapist Gender**	**Alliance**
903	1	Female	Female	Low
904	1	Female	Female	Low
905	1	Female	Female	Low
910	1	Female	Female	High
911	1	Female	Female	High
912	1	Female	Female	High
1202	2	Female	Female	Low
1206	2	Female	Female	Low
304	3	Female	Female	Low
306	3	Female	Female	Low
312	3	Female	Female	High
1603	6	Female	Male	High
1604	6	Female	Male	High
1609	6	Female	Male	Low
403	7	Female	Female	Low
408	7	Female	Female	High
409	7	Female	Female	High
410	7	Female	Female	High
704	7	Male	Female	High
707	7	Male	Female	Low

Behavioral Coding Measures:

Nonverbal Variables:

Gaze behaviors: Gaze serves to coordinate conversational roles (Duncan and Fiske 1977). Gaze behaviors are performed differently in the speaker than in the listener. Engaged listening behavior involves nearly 100% gaze towards the speaker, while the engaged speaker may look towards or away from the listener. Duncan and Fiske (1977) found interrater reliability for gaze coded every half second at .79 (Cohen's Kappa). Cappella and Palmer (1990) found interjudge

agreement for gaze at 30 second periods at 98%. For this study, gaze behavior is a dichotomous variable that is measured as gazing towards the other or away from the other (not necessary to observe eye-contact)

Torso Lean: Cappella and Palmer (1990) Found 100% interrater reliability with this measure. DeRoten (1999) looked at body orientation based on Kendon's F-formation (Kendon 1977, 1990). Their body formation coding system measures level of triad engagement within a couples therapy, based on facing towards or way from the other. Interrater reliability of this system was .65 for Dyadic Engagement with Third Party Included, .76 for Triadic Disengagement, .78 for Triadic Equi Engagement and .82 for Intense Triadic Engagement. The torso orientation code for this study was a dichotomous variable divided into lean towards or lean back.

Self-Regulatory Behaviors: Hill and Stephany (1990) found 89% agreement (k = .68) for adapter behaviors that include biting or licking lips, playing with hair, rubbing hands, picking with fingers, scratching, holding oneself, tapping hand movement, rubbing or massaging. For this study, coders looked for any self-touching behaviors or any holding behaviors that caused any body tension.

Nonverbal Behavior Coding Group

Three pairs of coders (six in all) were chosen to code nonverbal behaviors of gaze, torso lean and self-regulatory behaviors. All coders were graduate students in psychology. Reliability Training was undertaken until .6 Cohen's kappa was reached for

3 consecutive segments on each variable. Note that because the variables being coded were dichotomous, a kappa of .6 often indicated a percentage of .83 or more. Additionally, this was considered an acceptable level of training because 300 data points per segment would be coded. On average, it took each group 1.5 to 2 hours to complete each segment.

Affect Coding Measure

The Affect Coding Scale (see appendix) was applied to the five-minute segments taken from completed psychotherapy sessions. Coders focused both on visual, nonverbal engagement as well as what was being said between patient and therapist. The purpose of this scale is to identify the essential emotion(s) that are being expressed by both the patient and the therapist in a particular segment of psychotherapy. This scale is an adaptation of the Client's Emotional Arousal Scale (Machado, Beutler and Greenberg, 1999). While this rating is judgment based, there are general guidelines that may be followed for each affect category.

The emotion categories to be identified are fear, anger, sadness and positive emotion using the following categories:

Presence or Absence of the Emotion: This is marked as Yes=1, No=2, Don't Know=9

Modal Intensity of the Emotion: This is a measure of the modal level of expression for a particular affect. In other words, during the time that an affect is expressed within the five minute segment, on a scale of 1-5, (one being the least amount, and 5

being the most intense amount), what was the average intensity of affect that was expressed? For example, how angry is the patient, on a scale of 1-5, during the time she is expressing anger? In other words, what is the modal amount of anger expressed during the time this particular emotion was expressed?

Duration: During each one-minute segment, is this affect being expressed more than 50% of the time.

Two advanced graduate students in Clinical Psychology were chosen as raters to make global affect ratings for therapy segments. Five one-minute segments were coded with affect ratings of positive, sad, angry and fearful, with an overall affect judgment for the segment. These ratings were applied to patient and therapist by judging video segments for verbal and nonverbal content (see coding sheet and manual). Raters were trained up to a .8 level of agreements on reliability segments. They then each rated 20 segments independently. On segments where they disagreed, they met to review segments and gain consensus.

Chapter 3

Results

Data Analysis Strategy

This analysis examined multivariate associations using hierarchical loglinear analysis as a model selection device. First, a saturated, 3-way model was examined for each of the following behaviors: Alliance type (high versus low), lean (leaning versus not leaning), gaze (gazing versus not gazing) and self-regulating behavior (emitting self-regulating behavior versus not emitting self regulating behavior). In a subsequent analysis, a 4-way model was examined that included Affect level (positive, sad, angry, fearful), Alliance type, lean, gaze and self-regulating behaviors. This approach to model selection allows one to select significant 4 way, 3 way and 2 way relationships. Chi-squares for marginal effects, 2-way effects, 3-way effects and 4-way effects were assessed. In the 3-way interaction, hierarchical loglinear analysis performed was followed by 2-way interaction within the 3-way table. Similarly, in the 4-way interaction,

a hierarchical loglinear analysis was followed by examining 3-way interactions in a 4-way table.

Where 3-way and 2-way interactions were found to be significant, these relationships were further explored by constructing contingency tables, examining chi-square statistics for significance, and the Phi statistic for strength of effect. Cohen's verbal designations on strength of effect (Cohen, 1977) was followed such that .0-.299 is a weak effect, .3 - .499 is a moderate effect, and .5 - .999 is a strong effect. Adjusted standardized residuals were also be used as measures of significance. Adjusted standardized residuals are measures of the degree to which observed values exceed expected frequencies. These values are distributed as normal deviates (z-scores) with a mean of zero and standard deviation of one. Therefore values exceeding 2.0 (1.96) can be considered to be statistically "significant". When positive value means are observed in this cell, cases are considered significant over those behaviors generally represented. Negative values in this cell (<-2.0) are considered to be behaviors that are significantly underrepresented.

Affect Ratings

As noted in the methods section, each segment was judged for overall affect level of positive, sad, angry and fearful affects for patient and therapist independently. This analysis examined the relationship between overall affect level for patient, alliance condition and nonverbal patient and therapist behavior interactions. As noted in the table below, alliance level significantly discriminated between affect ratings for both patient and therapist, as follows:

An equal amount of positive therapist affect was found in both low and high alliance segments.

Low alliance segments were judged with significantly more patient anger (70%) than high alliance segments (10%), while therapist anger ratings were low (10% - low alliance segments) to none (0% - high alliance segments). Patients expressed significantly more positive, fearful and sad affect in high alliance segments, while therapists expressed more sad affect in high alliance segments.

Figure 1. Low Alliance Affect Distribution

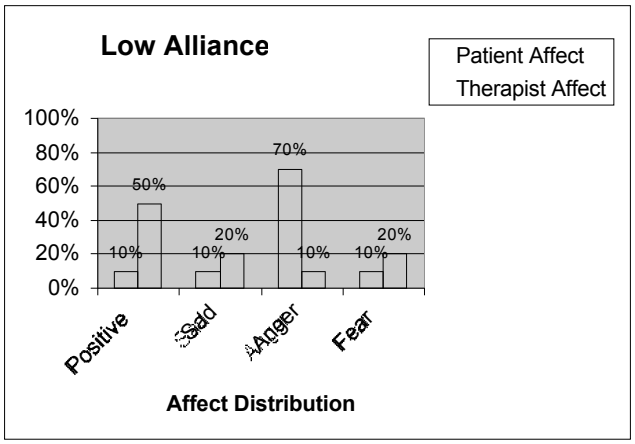
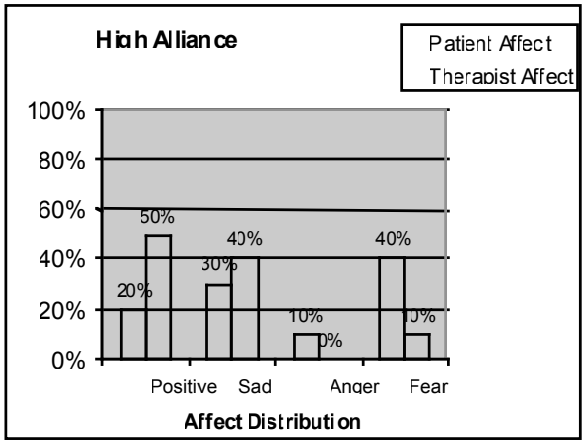


Figure 2. High Alliance Affect Distribution



Consistent with the proposed hypotheses, the following analysis reported on affect by alliance by nonverbal interactions in three way interactions. Nonverbal behaviors by affect interactions were examined in 2 way interactions, when those interactions are particularly strong (moderate to strong magnitude of effect) in order to identify the relative significant of the interaction.

Hypothesis 1:

Low alliance segments will be characterized by dysregulated interactions as follows:

- Overall, there will be significantly more unidirectional behaviors, e.g. fewer observances of significant interactive behaviors across affect states, indicating non-responsiveness within the dyad. This prevents the possibility of interactive repair or mutual regulation of feeling states, and promotes a retreat into self-regulatory states.

High alliance segments will be characterized by regulated interactions as follows:

- Overall, more bidirectional, interactive behavior will be observed, whether it be reciprocal or complementary, across affect states, indicating a higher level of responsiveness between dyadic partners.

In order to test the above hypothesis, a hierarchical loglinear analysis was performed to create 4-way contingency tables using SPSS Hierarchical Loglinear Module, (HILOG) Version 10.0. This procedure allowed us to screen overall 3-way and 2-way associations between variables. Each nonverbal behavior was analyzed separately, beginning with gaze behaviors.

Gaze Behaviors

Table 2. Alliance x Lagged Therapist Gaze x Pt Gaze	
Alliance x Lagged Therapist Gaze x Patient Gaze	**Likelihood Ratio Chi-Square**
3-way interaction	X^2*=(1) 24.98;* p<.001
2-way interaction	X^2*= (3) 274.17;* p<.001
Marginal effects	X^2*= (3) 5,395.37;* p<.001
Tests of Partial Associations	
Alliance x Lagged Therapist Gaze	X^2 *= (1) 142.36;* p<.001
Alliance x Patient Gaze	X^2 *= (1) 24.86;* p<.001
Lagged Therapist Gaze x Patient Gaze	X^2 *= (1) 133.71;* p<.001
Alliance	X^2 *=0.00;* p<.9913
Lagged Therapist Gaze	X^2 *= (1) 5,349.90;* p<.001
Patient Gaze	X^2 *= (1) 45.47;* p<.001

Table No. 3: Lagged Therapist Gaze x Patient Gaze x Alliance			
	Likelihood Ratio Chi-Square	**Adjusted Residual**	**Phi**
3-way Interaction			
Low Alliance Condition	X^2 *(1) = 156.17;* p < .001	z_{11}*= -11.9;* p < .001, z_{12} *= 11.9;* p < .001	*-.218*
High Alliance Condition	X^2 *(1) =2.53;* p < .112	z_{11}*= -1.6;* p < .001, z_{12} *= 1.6;* p < .001	*-.029*
Patient Gaze x Alliance	X^2 *(1) =10.50;* p < .001	z_{11}*= 3.2;* p < .001, z_{12} *= -3.2;* p < .001	*.042*
Lagged Therapist Gaze x Patient Gaze	X^2 *(1) = 120.33;* p < .001	z_{11}= -10.6; *p < .001,* z_{12} = 10.6; *p < .001*	*-.137*
Lagged Therapist Gaze x Alliance	X^2 *(1) = 128.98;* p < .001	z_{11}*= 11.1;* p < .001, z_{12} *= -11.1;* p < .001	*.143*

The initial screen using hierarchical linear analysis suggested that there was a significant 3 way interaction ($X^2(1) = 24.98$; $p < .001$) and 2 way interaction ($X^2(3) = 274.17$; $p < .001$) between alliance, lagged therapist gaze and patient gaze variables. We expected to find significant association between patient and therapist gaze behaviors in both low and high alliance segments, such that low alliance segments would produce a reciprocity of nongazing behaviors between patient and therapist, and high alliance segments would show an association with reciprocated gaze behaviors between patient

and therapist. Partial associations in the table above suggest the following significant 2-way interactions: alliance by lagged therapist gaze ($X^2(1)=142.36$; $p<.001$), alliance by patient gaze (X^2 (1) 24.86; $p<.001$), lagged therapist gaze by patient gaze ($X^2(1)=133.71$; $p<.001$). Additionally, both patient gaze (X^2 *= (1) 45.47;* $p<.001$) and lagged therapist gaze (X^2 *= (1) 5,349.90;* $p<.001$) make significant individual contributions.

Patient Gaze x Lagged Therapist Gaze x Alliance

The three way interaction between therapist lagged gaze, patient gaze and alliance is significantly associated in the low alliance condition (X^2 (1) = 156.17; $p < .001$: z_{11}=-11.9; $p < .001$, $z_{12} = 11.9$; $p < .001$). As suggested above by the cross tabulations, in low alliance segments, therapists are less likely to gaze when the patient is already gazing. Likewise, therapists are more likely to gaze when the patient is not gazing responsively. The magnitude of effect is in weak range (Phi=-.218). In contrast, no significant interactions between therapist lag gaze, patient gaze and alliance were found high alliance segments ($X^2(1) = 2.53$; $p <.112$; z_{11}= -1.6; $p < .001$, z_{12} = -1.6; $p < .001$)

Patient Gaze x Alliance

The association between patient gaze and alliance is significant ($X^2(1) = 10.50$; $p < .001$; z_{11}= 3.2; $p < .001$: z_{12} = -3.2; $p < .001$). Specifically, in high alliance segments, patients are more likely to gaze towards therapist than in low alliance segments. However, the strength of this effect is weak (Phi = .042).

Lagged Therapist Gaze x Alliance

Lagged therapist gaze and alliance interactions are significantly associated (X^2 (1) = 128.98; $p < .001$: $z_{11} = 11.1$; $p < .001$, $z_{12} = -11.1$; $p < .001$) suggesting that therapists are more likely not to gaze towards patients in low alliance segments and are more likely to gaze towards patients in high alliance segments. The strength of this relationship is weak (Phi=.143).

Lagged Therapist Gaze x Patient Gaze

Lagged therapist gaze and patient gaze interaction is significantly associated (X^2 (1) = 120.33; $p < .001$: $z_{11} = -10.6$; $p < .001$, $z_{12} = -10.6$; $p < .001$) suggesting that in the overall sample, across high and low alliance segments, that patients are more likely to gaze towards the therapist when the therapist is not responding in gaze towards them. Additionally, patients are also less likely to gaze towards their therapist when the therapist is gazing towards them. Again, the strength of this effect is weak (Phi=-.137).

Summary

In summary, significant effects for 3-way interaction between therapist gaze, patient gaze and alliance variables are observed for the low alliance condition only. Patients in the low alliance condition are significantly less likely to gaze at their therapist while their therapist is gazing at them. Following this, they are more likely to look at their therapists when their therapist is not looking at them. This magnitude of effect is in the weak range (Phi=-.218). No such significant effect was found in the high alliance segments in gaze behavior.

However, significant differences were found in 2-way interactions between therapist and patient gaze behaviors across and between alliance conditions. Therapists

were more likely to gaze towards their patients in high alliance segments than in low alliance segments. Similarly, patients were also more likely to gaze at their therapists in high alliance segments than in low alliance segment, but the effect sizes are weak (Phi =.142; .042 respectively). Two-way interactions between patient gaze and therapist gaze, irrespective of alliance condition, show a significant and complementary relationship such that patients are less likely to look at their therapist when their therapist is looking at them, and are more likely to look at their therapist when their therapist is looking away (Phi=-.118). The converse is also true, that therapists are less likely to look at their patients when their patients are looking at them, and more likely to look at their patients when their patient is looking away (Phi=-.137).

Therefore, the hypothesis that gaze behaviors would be reciprocated in high alliance conditions and non-gaze behaviors would be reciprocated in low alliance conditions was not supported. Rather, a significant association was found only in the low alliance condition suggesting a complementary relationship between patient and therapist gaze in low alliance segments.

Lean Behaviors

Table 4. Alliance x Lagged Therapist Lean x Patient Lean	
Hierarchical Loglinear Model 3-way Interactions:	
Alliance x Lagged Therapist Lean x Patient Lean	**Likelihood Ratio Chi-Square**
3-way interaction	X^2*=(1) 116.21;* p<.001
2-way interaction	X^2*= (3) 687.70;* p<.001
Marginal effects	X^2*= (3) 266.24;* p<.001
Tests of Partial Associations	
Alliance x Lagged Therapist Lean	X^2 *= (1) 228.44;* p<.001
Alliance x Patient Lean	X^2 *=(1) 9.83;* p<.002
Lagged Therapist Lean x Patient Lean	X^2 *=(1) 365.14;* p<.001
Alliance	X^2 *=(1) 0.00:* p=1.0
Lagged Therapist Lean	X^2 *=(1) 247.35;* p<.001
Patient Lean	X^2 *=(1) 18.89;* p<.001

Table 5: Cross Tabulations of 3 way and 2 way Associations			
	Likelihood Ratio Chi-Square	**Adjusted Residual**	**Phi**
3-way Interaction: Lagged Therapist Lean x Patient Lean x Alliance			
Low Alliance Condition	X^2 *(1) = 453.93;* p < .001	z_{11}*= 21;* p < .001, z_{12} *= -21;* p < .001	.384
High Alliance Condition	X^2 *(1) =27.42;* p < .001	z_{11}*= 5.2;* p < .001, z_{12} *= -5.2;* p < .001	.096
2-way Interactions			
Patient Lean x Alliance	X^2 *(1) =52.13* p < .001	z_{11}*= 7.2;* p < .001, z_{12} *= -7.2;* p < .001	.093
Lagged Therapist Lean x Patient Lean	X^2 *(1) = 407.71;* p < .001	z_{11}= 20; *p < .001,* z_{12} = -20*; p < .001*	.259
Lagged Therapist Lean x Alliance	X^2 *(1) = 270.54;* p < .001	z_{11}*= 16.4;* p < .001, z_{12} *= -16.4;* p < .001	.212

A hierarchical loglinear analysis was performed to evaluate the 3-way association between lagged therapist lean by patient lean by alliance condition. As with the lagged patient lean by therapist lean hypothesis tested above, we expect to find the therapist following the patients lean behavior in the high alliance segments and the therapist to

follow patient lack of lean behaviors in the low alliance condition. Partial associations suggest that lagged therapist lean by alliance interactions (X^2 = *(1) 228.44;* p<.001), lagged therapist lean by patient lean (X^2 = (1) *365.14;* p<.001) and lagged therapist lean behaviors alone (X^2 = (*1) 247.35;* p<.001) make the more significant contributions to the three way interaction.

Lagged Therapist Lean x Therapist Lean x Alliance

Therapist lag lean and patient lean in the low alliance condition are significantly related (X^2 (1) = 453.93; p < .001: z_{11}= 21; p < .001, z_{12} = -21; p < .001) indicating that in low alliance segments, the therapist is less likely to lean when the patient is not already leaning. Likewise, the therapist is more likely to lean when the patient is already leaning. This magnitude of effect is in the moderate range (Phi=.384).In contrast, though the relationships between therapist lean following patient lean in the high alliance segments are significantly related (X^2 (1) = 27.42; p < .001: z_{11}= 5.2: p < .001, z_{12} = -5.2: p < .001) the magnitude of effect is weak (Phi=.096). This suggests that the association between therapist lean following patient lean behaviors is present though does not occur with the same magnitude of strength as the in the low alliance condition.

Patient Lean x Alliance

The two-way relationship between patient lean and alliance is significant (X^2 (1) = 52.13; $p < .001$: z_{11}= 7.2; $p < .001$, z_{12} = -7.2; $p < .001$). Specifically, in high alliance segments, patients are more likely to lean towards therapist than in low alliance segments. However, the strength of this effect is weak (Phi = .093)

Lagged Therapist Lean x Alliance

Lagged therapist lean and alliance are significantly related (X^2 (1) = 270.54; $p < .001$:z_{11}= 16.4: $p < .001$, z_{12} = -16.4: $p < .001$) suggesting that therapists are more likely not to lean towards the patient in a low alliance segment and are more likely to lean towards the patient in a high alliance segment. The strength of these relationships is weak (Phi=.212).

Lagged Therapist Lean x Patient Lean

Lagged therapist lean and patient lean interaction are significantly related (X^2 (1) = 407.71; $p < .001$: z_{11}= 20; $p < .001$, z_{12} = -20: $p < .001$) suggesting that in the overall sample, across both high and low alliance segments, patients are likely to lean towards the therapist when the therapist is leaning towards them. Patients are also less likely to lean toward their therapist when the therapist is not leaning towards them. The magnitude of strength of this relationship is weak (Phi=.212).

Summary

In summary, a significant 3-way association was found for Therapist Lean and Patient Lean behaviors across Alliance conditions in both low alliance with a moderate effect size (Phi=.384) Specifically, in the low alliance condition, the patient is much less likely to lean if the therapist is not leaning. In addition, although the overall rate of leaning for both patient and therapist is lower in the low alliance condition than in the high alliance condition, when the patient does lean, the therapist is also more likely to lean. The high alliance segments follow a similar pattern of leaning behaviors, but the overall frequency of leaning is much higher and the effect size is weak (Phi=.096) Overall, it appears that lean behaviors are symmetrical in their patterns of behavior. While one partner is engaging, the other is likely to, and conversely, when one is not leaning, the other is not likely to. The magnitude of this effect was more apparent in the low alliance segments, though still observed in high alliance segments, but with a weaker effect. Therefore, the above hypothesis that differential associations between patient and therapist lean behaviors between high and low alliance conditions was supported for the low alliance condition. This pattern was also observed in the high alliance segments, but with weaker magnitude of effect.

Self-Regulating Behaviors:

Table 6: Hierarchical Loglinear Model 3-way Interaction:	
Alliance x Lagged Therapist Self-Regulation x Patient Self-Regulation	**Likelihood Ratio Chi-Square**
3-way interaction	*X^2 (1) = 35.42; p<.001*
2-way interaction	*X^2(3) = 468.74; p<.001*
Marginal effects	*X^2(3) = 221.36; p<.001*
Tests of Partial Associations	
Alliance x Lagged Therapist SR	*X^2 (1) = 7.10; p<.001*
Alliance x Patient SR	*X^2 (1) = 436.71; p<.001*
Lagged Therapist SR x Patient SR	*X^2 (1) = 36.80; p<.001*
Alliance	*X^2 =0.00; p<.1.0*
Lagged Therapist SR	*X^2 (1) = 214.13; p<.001*
Patient SR	*X^2 (1) = 7.24; p<.0071*

Table 7.	**Likelihood Ratio Chi-Square**	**Adjusted Residual**	**Phi**
3-way Interaction: Lagged Therapist SR x Patient SR x Alliance			
Low Alliance Condition	*X^2 (1) = .003; p < .959*	*z_{11}= .1; p < .001, z_{12} = -.1; p < .001*	*.001*
High Alliance Condition	*X^2 (1) =72.22; p < .001*	*z_{11}= -8.5; p < .001, z_{12} = 8.5; p < .001*	*-.156*
2-way Interactions			
Patient SR x Alliance	*X^2 (1) =434.76; p < .001*	*z_{11}= 20.7; p < .001, z_{12} = -20.7; p < .001*	*.268*
Lagged Therapist Sr x Patient SR	*X^2 (1) = 30.87; p < .001*	z_{11}= -5.6; p < .001, z_{12} = 5.6; p < .001	*-.072*
Lagged Therapist Sr x Alliance	*X^2 (1) = 1.22; p < .269*	*z_{11}= 1.1; p < .001, z_{12} = -1.1; p < .001*	*.269*

The initial screen using hierarchical linear analysis suggests that there is a significant 3 way interaction (X^2 (1) =35.42; p < .001) between alliance, therapist lagged self-regulation and patient self-regulation variables and significant 2-way interactions (X^2(3) = 468.74; p < .001) between alliance and lagged therapist SR (X^2(1) = 7.10; p < .001), alliance and patient SR (X^2(1) = 436.71; p < .001) and lagged therapist SR and

patient SR behaviors ($X^2(1) = 36.80$; $p < .001$). Partial associations also show significant one way effects with lagged therapist SR behaviors ($X^2(1) = 214.13$; $p < .001$).

Lagged Therapist Self-Regulation x Patient Self-Regulation x Alliance

The three way interaction between therapist self-regulation lag, patient self-regulation and alliance is significantly associated in the high alliance condition ($X^2(1) = 72.22$; $p < .001$: z_{11}=-8.5; $p < .001$, $z_{12} = 8.5$; $p < .001$). This shows that in high alliance segments, therapists are less likely to emit self-regulating behaviors when the patient is already doing. Likewise, therapists are more likely to express these behaviors when the patient is not doing so. The magnitude of effect is in the weak range (Phi=-.156). In contrast, no significant 3-way interaction between lagged therapist SR, patient SR and alliance variables in the low alliance segments ($X^2(1) = .003$; $p < .959$; z_{11}= .1 ; $p < .001$, z_{12} = -.1; $p < .001$)

Patient Self-Regulation x Alliance

Chi-square analysis shows a significant 2-way relationship between patient SR and alliance conditions ($X^2(1) = 434.76$; $p < .001$; z_{11}= 20.7; $p < .001$: z_{12} = -20.7; $p < .001$). Specifically, in high alliance segments, patients are more likely to emit self-regulating behaviors than in low alliance segments. The strength of this effect is weak (Phi =.268).

Lagged Therapist Self-Regulation x Alliance

The interaction between lagged therapist SR and alliance is not significant. ($X^2(1) = 1.22$; $p < .269$: z_{11}= 1.1; $p < .001$, z_{12} = -1.1; $p < .001$).

Lagged Therapist Self-Regulation x Patient Self-Regulation

Lagged therapist SR and patient SR interactions are significantly associated with each other ($X^2(1) = 30.87$: $p < .001$; $z_{11} = -5.6$; $p < .001$: $z_{12} = 5.6$; $p < .001$) suggesting that in the overall sample, across high and low alliance segments, that therapists are *less* likely to express self-regulating behaviors in response to the patient's emission of self-regulating behaviors. Conversely, therapists are more likely to emit these types of behaviors when the patient is not doing so. However, the magnitude of effect is weak (Phi=-.072).

Summary

In summary, significant 3-way effects for therapist self-regulating behaviors, patient self-regulating behaviors and alliance variables are observed in the high alliance segments only. This analysis showed a turn-taking relationship in self-regulating behaviors such that therapists are more likely to emit self-regulating behaviors when patients are not doing so, and conversely, therapists are less likely to emit self-regulating behaviors when patients are emitting these behaviors. The strength of this relationship is weak (Phi=-.156). A similar complementary 2-way interaction was found between patient SR behaviors and lagged therapist SR behaviors, though the strength of the relationship was weak (-.072). Finally, a significant 2-way relationship was found between patient SR behaviors and alliance condition. Specifically, patients emitted more self-regulating behaviors in high alliance segments than in low alliance segments (Phi=.268). No such significant differential pattern was found for therapist SR behaviors.

Therefore, the hypothesis that more self-regulating behaviors would be found overall in the low alliance segments and that they would be reciprocated between patient and therapist was not justified. Rather, patients tend to emit self-regulating behaviors in high alliance segments over low alliance segments, and the patient – therapist interaction in these sessions is complementary as opposed to reciprocal.

Hypothesis 2:

High alliance segments will be characterized by regulated interactions as follows:

- During the patient's expression of positive, sad or fearful affect, patient and therapist will be engaged in significantly more bidirectional engagement behaviors that are characterized by reciprocity or gaze and torso lean. This would allow for a sense of responsiveness and receptivity by the therapist during the patient's expression of difficult affect states. Patient and therapist will engage in fewer bidirectional self-regulating behaviors, indicating more mutual regulatory functioning.

Low alliance segments will be characterized by dysregulated interactions as follows:

- During the patient's expression of positive, sad or fearful affects, patient and therapist will be engaged in significantly fewer reciprocated bidirectional engagement behaviors of gaze and torso lean that would serve to mediate negative affect states. In other words, when patient is expressing these positive or

vulnerable feelings, the dyad will not participate in interactive engagement behaviors that would serve to facilitate and comfortably regulate this expression. Additionally, patient and therapist will engage in more bidirectional self-regulating behaviors that would represent a retreat into a self-regulatory mode over a mutually regulated interaction in the face of these difficult affect states.

Hypothesis 3:

High alliance segments will be characterized by regulated interactions as follows:

- During the expression of patient anger, patient and therapist will be engaged in fewer bidirectional engagement behaviors of gaze and torso lean, allowing for a modulation of intensity of anger. Additionally, patient and therapist will engage in more bidirectional self-regulating behaviors, which will serve a compensatory function during the expression of negativity (Beebe & Lachmann, 1998).

Low alliance segments will be characterized by dysregulated interactions as follows:

- During the expression of anger, patient and therapist will be engaged in more bidirectional engagement behaviors of gaze and torso lean that serve to prolong the distressed state.

The above hypotheses will be explored by individual nonverbal behaviors.

Gaze Behaviors by Patient Affect

Table 8. Hierarchical Loglinear Model 4-way Interaction	
Alliance x Patient Affect x Lagged Therapist Gaze x Patient Gaze	**Likelihood Ratio Chi-Square**
4-way interaction	$X^2(3) = 12.92$; p<.0048
3-way interaction	$X^2(10) = 115.09$; p<.001
2-way interaction	$X^2(12) = 3{,}345.74$; p<.001
Marginal effects	$X^2(6) = 6{,}192.83$; p<.001
Tests of Partial Associations	
Alliance x Patient Affect x Lagged Therapist Gaze	$X^2(3) = 18.62$; p<.0003
Alliance x Patient Affect x Patient Gaze	$X^2(3) = 62.56$; p<.001
Alliance x Lagged Therapist Gaze x Patient Gaze	$X^2(1) = 1.326$; p<.2496
Patient Affect x Lagged Therapist Gaze x Patient Gaze	$X^2(3) = 5.462$; p<.1409
Alliance x Patient Affect	$X^2(3) = 2{,}479.46$; p<.001
Alliance x Lagged Therapist Gaze	$X^2(1) = 42.77$; p<.001
Patient Affect x Lagged Therapist Gaze	$X^2(3) = 41.74$; p<.001
All x Patient Gaze	$X^2(1) = 103.14$; p<.001
Affect x Patient Gaze	$X^2(3) = 520.63$; p<.001
Lagged Therapist Gaze x Patient Gaze	$X^2(3) = 126.06$; p<.001
Alliance	$X^2(1) = .00$; p=1
Patient Affect	$X^2(3) = 797.46$; p<.001
Lagged Therapist Gaze	$X^2(1) = 5{,}349.90$; p<.001
Patient Gaze	$X^2(1) = 45.47$; p<.001

The Hierarchical Loglinear model shows that: the 4-way interaction ($X^2(3) = 12.92$; *p<.0048*) is not significant. We therefore went on to analyze 3-way ($X^2(10) = 115.09$; *p<.001)* and 2-way ($X^2(12) = 3{,}345.74$; *p<.001*) interactions between patient affect, alliance, patient and therapist gaze, finding levels of significance. Three- way and 2-way chi-squares were then analyzed to identify significant patterns of interaction.

3-way Interactions

Table 9. Alliance x Patient Affect x Patient Gaze				
Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Low Alliance	Pt Positive	X^2 *(3) = 332.94;* p<.001	z_{11} *= -6.8;* p < .001, z_{12} *= 6.8;* p < .001	*.313*
	Pt Sad		z_{11} *= .1;* p < .001, z_{12} *= .1;* p < .001	
	Pt Angry		z_{11} *= -6.3;* p < .001, z_{12} *= 6.3;* p < .001	
	Pt Fearful		z_{11} *= 16.3;* p < .001, z_{12} *= -16.3;* p < .001	
High Alliance	Pt Positive	X^2 *(3) = 264.55;* p<.001	z_{11} *= -10.7;* p < .001, z_{12} *= 10.7;* p < .001	*.294*
	Pt Sad		z_{11} *= -5.2;* p < .001, z_{12} *= 5.2;* p < .001	
	Pt Angry		z_{11} *= -2.9;* p < .001, z_{12} *= 2.9;* p < .001	
	Pt Fearful		z_{11} *= 15.4;* p < .001, z_{12} *= -15.4;* p < .001	

Alliance x Patient Affect x Patient Gaze

There is a significant pattern of interaction between these three variables showing a significant interaction between alliance, affect and gaze as follows:

Within low alliance segments, patient affect significantly impacts on patient gaze behavior (X^2 (3) = 332.94; *p<.001)*, with a moderate magnitude of strength (Phi=.313).

- Patients rated as positive or angry, were more likely to look towards their therapist
- Patients rated as fearful were more likely to look away from their therapist
- No significant effect found for patient affect rating of sadness

Within high alliance segments, patient affect significantly impacts on patient gaze behavior (X^2 (3) = 264.55; *p<.001)*, with a weak magnitude of effect (Phi=.294).

- Patients rated as positive and sad were more likely to look towards their therapist. A similar pattern was found for anger, though the pattern was only mildly established.
- Patients rated as fearful were significantly more likely to look away from their therapist

The affect rating of sadness was the only affect rating that had differential effects on gaze patterns between low and high alliance segments. Specifically, in high alliance segments, patient affect of sadness influenced patient gaze behavior while in low alliance segments, sadness had no influence at all.

Table 10. Alliance x Patient Affect x Lagged Therapist Gaze

Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Low Alliance	Pt Positive	X^2 *(3) = 58.58* p<.001	z_{11} *= -1.5;* p < .001, z_{12} *= 1.5;* p < .001	*.125*
	Pt Sad		z_{11} *= -5.0;* p < .001, z_{12} *= 5.0;* p < .001	
	Pt Angry		z_{11} *= 6.5;* p < .001, z_{12} *= -6.5;* p < .001	
	Pt Fearful		z_{11} *= -3.4;* p < .001, z_{12} *= 3.4;* p < .001	
High Alliance	Pt Positive	X^2 *(2) = 11.11;* p<.011	z_{11} *= 2.7;* p < .001, z_{12} *= -2.7;* p < .001	*.061*
	Pt Sad		z_{11} *= -2.0;* p < .001, z_{12} *= 2.0;* p < .001	
	Pt Angry		z_{11} *= -1.5;* p < .001, z_{12} *= 1.5;* p < .001	
	Pt Fearful		z_{11} *= .6;* p < .001, z_{12} *= .6;* p < .001	

Alliance x Patient Affect x Lagged Therapist Gaze

There is a significant pattern of interaction between these three variables showing that patient affect discriminates between alliance and therapist gaze as follows:

Within low alliance segments, patient affect significantly impacts on lagged therapist gaze behavior (X^2 (3) = 58.58; *p<.001)*, with a weak magnitude of strength (Phi=.125).

- When patients were rated as positive there was no significant impact on therapist gaze
- When patients were rated as sad or fearful, therapists were significantly more likely to look towards their patient
- When patients were rated as angry, therapists were more likely to look away from their patients

Within high alliance segments, patient affect significantly impacts on lagged therapist gaze behavior (X^2 (2) = 11.11; *p<.001)*, with a weak magnitude of effect (Phi=.061).

However, the only standardized adjusted residual value higher than 2.0 significance, is the patient affect judgment of positive.

- When patients are rated as positive, the therapist is slightly less likely to look towards the patient.

2-way Interactions

Table 11. Patient Gaze x Patient Affect				
Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Gaze (non-gaze/gaze)	Pt Positive	X^2 *(3) = 453.21* p<.001	z_{11} *= -12.9;* p < .001, z_{12} *= 12.9;* p < .001	*.272*
	Pt Sad		z_{11} *= -5.0;* p < .001, z_{12} *= 5.0;* p < .001	
	Pt Angry		z_{11} *= -3.4;* p < .001, z_{12} *= 3.4;* p < .001	
	Pt Fearful		z_{11} *= 19.1;* p < .001, z_{12} *= -19.1;* p < .001	

Patient gaze x patient affect:

This interaction was significant (X^2 (3) = 453.21; *p<.001),* suggesting that patient affect ratings differentially impacted on patient gaze behavior. The strength of this effect is weak (Phi=.272).

- Patients rated as positive were more likely to look towards their therapist. A similar effect was found for patient ratings of sadness and anger, but the level of significance was not as strong.
- Patients rated as fearful were less likely to look at their therapists

Table 12. Lagged Therapist Gaze x Patient Affect				
Interaction		*Chi-Square Likelihood Ratio*	Standardized Adjusted Residuals	*Phi*
Gaze (non-gaze/gaze)	Pt Positive	X^2 *(3) = 149.68;* p<.001	z_{11} *= -1.2;* p < .001, z_{12} *= 1.2;* p < .001	*.155*
	Pt Sad		z_{11} *= -7.1;* p < .001, z_{12} *= 7.1;* p < .001	
	Pt Angry		z_{11} *= 11.5;* p < .001, z_{12} *= -11.5;* p < .001	
	Pt Fearful		z_{11} *= -5.5* p < .001, z_{12} *= 5.5;* p < .001	

Lagged Therapist Gaze x Patient Affect

The interaction between lagged therapist gaze and patient affect is significant (X2 (3) = 149.68; p<.001) with a weak magnitude of effect (Phi=.155) indicating the following:

- When patients are rated sad and fearful, therapists are more likely to gaze toward them
- When patients are rated angry, therapists are more likely to gaze away
- No significant interaction was found for patient affect rating of positive.

Table 13. 2-way Interactions – Lagged Therapist Gaze, Patient Gaze, Alliance

	Likelihood Ratio Chi-Square	**Standardized Adjusted Residual**	**Phi**
Lagged Therapist Gaze x Patient Gaze	X^2 *(1) = 120.33;* p < .001	z_{11}= -10.6; *p < .001,* z_{12} = 10.6; *p < .001*	*-.137*
Lagged Therapist Gaze x Alliance	X^2 *(1) = 128.98;* p < .001	z_{11}= *11.1;* p < .001, z_{12} = *-11.1;* p < .001	*.143*
Patient Gaze x Alliance	X^2 *(1) =10.50;* p < .001	z_{11}= *3.2;* p < .001,z_{12} = *-3.2;* p <.001	*.042*

Lagged Therapist Gaze x Patient Gaze

- Therapists are significantly more likely to gaze when their patient is looking away (X 2 (1) = 120.33; p < .001) with a weak magnitude of effect (Phi=-.137), indicating a turn-taking relationship in gaze behaviors.

Lagged Therapist Gaze x Alliance

- Therapists are significantly more likely to gaze towards their patients in high alliance versus low alliance segments (z_{11}= 11.1; $p < .001$, z_{12} = -11.1; $p < .001$) with a weak magnitude of effect (Phi=.143).

Patient Gaze x Alliance

- Similarly, patients are significantly more likely to gaze towards their therapist in high alliance versus low alliance segments (z_{11}= 3.2; $p < .001$,z_{12} = -3.2; $p <.001$) with a weak magnitude of effect (Phi=.043).

Summary of Patient Affect – Gaze Interactions

Table 14. Patient Affect by Gaze Interactions	**Phi**
Alliance x Patient Affect x Patient Gaze	
Low Alliance	.313
High Alliance	.294
Alliance x Patient Affect x Lagged Therapist Gaze	
Low Alliance	.125
High Alliance	.061
Patient Gaze x Patient Affect	.272
Lagged Therapist Gaze x Patient Affect	.155
Lagged Therapist Gaze x Patient Gaze	-.137
Lagged Therapist Gaze x Alliance	.143
Patient Gaze x Alliance	.042

The most influential three-way interaction, with a moderate magnitude of strength was *Alliance x Patient Affect x Patient Gaze*. This interaction revealed the following:

- Patient affect rating of sadness was only affect rating that differentiated patient gaze behaviors between low and high alliance segments. Patients rated as sad in high alliance segment are more likely to look towards their therapist whereas in low alliance there is no significant impact of patient sadness rating on patient gaze behavior.
- Patients rated as fearful were significantly more likely to look away from their therapist in both high and low alliance segments.
- Patients rated as angry or positive in both high and low alliance segments are significantly more likely to look towards therapists.

Interactions between alliance, patient affect and therapist gaze had relatively less impact on therapist gaze behavior. This suggests that patient gaze was influenced significantly by patient affect whereas therapist gaze was relatively less influenced by patient affect.

Two-way interactions suggest the following important contributions to nonverbal interactions as follows:

- Patient gaze is significantly influenced by patient affect states, above and beyond alliance rating whereas therapist gaze is also influenced by patient affect states, but to a smaller degree
- Generally, patient gaze and therapist gaze tends to be complementary in nature, when not taking affect ratings into account

- Therapists gaze behavior is significantly influenced by alliance level; they tended to gaze away in low alliance segments, whereas they exhibited a more equal distribution of gaze behavior in high alliance segments. In contrast, patients gaze behavior tended to be more evenly distributed between low and high alliance segments

Lean Behaviors by Patient Affect

Table 15. Hierarchical Loglinear Model 4-way Interaction:	
Alliance x Patient Affect Level x Lagged Therapist Lean x Patient Lean	**Likelihood Ratio Chi-Square**
4-way interaction	$X^2(3) = 0$; p=1.00
3-way interaction	$X^2(10) = 1{,}714$; p<.001
2-way interaction	$X^2(12) = 7{,}545.72$; p<.001
Marginal effects	$X^2(6) = 1{,}064.57$; p<.001
Tests of Partial Associations	
Alliance x Patient Affect x Lagged Therapist Lean	$X^2(3) = 21.99$; p<.001
Alliance x Patient Affect x Patient Lean	$X^2(3) = 1{,}015.19$; p<.001
Alliance x Lagged Therapist Lean x Patient Lean	$X^2(1) = .0$; p<.9963
Patient Affect x Lagged Therapist Lean x Patient Lean	$X^2(3) = 18.57$; p<.0003
Alliance x Patient Affect	$X^2(3) = 3{,}052.37$; p<.001
Alliance x Lagged Therapist Lean	$X^2(1) = 652.01$; p<.001
Patient Affect x Lagged Therapist Lean	$X^2(3) = 4{,}048.36$; p<.001
Alliance x Patient Lean	$X^2(1) = 26.06$; p<.001
Patient Affect x Patient Lean	$X^2(3) = 607.68$; p<.001
Lagged Therapist Lean x Patient Lean	$X^2(3) = 667.39$; p<.001
Alliance	$X^2(1) = .00$; p=1
Patient Affect	$X^2(3) = 798.31$; p<.001
Lagged Therapist Lean	$X^2(1) = 247.35$; p<.001
Patient Lean	$X^2(1) = 18.89$; p<.001

The Hierarchical Loglinear model shows that: 4-way interactions between patient affect, alliance level, patient and therapist lean are not significant (X^2 (3) = 0; p=1.00). 3-way interactions (X^2 (10) = 1,714; p<.001) and 2-way interactions (X^2 (12) = 7,545.72; p<.001) between patient affect, alliance, patient and therapist lean are significant.

Therefore, we analyzed 3-way and 2-way chi-squares to identify significant patterns of interaction.

3-way interactions

Table 16. Alliance x Patient Affect x Patient Lean

Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Low Alliance	Pt Positive	X^2 *(3) =944.67* p<.001	z_{11} *= 8.7;* p < .001, z_{12} *= -8.7;* p < .001	*.490*
	Pt Sad		z_{11} *= 15.7;* p < .001, z_{12} *= -15.7;* p < .001	
	Pt Angry		z_{11} *= -26.3;* p < .001, z_{12} *= 26.3;* p < .001	
	Pt Fearful		z_{11} *= 15.7;* p < .001, z_{12} *= -15.7;* p < .001	
High Alliance	Pt Positive	X^2 *(3) = 754.31;* p<.001	z_{11} *= 1.7;* p < .001, z_{12} *= -1.7;* p < .001	*.454*
	Pt Sad		z_{11} *= -19.8;* p < .001, z_{12} *= 19.8;* p < .001	
	Pt Angry		z_{11} *= 19.0;* p < .001, z_{12} *= -19.0;* p < .001	
	Pt Fearful		z_{11} *= 5.5;* p < .001, z_{12} *= -5.5;* p < .001	

Alliance x Patient Affect x Patient Lean

Within low alliance segments, patient affect significantly discriminates patient lean behavior (X^2 (3) =944.67 p<.001) with a moderate strength of effect (Phi=.490) as follows:

- When the patient is rated positive, sad or fearful, the patient is significantly more likely to not lean forward
- When the patient is rated angry, the patient is significantly more likely to lean forward

Within high alliance segments, patient affect significantly discriminates patients lean behavior (X^2 (3) = 754.31; p<.001) with a moderate strength of effect (Phi=.454) as follows:

- When the patient is rated as sad, the patient is significantly more likely to lean forward

- When the patient is rated as angry and fearful, they are significantly more likely to not lean forward. The effect of this pattern is much stronger for the affect rating of anger than for fear.

Table 17. Alliance x Patient Affect x Lagged Therapist Lean

Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Low Alliance	Pt Positive	X^2 *(3) =1,282.37;* p<.001	z_{11} *= 18.1;* p < .001, z_{12} *= -18.1;* p < .001	*.559*
	Pt Sad		z_{11} *= 18.1;* p < .001, z_{12} *= -18.1;* p < .001	
	Pt Angry		z_{11} *= -11.8;* p < .001, z_{12} *= 11.8;* p < .001	
	Pt Fearful		z_{11} *= -18.3;* p < .001, z_{12} *= 18.3;* p < .001	
High Alliance	Pt Positive	X^2 *(3)=2,507.22;* p<.001	z_{11} *= 42.3;* p < .001, z_{12} *= -42.3;* p < .001	*.829*
	Pt Sad		z_{11} *= 1.7;* p < .001, z_{12} *= -1.7;* p < .001	
	Pt Angry		z_{11} *= -11.8;* p < .001, z_{12} *= 11.8;* p < .001	
	Pt Fearful		z_{11} *= -28.9;* p < .001, z_{12} *= 28.9;* p < .001	

Alliance x Patient Affect x Lagged Therapist Lean

Within low alliance segments, patient affect ratings significantly differentiate therapist lean behavior

(X^2 (3) =1,282.37; p<.001) with a strong magnitude of effect (Phi=.559) as follows:

- When the patient is rated positive or sad, the therapist is significantly more likely to not lean forward
- When the patient affect is rated angry or fearful, the therapist is significantly more likely to lean forwards.

Within high alliance segments, patient affect ratings significantly differentiate therapist lean behavior (X^2 (3)=2,507.22; p<.001) with a strong magnitude of effect (Phi=.829) as follows:

- When the patient is rated positive the therapist is significantly more likely to not lean forward

- When the patient is rated angry or fearful, the therapist is significantly more likely to lean forward
- In contrast to the low alliance segments, patient rating of sadness did not have any differential impact on therapist lean behavior.

Table 18. Patient Affect x Lagged Therapist Lean x Patient Lean

Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Therapist not Leaning	Pt Positive	X^2 *(2) = 84.47* p<.001	z_{11} *= -6.1;* p < .001, z_{12} *= 6.1;* p < .001	*.182*
	Pt Sad		z_{11} *= 8.5;* p < .001, z_{12} *= -8.5;* p < .001	
	Pt Angry		z_{11} *= -1.4;* p < .001, z_{12} *= 1.4;* p < .001	
	Pt Fearful		*No patients judged fearful in this cell*	
Therapist Leaning	Pt Positive	X^2 *(2) = 940.46;* p<.001	*No patients judged positive in this cell*	*.451*
	Pt Sad		z_{11} *= -23.2;* p < .001, z_{12} *= 23.2;* p < .001	
	Pt Angry		z_{11} *= -4.0;* p < .001, z_{12} *= 4.0; p* < .001	
	Pt Fearful		z_{11} *= 21.7;* p < .001, z_{12} *= -21.7;* p < .001	

Patient Affect x Lagged Therapist Lean x Patient Lean

When the therapist was not leaning, a significant association was found between non-leaning behaviors, patient affect rating and patient lean behaviors, (X^2 (2) = 84.47 p<.001) with a weak magnitude of effect (Phi=.182) as follows:

- Patients were more likely to lean when patient affect was rated positive, than in the context of other affect ratings. However, they still leaned a smaller percentage of time within positive affect as compared to non-leaning behaviors (38.8% compared to 61.2% respectively – see cross tabulation page). This suggests a reciprocity of non-leaning behaviors between patient and therapist.
- When patient affect was rated sad, patients were more likely to not lean in response to therapist non-leaning behaviors, again showing a reciprocity of behaviors.

- Patient rating of anger did not show any significant associations for therapist non-lean behavior, though significant effects were found for patient lean behaviors within anger rating (see cross tabulation).
- No patients were rated fearful in context of their therapist not leaning forward.

When the therapists were leaning forward, a significant association was found between therapist lean behaviors, patient affect ratings and patient lean behaviors, (X^2 (2) = 940.46; p<.001) with a moderate magnitude of effect (Phi=.451) as follows;

- When patient affect was rated positive, no therapists were leaning forward throughout all segments.
- When patient affect was rated sad or angry patients were significantly more likely to lean forward, showing reciprocity of lean behaviors.
- When patients were rated fearful, patients were significantly more likely to not lean forward when therapists were leaning forward, suggesting complementary lean behaviors

2-way Interactions:

Table 19. Lagged Therapist Lean x Patient Affect

Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Therapist Lean (non-lean/lean)	Pt Positive	X^2 *(3) = 2387.77;* p<.001	z_{11} *= 39.9*p < .001, z_{12} *= -39.9;* p < .001	*.632*
	Pt Sad		z_{11} *= 7.0;* p < .001, z_{12} *= -7.0;* p < .001	
	Pt Angry		z_{11} *= -2.7;* p < .001, z_{12} *= 2.7;* p < .001	
	Pt Fearful		z_{11} *= -36.4;*p < .001, z_{12} *= 36.4;* p < .001	

Lagged Therapist Lean x Patient Affect Interactions:

Therapist lean behavior is significantly affected by patient affect ratings (X^2 (3) = 2387.77; p<.001) with a strong magnitude of effect (Phi=.632).

- When patient affect is rated positive or sad, the therapist is less likely to lean
- When patient affect is rated angry or fearful, the therapist is more likely to lean forward

Table 20. Patient Lean x Patient Affect				
Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Patient Lean (non-lean/lean)	Pt Positive	*X^2 (3) = 179.97* p<.001	*z_{11}= 5.4;* p < .001, *z_{12} = -5.4;* p < .001	*.173*
	Pt Sad		*z_{11}= -9.6;* p < .001, *z_{12} = 9.6;* p < .001	
	Pt Angry		*z_{11}= -4.6;* p < .001, *z_{12} = 4.6;* p < .001	
	Pt Fearful		*z_{11}= 9.6;* p < .001, *z_{12} = -9.6;* p < .001	

Patient Lean x Patient Affect Interactions:

Patient lean behavior is also differentially impacted by patient affect ratings X^2 (3) = 179.97 p<.001, however the magnitude of effect is weak (Phi=.173).

- When the patient is rated positive or fearful, they are less likely to lean forward
- When the patient is rated sad or angry, they are more likely to lean forward

Table 21. 2-way Interactions – Pt Lean, Lagged Th Lean, Aliance			
	Likelihood Ratio Chi-Square	**Adjusted Residual**	**Phi**
Patient Lean x Alliance	*X^2 (1) =52.13* p < .001	*z_{11}= 7.2;* p < .001,*z_{12} = -7.2;* p < .001	.093
Lagged Therapist Lean x Patient Lean	*X^2 (1) = 407.71;* p < .001	z_{11}= 20; *p < .001*,z_{12} = -20*; p < .001*	.259
Lagged Therapist Lean x Alliance	*X^2 (1) = 270.54;* p < .001	*z_{11}= 16.4;* p < .001,*z_{12}= -16.4;* p < .001	.212

Patient Lean x Alliance

- The association between patient lean and alliance is significant (X^2 (1) =52.13 p < .001) with a weak magnitude of effect (Phi=.093) suggesting that patients are more likely to not lean in low alliance segments and more likely to lean in high alliance segments

Lagged Therapist Lean x Alliance

- A similar association was found between lagged therapist lean and alliance (X^2 (1) = 270.54; p < .001) with a weak magnitude of effect (Phi=.212) suggesting a similar but stronger pattern between therapist lean and alliance of therapists tending to lean forward in high alliance segments and not lean forward in low alliance segments

Lagged Therapist Lean x Patient Lean

- A significant association was found between lagged therapist lean and patient lean (X^2 (1) = 407.71; p < .001) with a weak magnitude of effect (Phi=.259) suggesting that therapists and patients engage in reciprocated lean behaviors, so that when patients lean, therapists will lean, and conversely, when patients do not lean, therapist will not lean.

Patient Affect x Lean Interaction Summary:

Table 22. Patient Affect by Lean Interactions	Phi
Alliance x Patient Affect x Patient Lean	
Low Alliance	.490
High Alliance	.454
Alliance x Patient Affect x Lagged Therapist Lean	
Low Alliance	.559
High Alliance	.829
Patient Affect x Lagged Therapist Lean x Patient Lean	
Therapist Not-Leaning	.182
Therapist Leaning	.451
Lagged Therapist Lean x Patient Affect	.632
Patient Lean x Patient Affect	.173
Patient Lean x Alliance	.093
Lagged Therapist Lean x Patient Lean	.259
Lagged Therapist Lean x Alliance	.212

Alliance x Patient Affect x Therapist Lean interactions were significantly associated, with strong effect sizes as follows:

- In both low and high alliance segments, when patients were rated positive or sad, therapists were more likely to not lean forward
- In both low and high alliance segments, when patients are rated angry or fearful, therapists are more likely to lean forward
- In low alliance segments, when patients were rated sad, therapists were more likely to not lean forward, whereas in high alliance segments, patient rating of sadness was not significantly associated with therapist lean by alliance interactions.

Lagged Therapist Lean x Patient Lean x Patient Affect interactions were significantly associated, with a moderate to weak magnitude of effect as follows:

- When patient affect was rated positive, while therapists were not leaning forward, patients were more likely to lean forward, indicating a complementary lean interaction. However, while therapists were leaning forward, no patients were judged as having positive affect
- When patient affect was rated sad, patients and therapists were more likely to engage in a reciprocal, mirrored lean pattern
- Patient anger rating was only significant when therapists were leaning forward. Patients tended to respond to this by also leaning forward, in a mirrored response.
- When therapists were not leaning forward, no patient affect was judged fearful. Patient fear was always coupled with therapist forward lean. In response, patients were more likely to not lean forward in a complementary lean pattern.

Alliance x Patient Affect x Lagged Patient Lean interactions are significantly associated, with moderate effect sizes as follows:

- In both low and high alliance segments, when patient affect is rated fearful, patients are more likely to not lean forward
- In low alliance segments, when patient affect is rated sad, patients are more likely to not lean forward. In contrast, in high alliance segments, when patient affect is rated sad, patients are more likely to lean forward.

- In low alliance segments, when patient affect is rated angry, patients are more likely to lean forward In contrast, in high alliance segments, when patient affect is rated angry, patients are likely to lean back
- In low alliance segments, when patient affect is rated positive, patients are more likely to not lean forward, whereas patient sadness did not significantly discriminate any patient lean patterns in high alliance segments.

Generally, lean behaviors follow a reciprocal pattern; when patients lean therapists will lean, and conversely, when patients do not lean, neither do therapists. However, various affect ratings more finely discriminate patient – therapist lean behaviors. In two-way interactions, patient affect ratings were significantly associated with therapist lean behaviors with a strong magnitude of effect as follows:

- When patients were rated positive or sad, therapists tended to not lean forward
- When patients were rated fearful or angry, therapists tended to lean forward

Patient affect ratings were also significantly associated with patient lean behaviors, but with a much weaker association as follows:

- Consistent with therapist behavior, when patients were rated positive they tended not to lean forward, creating a reciprocated lean pattern

In contrast to therapist lean behaviors, when patients were rated sad or fearful, patients tended to not lean forward, creating a complementary lean pattern

Self-Regulating Behaviors by Patient Affect

Table 23. Hierarchical Loglinear Model 4-way Interaction:	
Alliance x Patient Affect Level x *Lagged Therapist SR x Patient SR*	**Likelihood Ratio Chi-Square**
4-way interaction	$X^2(3) = 23.07$; p<001
3-way interaction	$X^2(10) = 1,212.85$; p<.001
2-way interaction	$X^2(12) = 3,492.63$; p<.001
Marginal effects	$X^2(6) = 1,018.74$; p<.001
Tests of Partial Associations	
Alliance x Patient Affect x Lagged Therapist SR	$X^2(3) = 915.30$; p<.001
Alliance x Patient Affect x Patient SR	$X^2(3) = 95.26$; p<.001
Alliance x Lagged Therapist SR x Patient SR	$X^2(1) = 16.51$; p<..9963
Patient Affect x Lagged Therapist SR x Patient SR	$X^2(3) = 22.72$; p<.0003
Alliance x Patient Affect	$X^2(3) = 2,335.79$; p<.001
Alliance x Lagged Therapist SR	$X^2(1) = 56.38$; p<.001
Patient Affect x Lagged Therapist SR	$X^2(3) = 463.68$; p<.001
Alliance x Patient SR	$X^2(1) = 185.02$; p<.001
Affect x Patient SR	$X^2(3) = 61.66$; p<.001
Lagged Therapist SR x Patient SR	$X^2(3) = 47.22$; p<.001
Alliance	$X^2(1) = .00$; p=1
Patient Affect	$X^2(3) = 797.37$; p<.001
Lagged Therapist SR	$X^2(1) = 2214.13$ p<.001
Patient SR	$X^2(1) = 7.24$; p<.007

The Hierarchical Loglinear model shows that: 4-way interactions between patient affect, alliance level, patient and therapist self-regulating behaviors are significant ($X^2(3) = 23.07$; p<.001). 3-way interactions (X^2 (10) = 1,212.85; p<.001) and 2-way interactions (X^2 (12) = 3,492.63; p<.001) interactions between patient affect, alliance, patient and therapist SR behaviors are significant. However, adjusted residual values for 4-way interactions were not significant, so we proceeded to 3-way and 2-way chi-squares to identify significant patterns of interaction.

3-way Interactions

Table 24. Patient Affect x Lagged Therapist SR x Patient SR				
Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Therapist not Self-regulating	Pt Positive	X^2 *(2) = 424.45* p<.001	z_{11} *= 1.0;* p < .001, z_{12} *= -1.0;* p < .001	*.336*
	Pt Sad		z_{11} *= -16.3;* p < .001, z_{12} *= 16.3;* p < .001	
	Pt Angry		z_{11} *= 16.7;* p < .001, z_{12} *= -16.7;* p < .001	
	Pt Fearful		z_{11} *= -6.2;* p < .001, z_{12} *= 6.2;* p < .001	
Therapist Self-regulating	Pt Positive	X^2 *(2) = 27.55;* p<.001	z_{11} *= -.4;* p < .001, z_{12} *= .4;* p < .001	*.106*
	Pt Sad		z_{11} *= -.5;* p < .001, z_{12} *= .5;* p < .001	
	Pt Angry		z_{11} *= 4.5;* p < .001, z_{12} *= -4.5; p* < .001	
	Pt Fearful		z_{11} *= -4.0;* p < .001, z_{12} *= 4.0;* p < .001	

Patient Affect x Lagged Therapist SR x Patient SR

Therapist non-SR behaviors significantly interact with patient affect rating and patient SR behaviors (X^2 *(2) = 424.45* p<.001) with a moderate magnitude of effect (Phi=.336) as follows:

- When patient affect is sad or fearful, the patient is significantly more likely to exhibit SR behaviors, in a complementary, turn-taking interaction
- When patient affect is rated angry, the patient is significantly more likely to not exhibit SR behaviors, with both partners abstaining from SR behaviors
- Patient affect rating of positive does not have significant impact on SR behaviors.

Therapist expression of SR behaviors significantly interacts with patient affect ratings and patient SR behaviors (X^2 (2) = 27.55; p<.001) with a weak magnitude of effect (Phi=.106) as follows:

- When the patient affect is rated angry, the patient is significantly less likely to exhibit SR behaviors in response to therapist SR behaviors

- When the patient affect is rated fearful, the patient is significantly more likely to exhibit SR behaviors in a reciprocal behavior pattern
- When patient affect is rated positive or sad, there is no significant impact on patient SR behaviors while the therapist is exhibiting SR behaviors

Table 25. Alliance x Patient Affect x Patient SR

Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Low Alliance	Pt Positive	X^2 *(3) = 65.99;* p<.001	z_{11} *= -1.8;* p < .001, z_{12} *= 1.8;* p < .001	*.145*
	Pt Sad		z_{11} *= 6.2;* p < .001, z_{12} *= -6.2;* p < .001	
	Pt Angry		z_{11} *= .6;* p < .001, z_{12} *= .6;* p < .001	
	Pt Fearful		z_{11} *= -5.3;* p < .001, z_{12} *= 5.3;* p < .001	
High Alliance	Pt Positive	X^2 *(3) = 150.96;* p<.001	z_{11} *= 6.8;* p < .001, z_{12} *= -6.8;* p < .001	*.220*
	Pt Sad		z_{11} *= -11.3;* p < .001, z_{12} *= 11.3;* p < .001	
	Pt Angry		z_{11} *= 4.2;* p < .001, z_{12} *= -4.2;* p < .001	
	Pt Fearful		z_{11} *= 2.5;* p < .001, z_{12} *= -2.5;* p < .001	

Alliance x Patient Affect x Patient SR

Within low alliance segments, patient affect ratings significantly discriminate patient SR behavior patterns (X^2 (3) = 65.99; p<.001) with a weak strength of effect (Phi=.145) as follows:

- When patient affect is rated sad, the patient is significantly more likely to not exhibit SR behaviors
- When patient affect is rated fearful, the patient is significantly more likely to exhibit SR behaviors
- When patient affect is rated positive or angry, there is no significant interaction occurring

Within high alliance segments, patient affect ratings significantly discriminate patient SR behavior patterns (X^2 (3) = 150.96; p<.001) with a weak strength of effect (Phi=.220) as follows:

- When the patient affect is rated positive, angry or fearful, the patient is significantly less likely to engage in SR behaviors
- When the patient affect is rated sad, the patient is significantly more likely to engage in SR behaviors.

Table 26. Alliance x Patient Affect x Lagged Therapist SR				
Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Low Alliance	Pt Positive	X^2 *(3) =926.57;* p<.001	z_{11} *= 4.9;* p < .001, z_{12} *= -4.9;* p < .001	*.537*
	Pt Sad		z_{11} *= -19.1;* p < .001, z_{12} *= 19.1;* p < .001	
	Pt Angry		z_{11} *= 22.4;* p < .001, z_{12} *= -22.4;* p < .001	
	Pt Fearful		z_{11} *= -20.0;* p < .001, z_{12} *= 20.0;* p < .001	
High Alliance	Pt Positive	X^2 *(3)=533.37;* p<.001	z_{11} *= -19.7;* p < .001, z_{12} *= 19.7;* p < .001	*.415*
	Pt Sad		z_{11} *= -.6;* p < .001, z_{12} *= .6;* p < .001	
	Pt Angry		z_{11} *= -2.6;* p < .001, z_{12} *= 2.6;* p < .001	
	Pt Fearful		z_{11} *= 18.2;* p < .001, z_{12} *= -18.2;* p < .001	

Alliance x Patient Affect x Lagged Therapist SR

Within low alliance segments, patient affect ratings significantly discriminate therapist SR behaviors (X^2 (3) =926.57; p<.001) with a strong magnitude of effect (Phi=.537) as follows:

- When the patient affect is rated positive or angry, the therapist is significantly more likely to not engage in SR behaviors
- When the patient affect is rated sad or fearful, the therapist is significantly more likely to engage in SR behaviors

Within high alliance segments, patient affect ratings significantly discriminate therapist SR behaviors (X^2 (3)=533.37; p<.001) with a moderate magnitude of effect (Phi=.415) as follows:

- When the patient affect is rated positive or angry, the therapist is significantly more likely to engage in SR behaviors

- When the patient affect is rated fearful, the therapist is significantly less likely to engage in SR behaviors
- When the patient affect is rated sad, no significant effect was found on therapist SR

2-way Interactions

Table 27. Patient SR x Patient Affect				
Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Patient SR (/non-SR/SR)	Pt Positive	X^2 *(3) = 274.09* p<.001	z_{11} *= 1.3;* p < .001, z_{12} *= -1.3;* p < .001	*.214*
	Pt Sad		z_{11} *= -11.0;* p < .001, z_{12} *= 11.0;* p < .001	
	Pt Angry		z_{11} *= 14.8;* p < .001, z_{12} *= -14.8;* p < .001	
	Pt Fearful		z_{11} *= -7.7;* p < .001, z_{12} *= 7.7;* p < .001	

Patient SR x Patient Affect

A significant interaction was found between patient SR behaviors and patient affect (X^2 (3) = 274.09 p<.001) with a weak magnitude of effect (Phi=.214) as follows:

- When patient affect was rated sad or fearful, patients were more likely to emit SR behaviors.
- When patient affect was rated angry, patients were more likely to not emit SR behaviors.

Table 28. Lagged Therapist SR x Patient Affect				
Interaction		*Chi-Square Likelihood Ratio*	*Standardized Adjusted Residuals*	*Phi*
Therapist SR (/non-SR/SR)	Pt Positive	X^2 *(3) = 374.51;* p<.001	z_{11} *= -12.9;*p < .001, z_{12} *= 12.9;* p < .001	*.250*
	Pt Sad		z_{11} *= -10.9;* p < .001, z_{12} *= 10.9;* p < .001	
	Pt Angry		z_{11} *= 14.4;* p < .001, z_{12} *= -14.4;* p < .001	
	Pt Fearful		z_{11} *= 4.4;*p < .001, z_{12} *= -4.4;* p < .001	

Lagged Therapist SR x Patient Affect

A significant interaction was found between therapist SR behaviors and patient affect (X^2 (3) = 374.51; p<.001) with a weak magnitude of effect (Phi=.250) as follows:

- When patient affect was rated positive or sad, therapists were more likely to emit SR behaviors.
- When patient affect was rated angry or fearful, patients were more likely to not emit SR behaviors.

Table 29. 2-way Interactions – Patient SR, Lagged Therapist SR, Alliance

	Likelihood Ratio Chi-Square	Adjusted Residual	Phi
Patient SR x Alliance	*X^2 (1) = 434.76; p < .001*	*z_{11}= 20.7; p < .001, z_{12} = -20.7; p < .001*	*.268*
Lagged Therapist SR x Patient SR	*X^2 (1) = 30.87; p < .001*	Z_{11}= -5.6; p < .001, Z_{12} = 5.6; p < .001	*-.072*
Lagged Therapist SR x Alliance	*X^2 (1) = 1.22; p < .269*	*Z_{11}= 1.1; p < .001, z_{12} = -1.1; p < .001*	*.269*

Patient SR x Alliance

A significant interaction was noted between patient SR behaviors and alliance level (X^2 (1) =434.76; p < .001) with a weak magnitude of effect (Phi=.268) as follows:

- Patients were significantly more likely to emit SR behaviors in high alliance segments than in low alliance segments.

Lagged Therapist SR x Alliance

- No significant interaction was found between lagged therapist SR and alliance level.

Lagged Therapist SR x Patient SR

- A mildly significant interaction was found between lagged therapist SR behaviors and patient SR behaviors with a weak magnitude of effect (-.072) suggesting that

therapists were more likely to emit SR behaviors when patients were not, and conversely, were less likely to when patients were emitting SR behaviors.

Patient Affect x SR Interaction Summary:

Table 30. Patient Affect by SR Interactions	**Phi**
Patient Affect x Lagged Therapist SR x Patient SR	
Therapist not SR	.336
Therapist SR	.106
Alliance x Patient Affect x Patient SR	
Low Alliance	.145
High Alliance	.220
Alliance x Patient Affect x Lagged Therapist SR	
Low Alliance	.537
High Alliance	.415
Patient SR x Patient Affect	.214
Lagged Therapist SR x Patient Affect	.250
Patient SR x Alliance	.268
Lagged Therapist SR x Patient SR	-.072
Lagged Therapist SR x Alliance	.269

Patient Affect x Lagged Therapist SR Behaviors x Alliance interactions were significantly associated, with moderate to strong effect sizes as follows:

- In low alliance segments, when patient affect was rated positive, therapists tended to exhibit fewer SR behaviors. In contrast, during high alliance segments, therapists exhibited significantly more SR behaviors when the patient was rated positive.
- In low alliance segments, when patients were rated sad or fearful, therapists tended to exhibit more SR behaviors. In high alliance segments, patient sadness had no significant impact on therapist SR behaviors.
- In low alliance segments, when patients were rated fearful, therapists tended to exhibit more SR behaviors. In contrast, in high alliance segments, patient fearful rating was associated with significantly less therapist SR behaviors

Patient SR Behaviors x Lagged Therapist SR Behaviors x Patient Affect interactions were significant, with a moderate to weak strengths of effect as follows:

- When the patient is rated angry or fearful, and the therapist is not emitting SR behaviors, the patient is more likely to emit SR behaviors, suggesting a complementary, turn-taking interaction between patient and therapist.
- In contrast, when the patient is rated as angry, both therapist and patient are less likely to emit SR behaviors.

Chapter 4

Discussion

Dyadic affect regulation is defined as the individual contributions of each partner towards interactions that allow for an environment of safety and acceptance of emotional expression, whether it be positive or negative in tone. An affectively regulated interaction allows for a stable engagement so that when negative affects are shared, there is an ability to move back to a more positive emotional place; the intensity or level of arousal does not create a state of unmanageable distress, and the patient is able to refer to the therapist for comfort Dysregulated interactions are marked by either a nonproductive interpersonal engagement, or, disengagement from the relationship. Engagement can be characterized by dysregulating patterns that lead to overarousal and inability to modulate the level of intensity of feeling states. Alternately, active disengagement can promote mutual dysregulation and withdrawal into a self-regulatory mode, especially in the face of more vulnerable negative affective states. Disengagement can be interactively responsive, as in the case where both patient and therapist are actively avoiding contact, as was observed in some instances when the patient expressed sadness. Or, disengagement may be non-

interactive, so that there is a pulling into oneself with a complete disregard for the other. Variations of disengagement behaviors are resorted to when dyadic interaction is experienced as emotionally unsafe and invalidating. In this case, the expression of particular affects by the patient are not met with a receptivity or validation that allows for a feeling of safe containment. Interestingly, we have found that dysregulated states involve more mutual engagement in the expression of anger as opposed to feelings of sadness and fear, where more disengagement behaviors are observed. In contrast, regulated interactions show more disengagement behavior in the context of anger, with more engagement with the affect states of fear and sadness. This makes sense in terms of behaviors that serve to promote overall cohesion and security versus behaviors that promote tension and detachment. Prolonged engagement in anger states can only serve to promote destruction of the bonds between the patient and therapist.

Specific nonverbal behaviors are a part of a larger circular process of meaning making that both provide a context for higher level, symbolic communication, and are also the product of that communication. While it was not the goal of this study to empirically parse out the cause and effect relationships between the nonverbal components that create an affectively regulated interaction and the verbal communication that accompanies them, without these nonverbal behaviors, the full meaning of verbal communication would not be expressed. At the same time, nonverbal interactions do not have general meanings, beyond the affective contexts in which they take place.

Affect Distribution Between Alliance Levels

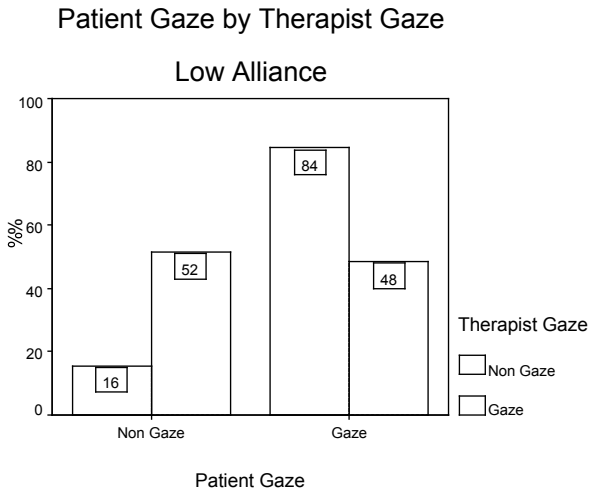
The predominant patient affect tone found in low alliance segments was anger, whereas high alliance segments consisted of patients feeling mostly sad and fearful. This suggests that patients were able to express these more vulnerable affects in high alliance sessions, whereas, expression of anger contributed to negative interaction in the low alliance segments. It is important to note that this does not mean that anger is not an important part of a productive therapeutic process – we cannot really address this issue in this analysis because we have not looked at therapeutic outcome. Because we are capturing a moment in the therapeutic process, we do not know whether these segments become regulated over time, thus potentially leading to a stronger, more coherent alliance. We can mostly address the moment-by-moment engagement and in an attempt to identify regulated versus dysregulated interactions.

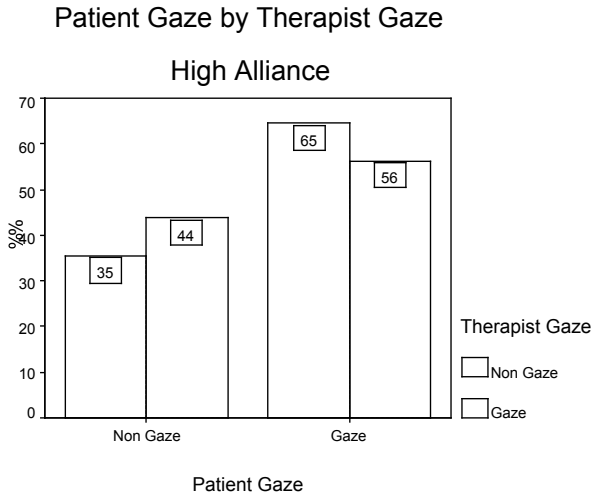
The nonverbal interactions that occur with these affect states show interesting patterns of interaction. The theory of subsymbolic processing suggests that these nonverbal interactions are out of awareness for both patient and therapist, and are actively creating the affective environment. In this sense, the more molar affect codes are attempting to capture the meaning of these nonverbal interactions. Nonverbal behaviors are the foundation in which these emotional communications take place. The same patient feeling states in low versus high alliance segments are made up of different types of nonverbal interactions. Overall, in spite of negative, more vulnerable affect states that are expressed in high alliance segments, there is a process of affect regulation occurring in these segments that is not taking place in low alliance segments. Regulation in this

sense is defined in terms of empathic responsiveness that allows for safe expression of specific emotional states. While one function of verbal communication is to express feeling states, nonverbal interactions are the mechanism for creating the tenor of this communication.

Gaze Behaviors

Figure 3:





Overall, patient gaze and therapist gaze tends to be complementary in nature, when affect ratings or alliance levels are not taken into account. This is in keeping with speaker and listener roles, where listeners tend to gaze towards their listener, and speakers tend to gaze away. (Duncan and Fiske, 1977). When looking at gaze behaviors in low alliance segments, this turn-taking gaze pattern was found as well. In contrast, this

was not the case for high alliance segments, where no particular gaze pattern was found. This suggests that the function of gaze in low alliance sessions takes on a particular role in communication. Gaze aversion serves to signal an active alternation between avoidance and "checking-in" while the other is looking away, creating an active form of disengagement. Thus low alliance dyads engage in more patterned, rigid interactions, allowing for fewer opportunities for adaptive responsiveness. In high alliance segments, a regulated interaction results in no particular pattern of gaze. This difference also highlights a higher degree of variability of gaze behaviors within the high alliance dyad, so that there is more flexibility in responsiveness, allowing for the expression of a variety of gaze responses that are more suitable for the momentary feelings being expressed.

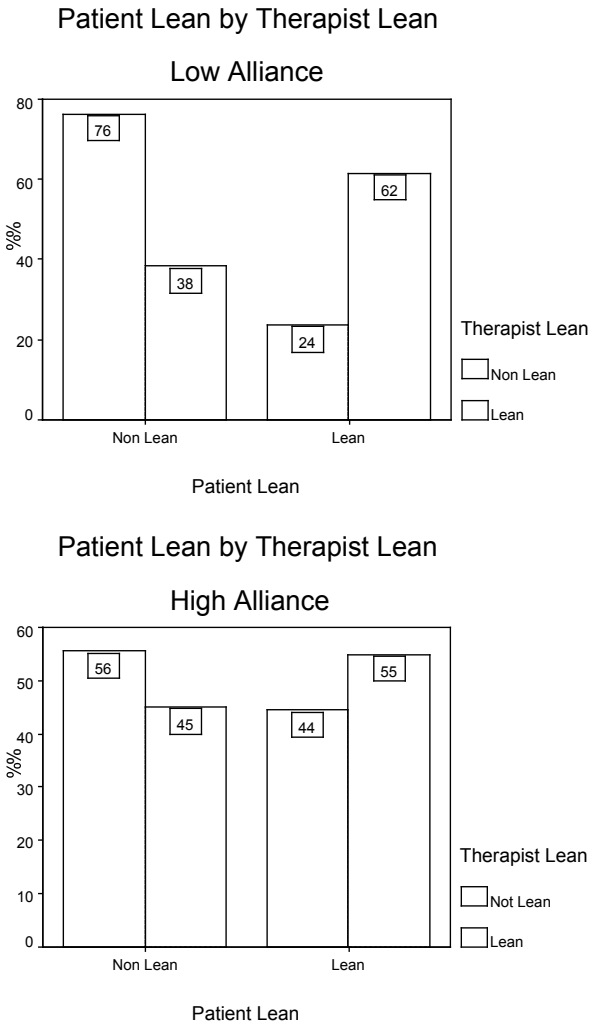
However, when various affective states are taken into account, more specific patterns of gaze are observed in both low alliance and high alliance segments. In the context of various affect ratings, gaze can be either complementary or reciprocal, meaning that with some feeling states, different gaze behaviors are displayed, depending on the quality of the alliance between the patient and therapist. In low alliance segments, patient gaze behaviors significantly interacted with therapist and patient affect ratings. In other words, patient gaze behavior was responsive to both their own internal feeling states and to the feeling states of their therapists. This suggests that in low alliance segments there was more interpersonal awareness. Patients may have felt the need to have increased attunement to the affective expressions of their therapist because of the insecure alliance between them. In contrast, in high alliance segments, patient's pattern of gaze is highly sensitive to their own affective states, but only mildly influenced by

therapist affective states, suggesting that in high alliance interactions, patients are more internally focused.

Overall, therapist affect ratings have a relatively larger influence on patient gaze behavior than patient affect ratings do on therapist gaze behavior. That is, therapists generally tend to gaze towards their patients no matter what. From this we can come to at least two conclusions: when any variation from this kind of pattern is observed, it takes on special significance, and in general, the contingency of gaze interaction between patient and therapist is not as responsive as other nonverbal behaviors. The affect state that had the most interactive influence on therapist gaze behavior was anger. When patients were angry, therapists tended to look away more, accounting largely for the turn-taking gaze behavior that was noted to take place in low alliance segments. In spite of this being the only significant area of interaction in gaze behavior, it is important to keep in mind that variations in patient gaze behavior alone also gives us important information about the quality of affect regulation that is taking place.

Lean Behaviors

Figure 4:

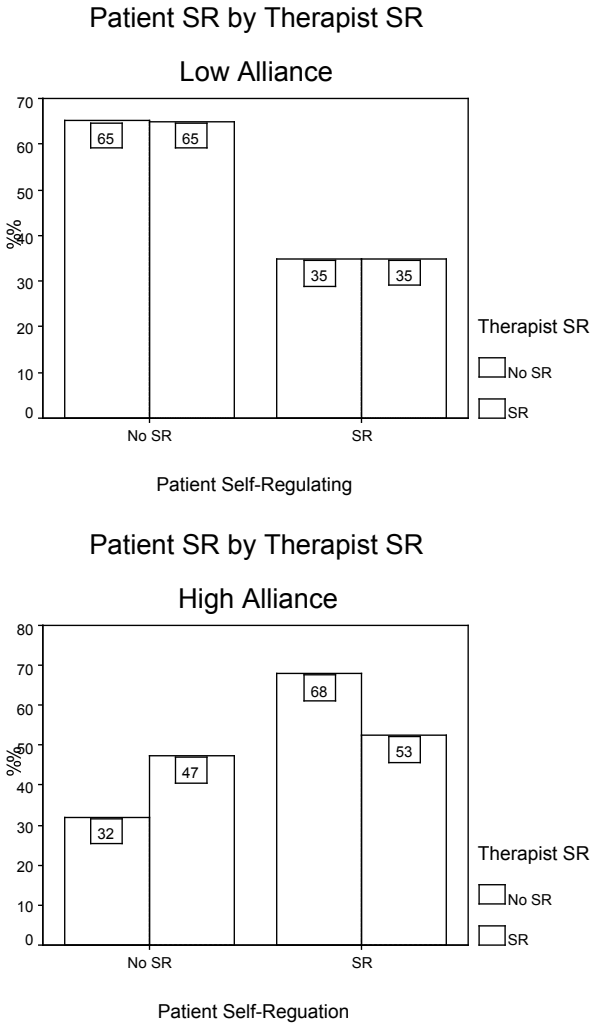


Overall, patients and therapists tend to mirror leaning behaviors. Generally, patients and therapists tend to lean towards each other in high alliance segments and away from each other in low alliance segments. However, different lean patterns were observed in the context of various affect states. Additionally, in contrast to gaze behaviors, patients and therapist lean behaviors are extremely responsive to the affect

states of their partners, proving to be a strong indicator of engaging or disengaging interactions. In fact, both therapist affect ratings and patient affect ratings are significantly associated with specific lean behaviors that are unique to low alliance and high alliance segments. That is, there is a significant interaction between affect ratings and lean behaviors that can be clearly identified. For example, when patients and therapists were rated as sad in low alliance segments they tended to mirror each other in leaning away behavior, whereas in high alliance segments, both patient and therapist tended to lean forward. In low alliance segments, when patient or therapist affect was rated fearful, they tended to lean back, with their partners leaning forward, in a complementary lean pattern. In high alliance segments, patients tend to not lean forward in response to therapist fear while therapists still lean forward in response to patients fear.

Self-Regulating Behaviors

Figure 5:



Generally, SR behaviors, like gaze behaviors, tend to occur in a complementary, turn-taking fashion. Also, therapists express more SR behaviors in low alliance segments than patients do, whereas in high alliance segments, they express significantly less than patients do. Various patterns of SR behavior were discriminated between alliance levels

and affect ratings. Within low alliance segments, patient and therapist affect ratings of sadness and anger have similar impact on their partners SR behaviors. Both patient and therapist will emit more SR behaviors in low alliance segments when their partners are rated as sad or angry. Interestingly, in high alliance segments, only patients will increase their SR behavior in response to therapist sadness, while therapist SR behaviors in response to patient sadness is not significant. This is likely the factor that allows patients to comfortably express their anger. Self-regulating behaviors expressed by the therapist can take on the function of expressing discomfort and inability to manage and respond to what the patient is expressing. In the case of patient sadness, the therapist shows an ability to "sit comfortably" with the feelings with the need to resort to their own self-regulatory state. Similarly, patient's expression of anger does not have any significant impact on self-regulating behaviors in high alliance segments for patient or therapist. This is another example of there being more contingent patterns of behavior in low alliance segment than in high alliance segments. It also indicates that therapists reduction in SR behaviors in high alliance segments serve to enhance the regulating environment.

Low Alliance versus High Alliance Sessions Compared within Patient Affect States

Some generalizations can be made about low alliance and high alliance segments. In low alliance segments, differences in patient gaze behavior tends to be significantly patterned, whereas therapist gaze behaviors tended not to adhere to any particular pattern; therapists tend to look towards their patients a majority of the time. In low alliance segments, patients and therapists tend to engage in turn taking gaze behaviors, while in

high alliance segments, no particular gaze pattern was noted. Also, low alliance segments are distinguished from high alliance segments in that in low alliance segments, patient and therapist generally tend mirror each others non-lean behaviors more so than in high alliance segments. In high alliance segments, patient and therapist tend to lean towards each other. Finally, when not taking affect into account, no particular pattern of self-regulating behaviors was noted in low alliance segments, whereas in high alliance segments, patient and therapist tended to engage in turn taking behaviors.

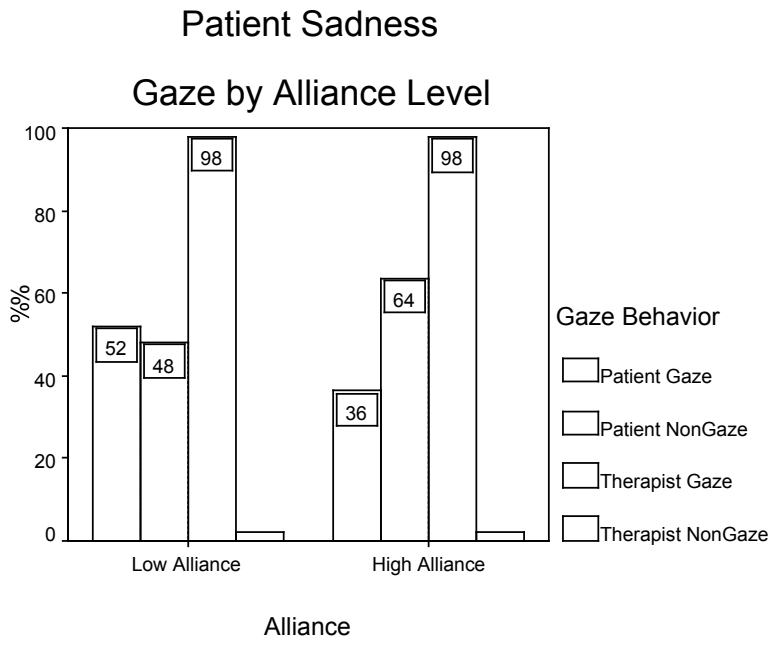
Again when not taking affect into account, and only looking at nonverbal behaviors between alliance levels, more patterned interactions in gaze and lean behaviors are observed in low alliance segments , suggesting a rigidity and decreased variability in interactive behaviors. This parallels the mother-infant literature and attachment literature that shows dysregulated interactions as characterized by rigid patterns of behavior and less flexible responsiveness to each other. This could also be considered a constriction in range of available behaviors, so that generally, intimate interactions tend to take on a general form, no matter who the particular person is at the other end of the interaction. In contrast, high alliance segments tend to show more variability in behaviors, which suggests more possibilities of responsiveness on both the patients and therapists part.

However, beyond these generalizations, specific variations were found according to affective context and alliance level that will be integrated below. The goal here is to describe what variations exist in low versus high alliance segments, in order to then inform us about the overall quality of affect regulation in a dyadic interaction with poor versus excellent rapport. Differences in behaviors across feeling states within each

alliance rating indicates that the nonverbal behavior takes on particular meanings and functions, given the affect they are occurring in. There is not one particular kind of behavioral pattern to describe low versus high alliance sessions, but many variations of behaviors that make up regulated versus dysregulated interactions.

Patient Sadness

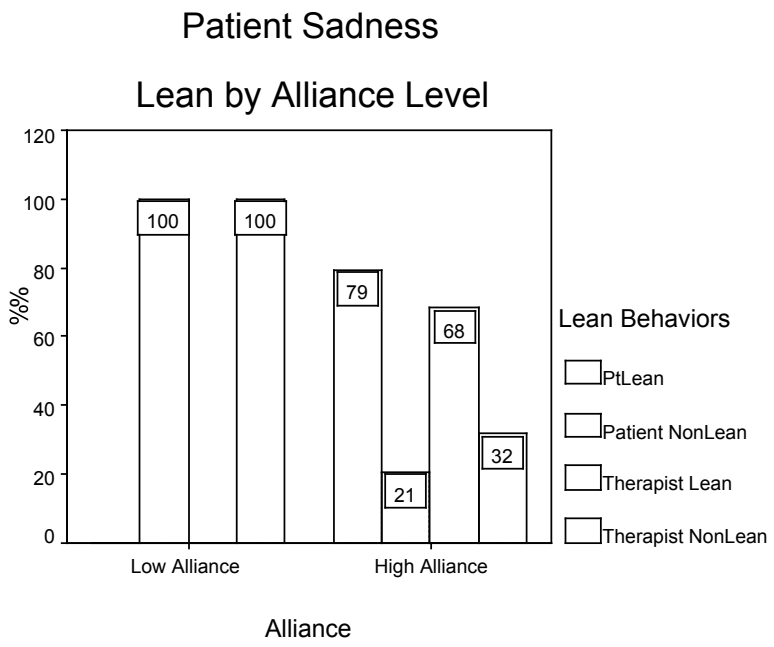
Figure 6:



Patient sadness was the only affect rating that differentiated patient gaze behavior between low and high alliance segments. Patients rated as sad in high alliance segments were more likely to look towards their therapist whereas in low alliance there is no significant impact of patient sadness rating. Within low alliance interactions, the

established gaze pattern was not strong, with the therapist tending to gaze towards the patient, with the patient responding in no particular way. Other affect states influenced patient gaze behavior, but were not able to differentiate gaze behaviors between alliance levels. That is, gaze was found to be significantly influenced by patient affect states, above and beyond alliance rating. This highlights patient sadness as a feeling state that is regulated by patient visual engagement with the therapist, as the therapist tends to return the patients gaze to this affect as well.

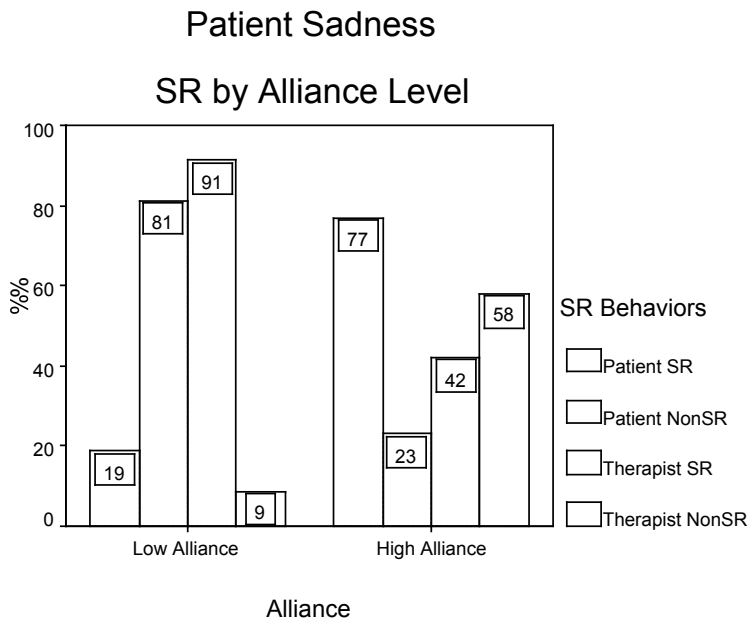
Figure 7:



In low alliance segments, when a patient is feeling sad, both patient and therapist will not lean towards each other, while in high alliance segments patients and therapists

tend to lean forward. Patient and therapist distance themselves in an active signal of disengagement. This suggests that the patient does not feel safe to express sadness in an interactive environment, and is pulling into a self-regulatory mode. The therapist in this instance is not able to provide the receptive and validating container for the patient's sad feelings. In the high alliance interaction, an active regulation is occurring between patient and therapist so that they are engaged in processing this feeling. The forward lean by the therapist is communicating a receptivity of the patient's experience, and the forward lean by the patient indicates that the patient feels a sense of safety in expressing these vulnerable feelings.

Figure 8:



When patients are observed to be sad, they tend to refrain from self-regulatory behaviors in low alliance segments, while therapists actively engage in SR behaviors. In one sense this is counter-intuitive; if the patient is unable to rely on the mutual dyadic process for comfort, it would seem more likely that he or she would engage in some sort of self-soothing behaviors, as this is what is found repeatedly in the mother-infant literature. However, the lack of self-regulatory behavior on the part of the patient, when feeling this vulnerable emotion may refer more to kind of stilling or "freezing" effect. This is an overall affective constriction that is also observed in infants in a helpless state. Inhibition of self-regulating behaviors may serve to actively prevent the communication of vulnerability that he or she is actually feeling. On the therapists part, the high expression of self-regulatory behaviors serves to communicate a level of discomfort with the patient's sadness, not allowing for a safe containment of this feeling state. In contrast, in high alliance segments, the patient expresses significantly more self-regulating behaviors, while the therapist expresses significantly fewer self-regulating behaviors. In this interaction, SR behaviors function as a way of revealing vulnerable feeling states. The therapist inhibition of SR behaviors serves to enhance the safety of the environment, communicating a receptivity or emotional readiness for the patient's sad feelings.

Vignette I: Patient Sad – Low Alliance Session

Though the therapist has a very soft, supportive tone, she is not really addressing the patients concern that she will not get the help she is looking for in therapy. The patient sites her experiences and comments of her friends, as an attempt to get reassurance from the therapist, but does not ask for reassurance directly. The therapist responds that the patient is pushing herself from "outside" standards, as opposed to her own. The patient reports that her friends suggest that it is hard to get what you need in therapy, that it takes time, and sometime it never happens. The patient then moves on to criticizing her self, that she is not trying hard enough. Overall, the therapist does not directly address the patients concerns. The patient then expresses concerns about revealing her vulnerability to others. Overall, this implies an environment where the patient is not feeling safe in sharing her vulnerable feelings.

Consistent with the above description, visually one can observe a compromise in the rapport as well. Both the patient and therapist are actively leaning away from each other, with the patient looking away frequently as well. The therapist is visibly holding herself in a tense state, and moving her hands together, while the patient looks frozen in her position.

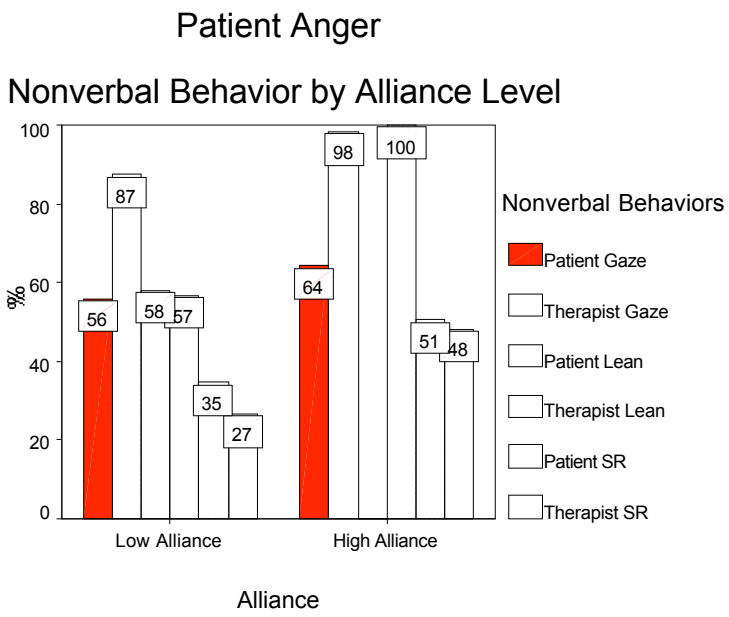
Vignette II: Patient Sad – High Alliance Session

The patient is sharing how she feels different, "not really from the norm" of others, when describing her relationship with her friends. This leads her to the feeling that there is something wrong with her. However, she struggles back and forth between feeling wrongly criticized and feeling deserving of those critiques. The therapist points out that when she highlights how critical family and friends can be, patient herself feels criticized. That all of the anger and disappointment she has expressed towards her family gets "washed away". The patient ultimately can't let herself have her own negative feelings towards family and friend because she needs to protect them. The patient doesn't quite understand this interpretation. However, the therapist is struggling to stay with the patient's affective state, and make herself understood. She asks questions when she is not understanding the patient's meaning, attempting to really comprehend the patients experience.

The nonverbal interactions in this session are significantly different than the once described previously. Both the therapist and patient are leaning towards each other, and the patient is regarding the therapist significantly more. The therapist also appears more relaxed, and is engaging in fewer self-touching behaviors.

Patient Anger

Figure 9:



Anger was the most prevalent patient affect rating in the low alliance segments. Patient anger impacted gaze behavior significantly, and is associated with a complementary gaze interaction so that patients tended to gaze towards their therapist while their therapist tended to look away more so in the context of anger than in the context of any other affect state. Note that this is the only affect state in which therapists looked away from their patients for at least part of the time, highlighting the importance of this pattern of gaze behavior. Therapist visual disengagement while their patients looked towards them indicates a sense of non-receptivity, even disapproval, of the patient's angry state. The turn-taking gaze behaviors also indicate that patients are checking in when the therapist looks away, implying an unsafe tone in the interaction. In

high alliance segments, patients tend to look towards their therapists more and therapists are able to indicate their acceptance of the patient's anger state with their steady visual regard. This provides a more receptive, regulating environment for the patient's expression of anger.

When patients in low alliance segments were observed to be angry, both patient and therapist are significantly more likely to lean forward into each other. This suggests a higher degree of engagement or "hostile" engagement around the patient's anger might serve to fuel its expression and extend its duration, serving a dysregulating function. In contrast, when patients were observed to be angry in high alliance segments, in 100% of the lean behaviors, patients leaned back while therapists leaned forward. In terms of regulatory function, therapist lean here indicates an important acceptance of and interest in the patient's anger state, while patients lean away indicates a compensatory measure that makes the expression of anger more modulated and acceptable. It reduces the intensity of expression, allowing for a degree of comfort and safety with this feeling state.

When patients are feeling angry, in low alliance interactions they also tend to not emit self-regulating behaviors, while therapists refrain as well, in a mirroring pattern. This is likely to be dysregulating in the sense that neither patient nor therapist are sharing distress states as much as maintaining a hostile engagement around anger. They are actively not sharing in their vulnerability, but engaging in antagonism. In contrast, in high alliance segments, patient and therapist SR expression took on no meaningful pattern. This highlights the importance of refrain of self-regulatory behaviors in the maintenance of anger between patient and therapist. Here, in the low alliance segments, the expression

of self-regulatory behaviors might reveal to the other a sense of vulnerability that neither feels comfortable engaging in. It also further supports that increased flexibility is seen much more so in high alliance segments than in low alliance segments.

Vignette III: Patient Anger – Low Alliance

The therapist reviews the litany of complaints that he believes the patient has about him, e.g. that he wasn't dynamic enough, open enough, etc. He both tries to give room for her disappointment, and also identifies her own desire for a certain kind of therapist that he could not fulfill. In other words, if he had been the way she wanted him to be, she would have been satisfied. The patient states that she didn't necessarily have a preconceived notion of what she wanted, and even if she did, she didn't feel that this is what she necessarily needed in order to benefit from the treatment. The therapist struggles to probe about why this therapy didn't work out and why they could overcome their problems. The patient is hesitant to engage even in this discussion, but eventually admits that the therapist wasn't dynamic enough, or aggressive enough, and that he should have addressed this problem in their relationship previously.

Nonverbally, both patient and therapist appear embroiled. Both are leaning in towards each other, and staring at each other intensely, while maintaining quite still. They both visually appear annoyed, and sound annoyed as they speak.

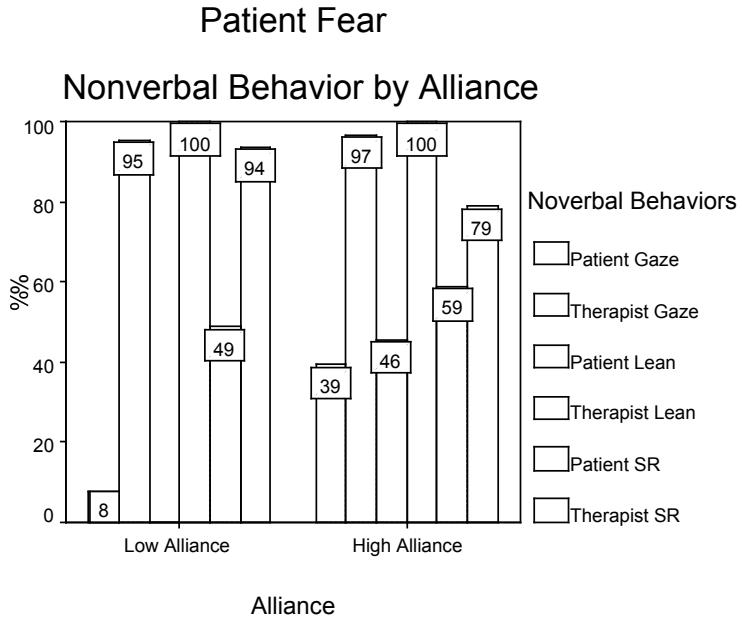
Vignette IV: Patient Anger – High Alliance

The patient has an irritated quality that is not directed towards the therapist per se. She reports feeling overwhelmed by the job of taking care of her daughter, and how her own needs are pushed to the side. This also accounts for why she was late for their therapy appointment. The therapist highlights this as an issue about the patient's difficulty with setting and maintaining her priorities. In general, the patient agrees with him about this, that what she would like to do over the summer is ride her bike and read novels, but that she would not allow herself to do this because it is too "banal".

The patient shows more range in affect, with an observable back and forth visually. The therapist tends to look towards her. Both patient and therapist are not leaning towards each other, and the patient is engaging in some self-touching behaviors that appear to take on the function of self-soothing.

Patient Fear

Figure 10:



In low alliance segments, when patients were observed to be afraid, they showed very strong patterns of gaze avoidance in response to therapists gaze towards them. Gaze avoidance here indicates a feeling of insecurity, and an attempt by the patient to disengage from the interaction completely. Patients were able to have more visual engagement in high alliance segments, revealing a sense of trust with sharing their fear. Therapists here also continue to engage visually, showing a degree of visual receptivity.

In low alliance segments, with the patient's expression of fear, again in all instances, the patient leaned away from the therapist and the therapist leaned into the patient. This pattern of engagement proved to be highly destabilizing and dysregulating. It is also strikingly similar to the avoidant infant pulling away while the mother looms in.

In both instances an unsafe environment is perpetuated. The patient is unable to safely share his or her feelings of fear in the face of the therapist's intense physical presence. Interestingly, the therapist maintains this stance in the high alliance segments, with the patients lean behavior showing more variability. The patient does tend to not lean forward here as well, but there is significantly more variability in the patient's behavior. In the high alliance segment, the therapist's lean must be taken as interest and acceptance as opposed to a threatening behavior. Additionally, there are likely other behaviors occurring that serve to mediate the therapist lean position. This will be discussed further below.

Finally, when patients are noted to feel afraid, in low alliance segments they are just as likely to emit SR behaviors as not, with no particular interactive pattern noted. Therapists, however, emit a high degree of SR behaviors, most likely indicating an extreme level of discomfort in the face of their patient's fear. This appears to have a dysregulating impact. Interestingly, similar behaviors were noted in the high alliance segments, with the patient emitting somewhat more SR behaviors in response to the therapist SR behaviors. This points to more engagement between patient and therapist around this feeling state, providing an interpersonal arena for its expression. In low alliance segments, the patient's indiscriminant expression reveals a lack of interactive engagement, thus no way for fear to be mutually addressed.

Patient fear had a significant impact on all three nonverbal behaviors that created a complementary interaction in gaze, lean and SR behaviors. Specifically, patients tended to look away, lean away and emit SR behaviors, while therapists tended to look towards,

lean forward and also emit SR behaviors. This kind of therapist engagement – patient withdrawal promoted a dysregulated affective environment. Therapist engagement in SR behaviors does not allow for the containment of fearful affect. In fact, these behaviors are similar to the high alliance segments except that there, neither the patient nor the therapist engaged in SR behaviors, making the interaction more dyadically engaged and contained. This is an example of how disengagement in one kind of nonverbal behavior compensates for active interaction of other nonverbal behaviors.

Vignette V: Patient Fear – Low Alliance

The therapist expresses hopelessness because she doesn't know what to say to get through to the patient. She feels like the patient has a "wall up", and the patients takes this comment to be critical. He then elaborates that there is constructive criticism, and criticism that is meant to be harmful. The therapist then goes on to say that she feels like the patient is protecting her from his own bad feelings, anger in particular. She does not follow the patient's lead and go on to question whether he feels she would like to intentionally harm him. He reveals that he feels judged by her, in his comparison of her as a teacher who might give him a D on a paper.

Nonverbally, both patient and therapist are engaged in the pursuer – pursued pattern, with the therapist leaning forward, the patient leaning away. The patient barely regards the therapist at all, while the therapist holds a steady gaze. Both are engaged in self-touching behaviors. The patient appears overstimulated by the therapist's intensity.

Vignette VI: Patient Fear – High Alliance

The patient is sharing more vulnerable feelings about being confused. Thinking about his father is painful, and he's noticed that whenever he does, he thinks of his mother because she's more supportive, so it will "bring up his mood". The therapist then starts asking questions about why he missed session yesterday. The patient didn't have any thoughts about it, but therapist noted that when he told her he slept outside without a proper sleeping bag she had motherly concerns for him. She wondered if the patient focused on sharing this story to avoid any potential criticism from the therapist. The patient was not aware of this. She then goes on to ask him about any mixed feelings he might have about coming to therapy, as he was late tonight as well.

While the patient is still visually disengaged, he has some moments of less constriction in his affect. He continues to lean away but so does the therapist. He continues to rub his leg, but the therapist does not engage in any self-touching behaviors, and appears to be calmer.

Some Parallels with mother-infant dyadic interactions

In establishing patterns of behavior in well regulated versus dysregulated dyads, the mother-infant literature focuses mainly on the idea of responsivity and reciprocity of behaviors. In looking at this data, it is interesting to consider that non-significant patterns of behavior, are, in a sense, non-responsive patterns of behavior. This can be justified by the fact that patterns of nonverbal behavior do exist within some conditions, but not within others. There appear to be some parallels between patient – therapist nonverbal interactions and mother – infant interactions. As noted above, interactions in nonverbal behaviors in low alliance segments, when not broken down by affect states, tend to be more significantly patterned than nonverbal interactions in high alliance segments. This points to the rigidity of response that may be expressed in a negative interaction, while positive interactions are characterized by more variability in behaviors.

Within affect states, in dysregulated mother-infant interactions, when the mother is depressed, the infant will make some attempt at engagement, but will generally give up, with gaze avoidance, self-regulatory behaviors, and torso turned away. In our sample, patients in low alliance segments tended to show what might be considered a similar pattern of behaviors; when the therapist was rated as sad, patients would not gaze, not lean forward, and they would not exhibit any particular pattern of self-regulating behaviors. These behaviors generally fall under the rubric of disengagement. One may speculate that, as the infant feels there is no chance at repair of a broken interaction, the patient has turned inward, not trying to engage the therapist in interactive repair. In contrast, in a high alliance segment with therapist rated as sad, the patient is also turned away from the therapists gaze, but is leaning forward in response to the therapists lean and is exhibiting patterned, self-regulatory behaviors in response to the therapist not emitting these behaviors. In a successful mother-infant interaction, when the baby tries to engage a depressed mother, the babies attempts at engagement are responded to in kind, allowing for the connection to take place, and hopefully for the affect level to be raised to a positive one. Here with the patient and therapist, while the patient remains visually disengaged, the forward lean behaviors that are exhibited are mirrored by the therapist. Also, while the patient is actively engaging in SR behaviors, the therapist is not, promoting a more interactive stance.

It is also interesting to compare an example of nonverbal behavior interactions in the context of a negative patient affect, such as fear, in low versus high alliance segments, and compare this to mother-infant interactions. In a dysregulated interaction, mothers will

visually “loom in” on their infants, bring their body forward, while the infant will retreat both physically and visually. At the points where infants are unable to find some way of removing themselves from their mother’s intense physical presence, they will tend to dissociate by “seeing but not seeing”. In the patient – therapist interactions in low alliance segments where patients were judged as fearful, a similar observation could be made. While patients gazed away and did not lean forward, therapists gazed towards and leaned forward. This was also the only condition in which both patient and therapist engaged in self-regulating behaviors responsively, most likely to serve a self-soothing function that could not be obtained in the interaction itself. In the high alliance segments there were some similarities in that the patients were also more likely to look away, however, there was no significant gaze pattern by the therapist in response. This could be considered as visually non-responsive on the therapist’s part, but also as a less intrusive interaction. Additionally, lean behaviors were the same in that the patient was not leaning forward while the therapist was. The major difference appeared to be in the expression of self-regulating behaviors. Both the patient and the therapist did not emit SR behaviors, suggesting that even in the context of patient fear, there was a higher degree of interactive engagement.

Subsymbolic Processing

It is also hoped that understanding the nonverbal interaction that occurs on a moment-to-moment basis can demystify more traditional psychoanalytic concepts, and bridge them to more contemporary research in the neuropsychology of emotions. Containment, for example, could be the therapist not engaging in self-regulating

behaviors in response to the patient's experience of anxiety or fear. In another example, contagion could be the therapist and patients interactive expression of self-regulating behaviors in response to the patients fear, or mirrored lean behaviors in response to the patients anger. While a more literary description of these experiences can be useful in many ways, exploring these interactions on a visceral, bodily level opens the door to more empirical research.

The range of possible behaviors in infants and adults are vastly different, and change across development over time. It is difficult to say that there is a one-to-one correspondence between mother-infant and patient-therapist interactions. More, these findings suggest that there are patterns of nonverbal interactions that are more or less conducive to maintaining an affectively regulated versus dysregulated engagement. While it is interesting to speculate that interpersonal experience, either negatively or positively charged, beginning in infancy through adulthood, have an impact on our management of affect, and that is reflected in the subsymbolic, proprioceptive, nonverbal process, this study is unable to justify this broad hypothesis. However, this study can support the idea that there are meaningful differences in nonverbal interactions between high alliance and low alliance psychotherapies. Generally these interactions occur out of our awareness, but it is hoped that making them explicit will increase our awareness of the quality of engagement, our own contributions to it, and increased empathy and understanding for the patients subject state in the moment.

This study also shows that, consistent with theories of relational psychoanalysis, there is a specificity of dyadic response, supporting the idea that there are no universal

rules for regulation, but compensation and reciprocity within each dyad that does or does not allow for a regulated interaction to take place. Though these analyses look at one-to-one correspondence of each nonverbal behavior, larger patterns most likely exist between various nonverbal behaviors that show a convergence of interaction based on rules of mutual regulation versus self-regulating patterns. For example, engagement in one nonverbal behavior such as gaze, might be compensated for by disengagement in another, such as lean.

Identifying the nonverbal components of a dysregulated interaction gives us as therapists the opportunity to make an active intervention. This requires an active participation in the pattern, self-reflection on ones behaviors, and some ability to make a change. Views on the ability to impact this process vary widely. Fonagy states that this is a fundamental, subsymbolic process that cannot be changed explicitly, while others, such as Beebe and Knoblauch posit that once engaged in a pattern, a slow awareness of rhythm and process of interaction can become tools towards both understanding what is happening with the patient, and, making gradual changes in the quality of ones responses to the patient. A 'moment of meeting', according to Stern, the point at which "something more" than interpretation is taking place, may be the point at which a process of dysregulation becomes regulated in a way that becomes predictable to the patient. The patient may be joined by the therapist in negativity that moves from a disengaged towards an engaged state. It may by the promise of repair that is expressed through the rhythm and responsive contour of the other.

Critique of this study:

There are a number of areas where this study could be improved. Because of the constraints of the sample, it was not possible to have 20 different patient – therapist dyads. Instead, a number of the dyads had multiple sessions coded. It was decided that this option was preferable to lowering the criterion of definition for high alliance versus low alliance segments. In this study, it is defined WAI scores one standard deviation either above or below the mean. It would have been possible to obtain more independence in the dyads, but that would have required using sessions that were not rated as extremely. Because we are looking at patterns of behavior that are predicted to occur in either very well regulated or very dysregulated interactions, there was concern that this phenomenon would not be found by looking at more "middle of the road" sessions. However, the problem that is introduced is that each dyad might have artificially contributed to the patterns of behavior observed because those patterns are idiosyncratic to them, and not generalizable to poor versus high alliance interactions. Additionally, all behaviors were coded on a second by second measure, without consider the specific characteristics of each behavior. This was decided upon following the convention established in the mother-infant literature and some adult studies as well. However, there were some problems noted with this in that there is much more variability in gaze and self-regulatory behaviors than there are in lean behaviors, so that over a five minute segment, patients and therapists generally kept their lean position, while gaze and SR would change significantly. This may have artificially increased the power of effect observed in lean behavior interactions. In contrast, it may have been more appropriate to

use smaller units of measurement for gaze behaviors, as some studies use .5 to .25 measurements of gaze. This may account for the generally weak magnitude of effect observed in the gaze interactions.

Finally, gross affect judgments, while more economical in coding labor, are probably not the most useful or accurate way of capturing the moment-to-moment interaction within the therapeutic dyad. Affect states are capable of changing rapidly or, can remain constant and constricted. However, this form of coding was chosen because it was thought that identifying the mood state of the segment would be useful as a context for the nonverbal interaction. Additionally, this coding of affect on a moment-by-moment basis was considered to be beyond the scope and capabilities of this project.

Future research in this area

Future studies can address the flaws identified above. A large, prospective sample of patient – therapist dyads could be videotaped using two cameras to produce a split screen image. Given the current technology, it is possible to digitize these images and code gaze and lean behaviors using established software products. Also, affect coding software is available to apply well established affect coding systems to digital images, with variable segments of time.

Addendum 1: Cross Tabulations

Alliance – Affect Interactions

Table 31. Alliance x Patient Affect Cross Tabulation

			Patient Affect				Total
			Positive	**Sad**	**Anger**	**Fear**	
ALL	**Low**	Count	300	300	2100	300	3000
		% within ALLI	10.0%	10.0%	70.0%	10.0%	100.0%
		% within Patient Affect	33.3%	25.0%	87.5%	20.0%	50.0%
		Adjusted Residual	-10.8	-19.4	47.4	-26.8	
	High	Count	600	900	300	1200	3000
		% within ALLI	20.0%	30.0%	10.0%	40.0%	100.0%
		% within Patient Affect	66.7%	75.0%	12.5%	80.0%	50.0%
		Adjusted Residual	10.8	19.4	-47.4	26.8	
Total		Count	900	1200	2400	1500	6000
		% within ALLI	15.0%	20.0%	40.0%	25.0%	100.0%
		% within Patient Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 32. Alliance x Therapist Affect Cross Tabulation

			Therapist Affect				Total
			Positive	**Sad**	**Anger**	**Fear**	
ALL	Low	Count	1500	600	300	600	3000
		% within ALLI	50.0%	20.0%	10.0%	20.0%	100.0%
		% within Therapist Affect	50.0%	33.3%	100.0%	66.7%	50.0%
		Adjusted Residual	.0	-16.9	17.8	10.8	
	High	Count	1500	1200	0	300	3000
		% within ALLI	50.0%	40.0%	.0%	10.0%	100.0%
		% within Therapist Affect	50.0%	66.7%	.0%	33.3%	50.0%
		Adjusted Residual	.0	16.9	-17.8	-10.8	
Total		Count	3000	1800	300	900	6000
		% within ALLI	50.0%	30.0%	5.0%	15.0%	100.0%
		% within Therapist Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 33. Patient Affect x Patient Gaze x Lagged Therapist Gaze Cross Tabulation					
Lagged Therapist Gaze	**Patient Affect**		**Patient Gaze**		Total
			No	Yes	
No	**Positive**	Count	8	44	52
		% within Patient Affect	15.4%	84.6%	100.0%
		% within Patient Gaze	9.9%	13.8%	13.0%
		Adjusted Residual	-.9	.9	
	Sad	Count	7	18	25
		% within Patient Affect	28.0%	72.0%	100.0%
		% within Patient Gaze	8.6%	5.6%	6.3%
		Adjusted Residual	1.0	-1.0	
	Anger	Count	32	237	269
		% within Patient Affect	11.9%	88.1%	100.0%
		% within Patient Gaze	39.5%	74.3%	67.3%
		Adjusted Residual	-6.0	6.0	
	Fear	Count	34	20	54
		% within Patient Affect	63.0%	37.0%	100.0%
		% within Patient Gaze	42.0%	6.3%	13.5%
		Adjusted Residual	8.4	-8.4	
	Total	Count	81	319	400
		% within Patient Affect	20.3%	79.8%	100.0%
		% within Patient Gaze	100.0%	100.0%	100.0%
Yes	**Positive**	Count	223	621	844
		% within Patient Affect	26.4%	73.6%	100.0%
		% within Patient Gaze	8.4%	21.2%	15.1%
		Adjusted Residual	-13.3	13.3	
	Sad	Count	462	709	1171
		% within Patient Affect	39.5%	60.5%	100.0%
		% within Patient Gaze	17.5%	24.2%	21.0%
		Adjusted Residual	-6.2	6.2	
	Anger	Count	996	1125	2121
		% within Patient Affect	47.0%	53.0%	100.0%
		% within Patient Gaze	37.6%	38.4%	38.0%
		Adjusted Residual	-.6	.6	
	Fear	Count	966	475	1441
		% within Patient Affect	67.0%	33.0%	100.0%
		% within Patient Gaze	36.5%	16.2%	25.8%
		Adjusted Residual	17.3	-17.3	
	Total	Count	2647	2930	5577
		% within Patient Affect	47.5%	52.5%	100.0%
		% within Patient Gaze	100.0%	100.0%	100.0%

Table 34. Patient Affect x Lagged Therapist Gaze x Alliance Cross Tabulation					
Alliance Level	Patient Affect		Lagged Therapist Gaze		Total
			0	1	
Low Alliance	**Positive**	Count	23	276	299
		% within Patient Affect	7.7%	92.3%	100.0%
		% within Lagged Th Gaze	7.5%	10.3%	10.0%
		Adjusted Residual	-1.5	1.5	
	Sad	Count	6	293	299
		% within Patient Affect	2.0%	98.0%	100.0%
		% within Lagged Th Gaze	2.0%	10.9%	10.0%
		Adjusted Residual	-5.0	5.0	
	Anger	Count	264	1828	2092
		% within Patient Affect	12.6%	87.4%	100.0%
		% within Lagged Th Gaze	86.0%	68.2%	70.0%
		Adjusted Residual	6.5	-6.5	
	Fear	Count	14	285	299
		% within Patient Affect	4.7%	95.3%	100.0%
		% within Lagged Th Gaze	4.6%	10.6%	10.0%
		Adjusted Residual	-3.4	3.4	
	Total	Count	307	2682	2989
		% within Patient Affect	10.3%	89.7%	100.0%
		% within Lagged Th Gaze	100.0%	100.0%	100.0%
High Alliance	**Positive**	Count	29	569	598
		% within Patient Affect	4.8%	95.2%	100.0%
		% within Lagged Th Gaze	31.2%	19.6%	20.0%
		Adjusted Residual	2.7	-2.7	
	Sad	Count	19	878	897
		% within Patient Affect	2.1%	97.9%	100.0%
		% within Lagged Th Gaze	20.4%	30.3%	30.0%
		Adjusted Residual	-2.0	2.0	
	Anger	Count	5	294	299
		% within Patient Affect	1.7%	98.3%	100.0%
		% within Lagged Th Gaze	5.4%	10.1%	10.0%
		Adjusted Residual	-1.5	1.5	
	Fear	Count	40	1156	1196
		% within Patient Affect	3.3%	96.7%	100.0%
		% within Lagged Th Gaze	43.0%	39.9%	40.0%
		Adjusted Residual	.6	-.6	
	Total	Count	93	2897	2990
		% within Patient Affect	3.1%	96.9%	100.0%
		% within Lagged Th Gaze	100.0%	100.0%	100.0%

Table 35. Patient Affect x Patient Gaze x Alliance Cross Tabulation					
Alliance Level	Patient Affect		Patient Gaze		Total
			0	1	
Low Alliance	Positive	Count	87	213	300
		% within Patient Affect	29.0%	71.0%	100.0%
		% within Patient Gaze	6.1%	13.6%	10.0%
		Adjusted Residual	-6.8	6.8	
	Sad	Count	144	156	300
		% within Patient Affect	48.0%	52.0%	100.0%
		% within Patient Gaze	10.1%	9.9%	10.0%
		Adjusted Residual	.1	-.1	
	Anger	Count	923	1176	2099
		% within Patient Affect	44.0%	56.0%	100.0%
		% within Patient Gaze	64.5%	75.0%	70.0%
		Adjusted Residual	-6.3	6.3	
	Fear	Count	277	23	300
		% within Patient Affect	92.3%	7.7%	100.0%
		% within Patient Gaze	19.4%	1.5%	10.0%
		Adjusted Residual	16.3	-16.3	
	Total	Count	1431	1568	2999
		% within Patient Affect	47.7%	52.3%	100.0%
		% within Patient Gaze	100.0%	100.0%	100.0%
High Alliance	Positive	Count	145	454	599
		% within Patient Affect	24.2%	75.8%	100.0%
		% within Patient Gaze	11.1%	26.8%	20.0%
		Adjusted Residual	-10.7	10.7	
	Sad	Count	327	573	900
		% within Patient Affect	36.3%	63.7%	100.0%
		% within Patient Gaze	25.0%	33.8%	30.0%
		Adjusted Residual	-5.2	5.2	
	Anger	Count	107	193	300
		% within Patient Affect	35.7%	64.3%	100.0%
		% within Patient Gaze	8.2%	11.4%	10.0%
		Adjusted Residual	-2.9	2.9	
	Fear	Count	727	473	1200
		% within Patient Affect	60.6%	39.4%	100.0%
		% within Patient Gaze	55.7%	27.9%	40.0%
		Adjusted Residual	15.4	-15.4	
	Total	Count	1306	1693	2999
		% within Patient Affect	43.5%	56.5%	100.0%
		% within Patient Gaze	100.0%	100.0%	100.0%

Table 36. Patient Gaze x Patient Affect Cross Tabulation

			Patient Affect				Total
			Positive	Sad	Anger	Fear	
Patient Gaze	No	Count	232	471	1030	1004	2737
		% within Patient Gaze	8.5%	17.2%	37.6%	36.7%	100.0%
		% within Patient Affect	25.8%	39.3%	42.9%	66.9%	45.6%
		Adjusted Residual	-12.9	-5.0	-3.4	19.1	
	Yes	Count	667	729	1369	496	3261
		% within Patient Gaze	20.5%	22.4%	42.0%	15.2%	100.0%
		% within Patient Affect	74.2%	60.8%	57.1%	33.1%	54.4%
		Adjusted Residual	12.9	5.0	3.4	-19.1	
Total		Count	899	1200	2399	1500	5998
		% within Patient Gaze	15.0%	20.0%	40.0%	25.0%	100.0%
		% within Patient Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 37. Lagged Therapist Gaze x Patient Affect Cross Tabulation

			Patient Affect				Total
			Positive	Sad	Anger	Fear	
Lagged Therapist Gaze	No	Count	52	25	269	54	400
		% within Lagged Th Gaze	13.0%	6.3%	67.3%	13.5%	100.0%
		% within Patient Affect	5.8%	2.1%	11.3%	3.6%	6.7%
		Adjusted Residual	-1.2	-7.1	11.5	-5.5	
	Yes	Count	845	1171	2122	1441	5579
		% within Lagged Th Gaze	15.1%	21.0%	38.0%	25.8%	100.0%
		% within Patient Affect	94.2%	97.9%	88.7%	96.4%	93.3%
		Adjusted Residual	1.2	7.1	-11.5	5.5	
Total		Count	897	1196	2391	1495	5979
		% within Lagged Th Gaze	15.0%	20.0%	40.0%	25.0%	100.0%
		% within Patient Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 38. Alliance x Lagged Therapist Gaze x Patient Gaze Cross Tabulation				
			Lagged Therapist Not Gazing	**Lagged Therapist Gazing**
Low Alliance	**Patient Not Gaze**	Count	48	1381
		% w/i Patient Gaze	3.4%	96.6%
		% w/i Lagged Therapist Gaze	15.6%	51.5%
		Adjusted Standardized Residual	-11.9	11.9
	Patient Gazing	Count	259	1300
		% w/i Patient Gaze	16.6%	83.4%
		% w/i Lagged Therapist Gaze	84.4%	48.5%
		Adjusted Standardized Residual	11.9	-11.9
High Alliance	**Patient Not Gazing**	Count	33	1266
		% w/i Patient Gaze	2.5%	97.5%
		% w/i Lagged Therapist Gaze	35.5%	43.7%
		Adjusted Standardized Residual	-1.6	1.6
	Patient Gazing	Count	60	1630
		% w/i Patient Gaze	3.6%	96.4%
		% w/i Lagged Therapist Gaze	64.5%	56.3%
		Adjusted Standardized Residual	1.6	-1.6

Table 39. Lagged Therapist Gaze x Alliance Cross Tabulation			
		Low Alliance	**High Alliance**
Lagged Therapist Not Gazing	Count	307	93
	% w/i Lagged Therapist Gaze	76.8%	23.3%
	% w/i Alliance	10.3%	3.1%
	Adjusted Standardized Residual	11.1	-11.1
Lagged Therapist Gazing	Count	2682	2897
	% w/i Lagged Therapist Gaze	48.1%	51.9%
	% w/i Alliance	89.7%	96.9%
	Adjusted Standardized Residual	-11.1	11.1

Table 40. Patient Gaze x Lagged Therapist Gaze Cross Tabulation			
		Lagged Therapist Not Gazing	**Lagged Therapist Gazing**
Patient Not Gazing	Count	81	2647
	% w/i Patient Gaze	3.0%	97.0%
	% w/i Lagged Therapist Gaze	20.3%	47.5%
	Adjusted Standardized Residual	-10.6	10.6
Patient Gazing	Count	319	2930
	% w/i Patient Gaze	9.8%	90.2%
	% w/i Lagged Therapist Gaze	79.8%	52.5%
	Adjusted Standardized Residual	-10.6	-10.6

Table 41. Patient Gaze x Alliance Cross Tabulation			
		Low Alliance	**High Alliance**
Patient Not Gazing	Count	1431	1306
	% w/i Patient Gaze	52.3%	47.7%
	% w/i Alliance	47.7%	43.5%
	Adjusted Standardized Residual	3.2	-3.2
Patient Gazing	Count	1568	1693
	% w/i Patient Gaze	48.1%	51.9%
	% w/i Alliance	52.3%	56.5%
	Adjusted Standardized Residual	-3.2	3.2

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Table 42. Therapist Affect x Patient Gaze x Lagged Therapist Gaze Cross Tabulation					
Lagged Therapist Gaze	Therapist Affect		Patient Gaze		Total
			No	Yes	
No	Positive	Count	35	83	118
		% within Therapist Affect	29.7%	70.3%	100.0%
		% within Patient Gaze	43.2%	26.0%	29.5%
		Adjusted Residual	3.0	-3.0	
	Sad	Count	29	19	48
		% within Therapist Affect	60.4%	39.6%	100.0%
		% within Patient Gaze	35.8%	6.0%	12.0%
		Adjusted Residual	7.4	-7.4	
	Anger	Count	9	78	87
		% within Therapist Affect	10.3%	89.7%	100.0%
		% within Patient Gaze	11.1%	24.5%	21.8%
		Adjusted Residual	-2.6	2.6	
	Sad	Count	8	139	147
		% within Therapist Affect	5.4%	94.6%	100.0%
		% within Patient Gaze	9.9%	43.6%	36.8%
		Adjusted Residual	-5.6	5.6	
	Total	Count	81	319	400
		% within Therapist Affect	20.3%	79.8%	100.0%
		% within Patient Gaze	100.0%	100.0%	100.0%
Yes	Positive	Count	1363	1506	2869
		% within Therapist Affect	47.5%	52.5%	100.0%
		% within Patient Gaze	51.5%	51.4%	51.4%
		Adjusted Residual	.1	-.1	
	Sad	Count	980	766	1746
		% within Therapist Affect	56.1%	43.9%	100.0%
		% within Patient Gaze	37.0%	26.1%	31.3%
		Adjusted Residual	8.7	-8.7	
	Anger	Count	43	169	212
		% within Therapist Affect	20.3%	79.7%	100.0%
		% within Patient Gaze	1.6%	5.8%	3.8%
		Adjusted Residual	-8.1	8.1	
	Fear	Count	261	489	750
		% within Therapist Affect	34.8%	65.2%	100.0%
		% within Patient Gaze	9.9%	16.7%	13.4%
		Adjusted Residual	-7.5	7.5	
	Total	Count	2647	2930	5577
		% within Therapist Affect	47.5%	52.5%	100.0%
		% within Patient Gaze	100.0%	100.0%	100.0%

Table 43. Therapist Affect x Patient Gaze x Alliance Cross Tabulation					
Alliance Level	Therapist Affect		Patient Gaze		Total
			No	Yes	
Low Alliance	Positive	Count	799	700	1499
		% within Therapist Affect	53.3%	46.7%	100.0%
		% within Patient Gaze	55.8%	44.6%	50.0%
		Adjusted Residual	6.1	-6.1	
	Sad	Count	421	179	600
		% within Therapist Affect	70.2%	29.8%	100.0%
		% within Patient Gaze	29.4%	11.4%	20.0%
		Adjusted Residual	12.3	-12.3	
	Anger	Count	52	248	300
		% within Therapist Affect	17.3%	82.7%	100.0%
		% within Patient Gaze	3.6%	15.8%	10.0%
		Adjusted Residual	-11.1	11.1	
	Fear	Count	159	441	600
		% within Therapist Affect	26.5%	73.5%	100.0%
		% within Patient Gaze	11.1%	28.1%	20.0%
		Adjusted Residual	-11.6	11.6	
	Total	Count	1431	1568	2999
		% within Therapist Affect	47.7%	52.3%	100.0%
		% within Patient Gaze	100.0%	100.0%	100.0%
High Alliance	Positive	Count	604	895	1499
		% within Therapist Affect	40.3%	59.7%	100.0%
		% within Patient Gaze	46.2%	52.9%	50.0%
		Adjusted Residual	-3.6	3.6	
	Sad	Count	591	609	1200
		% within Therapist Affect	49.3%	50.8%	100.0%
		% within Patient Gaze	45.3%	36.0%	40.0%
		Adjusted Residual	5.1	-5.1	
	Anger	Count	111	189	300
		% within Therapist Affect	37.0%	63.0%	100.0%
		% within Patient Gaze	8.5%	11.2%	10.0%
		Adjusted Residual	-2.4	2.4	
	Total	Count	1306	1693	2999
		% within Therapist Affect	43.5%	56.5%	100.0%
		% within Patient Gaze	100%	100%	100%

Table 44. Patient Gaze x Therapist Affect Cross Tabulation							
			Therapist Affect				Total
			Positive	**Sad**	**Anger**	**Fear**	
Patient Gaze	No	Count	1403	1012	52	270	2737
		% within Patient Gaze	51.3%	37.0%	1.9%	9.9%	100.0%
		% within Therapist Affect	46.8%	56.2%	17.3%	30.0%	45.6%
		Adjusted Residual	1.8	10.8	-10.1	-10.2	
	Yes	Count	1595	788	248	630	3261
		% within Patient Gaze	48.9%	24.2%	7.6%	19.3%	100.0%
		% within Therapist Affect	53.2%	43.8%	82.7%	70.0%	54.4%
		Adjusted Residual	-1.8	-10.8	10.1	10.2	
Total		Count	2998	1800	300	900	5998
		% within Patient Gaze	50.0%	30.0%	5.0%	15.0%	100.0%
		% within Therapist Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 45. Lagged Therapist Gaze x Therapist Affect Cross Tabulation							
			Therapist Affect				Total
			Positive	**Sad**	**Anger**	**Fear**	
Lagged Therapist Gaze	No	Count	118	48	87	147	400
		% within Lagged Th Gaze	29.5%	12.0%	21.8%	36.8%	100.0%
		% within Therapist Affect	3.9%	2.7%	29.1%	16.4%	6.7%
		Adjusted Residual	-8.5	-8.1	15.9	12.6	
	Yes	Count	2871	1746	212	750	5579
		% within Lagged Th Gaze	51.5%	31.3%	3.8%	13.4%	100.0%
		% within Therapist Affect	96.1%	97.3%	70.9%	83.6%	93.3%
		Adjusted Residual	8.5	8.1	-15.9	-12.6	
Total		Count	2989	1794	299	897	5979
		% within Lagged Th Gaze	50.0%	30.0%	5.0%	15.0%	100.0%
		% within Therapist Affect	100.0%	100.0%	100.0%	100.0%	100.0%

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Table 46. Patient Affect x Lagged Therapist Lean x Alliance Cross Tabulation					
Alliance Level	Patient Affect		Lagged Therapist Lean		Total
			No	Yes	
Low Alliance	**Positive**	Count	299	0	299
		% within Patient Affect	100.0%	.0%	100.0%
		% within Lagged Th Lean	19.9%	.0%	10.0%
		Adjusted Residual	18.1	-18.1	
	Sad	Count	299	0	299
		% within Patient Affect	100.0%	.0%	100.0%
		% within Lagged Th Lean	19.9%	.0%	10.0%
		Adjusted Residual	18.1	-18.1	
	Anger	Count	904	1189	2093
		% within Patient Affect	43.2%	56.8%	100.0%
		% within Lagged Th Lean	60.2%	79.9%	70.0%
		Adjusted Residual	-11.8	11.8	
	Fear	Count	0	299	299
		% within Patient Affect	.0%	100.0%	100.0%
		% within Lagged Th Lean	.0%	20.1%	10.0%
		Adjusted Residual	-18.3	18.3	
	Total	Count	1502	1488	2990
		% within Patient Affect	50.2%	49.8%	100.0%
		% within Lagged Th Lean	100.0%	100.0%	100.0%
High Alliance	**Positive**	Count	598	0	598
		% within Patient Affect	100.0%	.0%	100.0%
		% within Lagged Th Lean	67.8%	.0%	20.0%
		Adjusted Residual	42.3	-42.3	
	Sad	Count	284	613	897
		% within Patient Affect	31.7%	68.3%	100.0%
		% within Lagged Th Lean	32.2%	29.1%	30.0%
		Adjusted Residual	1.7	-1.7	
	Anger	Count	0	299	299
		% within Patient Affect	.0%	100.0%	100.0%
		% within Lagged Th Lean	.0%	14.2%	10.0%
		Adjusted Residual	-11.8	11.8	
	Fear	Count	0	1196	1196
		% within Patient Affect	.0%	100.0%	100.0%
		% within Lagged Th Lean	.0%	56.7%	40.0%
		Adjusted Residual	-28.9	28.9	
	Total	Count	882	2108	2990
		% within Patient Affect	29.5%	70.5%	100.0%
		% within Lagged Th Lean	100.0%	100.0%	100.0%

Table 47. Patient Affect x Patient Lean x Alliance Cross Tabulation					
Alliance Level	Patient Affect		Patient Lean		Total
			No	Yes	
Low Alliance	Positive	Count	243	57	300
		% within Patient Affect	81.0%	19.0%	100.0%
		% within Patient Lean	14.1%	4.5%	10.0%
		Adjusted Residual	8.7	-8.7	
	Sad	Count	300	0	300
		% within Patient Affect	100.0%	.0%	100.0%
		% within Patient Lean	17.4%	.0%	10.0%
		Adjusted Residual	15.7	-15.7	
	Anger	Count	880	1220	2100
		% within Patient Affect	41.9%	58.1%	100.0%
		% within Patient Lean	51.1%	95.5%	70.0%
		Adjusted Residual	-26.3	26.3	
	Fear	Count	300	0	300
		% within Patient Affect	100.0%	.0%	100.0%
		% within Patient Lean	17.4%	.0%	10.0%
		Adjusted Residual	15.7	-15.7	
	Total	Count	1723	1277	3000
		% within Patient Affect	57.4%	42.6%	100.0%
		% within Patient Lean	100.0%	100.0%	100.0%
High Alliance	Positive	Count	307	293	600
		% within Patient Affect	51.2%	48.8%	100.0%
		% within Patient Lean	21.3%	18.8%	20.0%
		Adjusted Residual	1.7	-1.7	
	Sad	Count	185	715	900
		% within Patient Affect	20.6%	79.4%	100.0%
		% within Patient Lean	12.8%	46.0%	30.0%
		Adjusted Residual	-19.8	19.8	
	Anger	Count	300	0	300
		% within Patient Affect	100.0%	.0%	100.0%
		% within Patient Lean	20.8%	.0%	10.0%
		Adjusted Residual	19.0	-19.0	
	Fear	Count	652	548	1200
		% within Patient Affect	54.3%	45.7%	100.0%
		% within Patient Lean	45.2%	35.2%	40.0%
		Adjusted Residual	5.5	-5.5	
	Total	Count	1444	1556	3000
		% within Patient Affect	48.1%	51.9%	100.0%
		% within Patient Lean	100.0%	100.0%	100.0%

Table 48. Patient Affect x Lagged Therapist Lean x Patient Lean					
Lagged Therapist Lean	Patient Affect		Patient Not Leaning	Patient Leaning	Total
Therapist Not Leaning	Positive	Count	549	348	897
		% within Pt Affect	61.2%	38.8%	100.0%
		% within LEANP	33.5%	46.6%	37.6%
		Adjusted Residual	-6.1	6.1	
	Sad	Count	483	100	583
		% within Pt Affect	82.8%	17.2%	100.0%
		% within LEANP	29.5%	13.4%	24.5%
		Adjusted Residual	8.5	-8.5	
	Angry	Count	605	299	904
		% within Pt Affect	66.9%	33.1%	100.0%
		% within LEANP	37.0%	40.0%	37.9%
		Adjusted Residual	-1.4	1.4	
	Total	Count	1637	747	2384
		% within Pt Affect	68.7%	31.3%	100.0%
		% within LEANP	100.0%	100.0%	
Therapist Leaning	Sad	Count	1	612	613
		% within Pt Affect	.2%	99.8%	100.0%
		% within LEANP	.1%	29.5%	17.0%
		Adjusted Residual	-23.2	23.2	
	Angry	Count	571	917	1488
		% within Pt Affect	38.4%	61.6%	100.0%
		% within LEANP	37.5%	44.2%	41.4%
		Adjusted Residual	-4.0	4.0	
	Fearful	Count	949	546	1495
		% within Pt Affect	63.5%	36.5%	100.0%
		% within LEANP	62.4%	26.3%	41.6%
		Adjusted Residual	21.7	-21.7	
	Total	Count	1521	2075	3596
		% within Pt Affect	42.3%	57.7%	100.0%
		% within LEANP	100.0%	100.0%	

Table 49. Patient Lean x Patient Affect Cross Tabulation							
			Patient Affect				Total
			Positive	Sad	Anger	Fear	
Patient Lean	No	Count	550	485	1180	952	3167
		% within Patient Lean	17.4%	15.3%	37.3%	30.1%	100.0%
		% within Patient Affect	61.1%	40.4%	49.2%	63.5%	52.8%
		Adjusted Residual	5.4	-9.6	-4.6	9.6	
	Yes	Count	350	715	1220	548	2833
		% within Patient Lean	12.4%	25.2%	43.1%	19.3%	100.0%
		% within Patient Affect	38.9%	59.6%	50.8%	36.5%	47.2%
		Adjusted Residual	-5.4	9.6	4.6	-9.6	
Total		Count	900	1200	2400	1500	6000
		% within Patient Lean	15.0%	20.0%	40.0%	25.0%	100.0%
		% within Patient Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 50. Lagged Therapist Lean x Patient Affect Cross Tabulation							
			Patient Affect				Total
			Positive	Sad	Anger	Fear	
Lagged Therapist Lean	No	Count	897	583	904	0	2384
		% within Lagged Th Lean	37.6%	24.5%	37.9%	.0%	100.0%
		% within Patient Affect	100.0%	48.7%	37.8%	.0%	39.9%
		Adjusted Residual	39.9	7.0	-2.7	-36.4	
	Yes	Count	0	613	1488	1495	3596
		% within Lagged Th Lean	.0%	17.0%	41.4%	41.6%	100.0%
		% within Patient Affect	.0%	51.3%	62.2%	100.0%	60.1%
		Adjusted Residual	-39.9	-7.0	2.7	36.4	
Total		Count	897	1196	2392	1495	5980
		% within Lagged Th Lean	15.0%	20.0%	40.0%	25.0%	100.0%
		% within Patient Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 51. Alliance x Lagged Therapist Lean x Patient Lean Cross Tabulation				
			Lagged Therapist Not Leaning	**Lagged Therapist Leaning**
Low Alliance	**Patient Not Leaning**	Count	1147	571
		% w/I Patient Lean	66.8%	33.2%
		% w/I Lagged Therapist Lean	76.4%	38.4%
		Adjusted Standardized Residual	21.0	-21.0
	Patient Leaning	Count	335	917
		% w/i Patient Lean	27.9%	72.1%
		% w/i Lagged Therapist Lean	23.6%	61.6%
		Adjusted Standardized Residual	-21.0	21.0
High Alliance	**Patient Not Leaning**	Count	490	950
		% w/i Patient Lean	34.0%	66.0%
		% w/i Lagged Therapist Lean	55.6%	45.1%
		Adjusted Standardized Residual	5.2	-5.2
	Patient Leaning	Count	392	1159
		% w/i Patient Lean	25.3%	74.7%
		% w/i Lagged Therapist Lean	44.4%	54.9%
		Adjusted Standardized Residual	-5.2	5.2

Table 52. Lagged Therapist Lean x Alliance Cross Tabulation			
		Low Alliance	**High Alliance**
Lagged Therapist Not Leaning	Count	1502	882
	% w/i Lagged Therapist Lean	63.0%	37.0%
	% w/i Alliance	50.2%	29.5%
	Adjusted Standardized Residual	16.4	-16.2
Lagged Therapist Leaning	Count	1488	2108
	% w/i Lagged Therapist Lean	41.4%	58.6%
	% w/i Alliance	49.8%	70.5%
	Adjusted Standardized Residual	-16.4	16.4

Table 53. Lagged Therapist Lean x Patient Lean Cross Tabulation			
		Lagged Therapist Not Leaning	**Lagged Therapist Leaning**
Patient Not Leaning	Count	1637	1521
	% w/i Patient Lean	51.8%	48.2%
	% w/i Lagged Therapist Lean	68.7%	42.3%
	Adjusted Standardized Residual	20.0	-20.0
Patient Leaning	Count	747	2075
	% w/i Patient Lean	26.5%	73.5%
	% w/i Lagged Therapist Lean	31.3%	57.7%
	Adjusted Standardized Residual	-20.0	20.0

Table 54. Patient Lean x Alliance Cross Tabulation			
		Low Alliance	**High Alliance**
Patient Not Leaning	Count	1723	1444
	% w/i Patient Lean	54.5%	45.6%
	% w/i Alliance	57.4%	48.1%
	Adjusted Standardized Residual	7.2	-7.2
Patient Leaning	Count	1277	1556
	% w/i Patient Lean	45.1%	54.9%
	% w/i Alliance	42.6%	51.9%
	Adjusted Standardized Residual	-7.2	7.2

LEAN BEHAVIORS
Therapist Affect

Table 55. Therapist Affect x Patient Lean x Lagged Therapist Lean Cross Tabulation					
Lagged Therapist Lean	Therapist Affect		Patient Lean		Total
			0	1	
No	Positive	Count	740	747	1487
		% within Therapist Affect	49.8%	50.2%	100.0%
		% within Patient Lean	45.2%	100.0%	62.4%
		Adjusted Residual	-25.6	25.6	
	Sad	Count	299	0	299
		% within Therapist Affect	100.0%	.0%	100.0%
		% within Patient Lean	18.3%	.0%	12.5%
		Adjusted Residual	12.5	-12.5	
	Anger	Count	299	0	299
		% within Therapist Affect	100.0%	.0%	100.0%
		% within Patient Lean	18.3%	.0%	12.5%
		Adjusted Residual	12.5	-12.5	
	Fear	Count	299	0	299
		% within Therapist Affect	100.0%	.0%	100.0%
		% within Patient Lean	18.3%	.0%	12.5%
		Adjusted Residual	12.5	-12.5	
	Total	Count	1637	747	2384
		% within Therapist Affect	68.7%	31.3%	100.0%
		% within Patient Lean	100.0%	100.0%	100.0%
Yes	Positive	Count	624	879	1503
		% within Therapist Affect	41.5%	58.5%	100.0%
		% within Patient Lean	41.0%	42.4%	41.8%
		Adjusted Residual	-.8	.8	
	Sad	Count	598	897	1495
		% within Therapist Affect	40.0%	60.0%	100.0%
		% within Patient Lean	39.3%	43.2%	41.6%
		Adjusted Residual	-2.4	2.4	
	Fear	Count	299	299	598
		% within Therapist Affect	50.0%	50.0%	100.0%
		% within Patient Lean	19.7%	14.4%	16.6%
		Adjusted Residual	4.2	-4.2	
	Total	Count	1521	2075	3596
		% within Therapist Affect	42.3%	57.7%	100.0%
		% within Patient Lean	100.0%	100.0%	100.0%

Table 56. Therapist Affect x Lagged Therapist Lean x Alliance Cross Tabulation					
Alliance Level	Therapist Affect		Lagged Th Lean		Total
			No	Yes	
Low Alliance	Positive	Count	605	890	1495
		% within Therapist Affect	40.5%	59.5%	100.0%
		% within Lagged Th Lean	40.3%	59.8%	50.0%
		Adjusted Residual	-10.7	10.7	
	Sad	Count	299	299	598
		% within Therapist Affect	50.0%	50.0%	100.0%
		% within Lagged Th Lean	19.9%	20.1%	20.0%
		Adjusted Residual	-.1	.1	
	Anger	Count	299	0	299
		% within Therapist Affect	100.0%	.0%	100.0%
		% within Lagged Th Lean	19.9%	.0%	10.0%
		Adjusted Residual	18.1	-18.1	
	Fear	Count	299	299	598
		% within Therapist Affect	50.0%	50.0%	100.0%
		% within Lagged Th Lean	19.9%	20.1%	20.0%
		Adjusted Residual	-.1	.1	
	Total	Count	1502	1488	2990
		% within Therapist Affect	50.2%	49.8%	100.0%
		% within Lagged Th Lean	100.0%	100.0%	100.0%
High Alliance	Positive	Count	882	613	1495
		% within Therapist Affect	59.0%	41.0%	100.0%
		% within Lagged Th Lean	100.0%	29.1%	50.0%
		Adjusted Residual	35.4	-35.4	
	Sad	Count	0	1196	1196
		% within Therapist Affect	.0%	100.0%	100.0%
		% within Lagged Th Lean	.0%	56.7%	40.0%
		Adjusted Residual	-28.9	28.9	
	Fear	Count	0	299	299
		% within Therapist Affect	.0%	100.0%	100.0%
		% within Lagged Th Lean	.0%	14.2%	10.0%
		Adjusted Residual	-11.8	11.8	
	Total	Count	882	2108	2990
		% within Therapist Affect	29.5%	70.5%	100.0%
		% within Lagged Th Lean	100.0%	100.0%	100.0%

Table 57. Therapist Affect x Patient Lean x Alliance Cross Tabulation					
Alliance Level	Therapist Affect		Patient Lean		Total
			No	Yes	
Low Alliance	Positive	Count	523	977	1500
		% within Therapist Affect	34.9%	65.1%	100.0%
		% within Patient Lean	30.4%	76.5%	50.0%
		Adjusted Residual	-25.0	25.0	
	Sad	Count	600	0	600
		% within Therapist Affect	100.0%	.0%	100.0%
		% within Patient Lean	34.8%	.0%	20.0%
		Adjusted Residual	23.6	-23.6	
	Anger	Count	300	0	300
		% within Therapist Affect	100.0%	.0%	100.0%
		% within Patient Lean	17.4%	.0%	10.0%
		Adjusted Residual	15.7	-15.7	
	Fear	Count	300	300	600
		% within Therapist Affect	50.0%	50.0%	100.0%
		% within Patient Lean	17.4%	23.5%	20.0%
		Adjusted Residual	-4.1	4.1	
	Total	Count	1723	1277	3000
		% within Therapist Affect	57.4%	42.6%	100.0%
		% within Patient Lean	100.0%	100.%	100.0%
High Alliance	Positive	Count	844	656	1500
		% within Therapist Affect	56.3%	43.7%	100.0%
		% within Patient Lean	58.4%	42.2%	50.0%
		Adjusted Residual	8.9	-8.9	
	Sad	Count	300	900	1200
		% within Therapist Affect	25.0%	75.0%	100.0%
		% within Patient Lean	20.8%	57.8%	40.0%
		Adjusted Residual	-20.7	20.7	
	Fear	Count	300	0	300
		% within Therapist Affect	100.0%	.0%	100.0%
		% within Patient Lean	20.8%	.0%	10.0%
		Adjusted Residual	19.0	-19.0	
	Total	Count	1444	1556	3000
		% within Therapist Affect	48.1%	51.9%	100.0%
		% within Patient Lean	100.0%	100.%	100.0%

Table 58. Patient Lean x Therapist Affect Cross Tabulation							
			Therapist Affect				Total
			Positive	Sad	Anger	Fear	
Patient Lean	No	Count	1367	900	300	600	3167
		% within Patient Lean	43.2%	28.4%	9.5%	18.9%	100.0%
		% within Therapist Affect	45.6%	50.0%	100.0%	66.7%	52.8%
		Adjusted Residual	-11.2	-2.8	16.8	9.0	
	Yes	Count	1633	900	0	300	2833
		% within Patient Lean	57.6%	31.8%	.0%	10.6%	100.0%
		% within Therapist Affect	54.4%	50.0%	.0%	33.3%	47.2%
		Adjusted Residual	11.2	2.8	-16.8	-9.0	
Total		Count	3000	1800	300	900	6000
		% within Patient Lean	50.0%	30.0%	5.0%	15.0%	100.0%
		% within Therapist Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 59. Lagged Therapist Lean x Therapist Affect Cross Tabulation							
			Therapist Affect				Total
			Positive	Sad	Anger	Fear	
Lagged Therapist Lean	No	Count	1487	299	299	299	2384
		% within Lagged Th Lean	62.4%	12.5%	12.5%	12.5%	100.0%
		% within Therapist Affect	49.7%	16.7%	100.0%	33.3%	39.9%
		Adjusted Residual	15.6	-24.0	21.8	-4.3	
	Yes	Count	1503	1495	0	598	3596
		% within Lagged Th Lean	41.8%	41.6%	.0%	16.6%	100.0%
		% within Therapist Affect	50.3%	83.3%	.0%	66.7%	60.1%
		Adjusted Residual	-15.6	24.0	-21.8	4.3	
Total		Count	2990	1794	299	897	5980
		% within Lagged Th Lean	50.0%	30.0%	5.0%	15.0%	100.0%
		% within Therapist Affect	100.0%	100.0%	100.0%	100.0%	100.0%

SELF-REGULATION INTERACTIONS - Patient Affect

Table 60. Alliance x Patient Affect x Lagged Therapist SR x Patient SR						
				Lagged Th SR		
Alliance	**Patient Affect**	**Patient SR**		**No SR**	**SR**	**Total**
Low Alliance	Positive	No Patient SR	Count	127	53	180
			% within SRP	70.6%	29.4%	100.0%
			% within LSRT	58.0%	66.3%	60.2%
			Adjusted Residual	-1.3	1.3	
		Patient SR	Count	92	27	119
			% within SRP	77.3%	22.7%	100.0%
			% within LSRT	42.0%	33.8%	39.8%
			Adjusted Residual	1.3	-1.3	
	Sad	No Patient SR	Count	26	217	243
			% within SRP	10.7%	89.3%	100.0%
			% within LSRT	100.0%	79.5%	81.3%
			Adjusted Residual	2.6	-2.6	
		Patient SR	Count	0	56	56
			% within SRP	.0%	100.0%	100.0%
			% within LSRT	.0%	20.5%	18.7%
			Adjusted Residual	-2.6	2.6	
	Angry	No Patient SR	Count	1008	361	1369
			% within SRP	73.6%	26.4%	100.0%
			% within LSRT	65.7%	64.6%	65.4%
			Adjusted Residual	.5	-.5	
		Patient SR	Count	526	198	724
			% within SRP	72.7%	27.3%	100.0%
			% within LSRT	34.3%	35.4%	34.6%
			Adjusted Residual	-.5	.5	
	Fearful	No Patient SR	Count	9	144	153
			% within SRP	5.9%	94.1%	100.0%
			% within LSRT	50.0%	51.4%	51.3%
			Adjusted Residual	-.1	.1	
		Patient SR	Count	9	136	145
			% within SRP	6.2%	93.8%	100.0%
			% within LSRT	50.0%	48.6%	48.7%
			Adjusted Residual	.1	-.1	

Table 60. Alliance x Patient Affect x Lagged Therapist SR x Patient SR continued						
				Lagged Th SR		
Alliance	**Patient Affect**	**Patient SR**		**No SR**	**SR**	**Total**
High Alliance	Positive	No Patient SR	Count	57	245	302
			% within SRP	18.9%	81.1%	100.0%
			% within LSRT	41.0%	53.4%	50.5%
			Adjusted Residual	-2.6	2.6	
		Patient SR	Count	82	214	296
			% within SRP	27.7%	72.3%	100.0%
			% within LSRT	59.0%	46.6%	49.5%
			Adjusted Residual	2.6	-2.6	
	Sad	No Patient SR	Count	65	142	207
			% within SRP	31.4%	68.6%	100.0%
			% within LSRT	12.5%	37.7%	23.1%
			Adjusted Residual	-8.8	8.8	
		Patient SR	Count	455	235	690
			% within SRP	65.9%	34.1%	100.0%
			% within LSRT	87.5%	62.3%	76.9%
			Adjusted Residual	8.8	-8.8	
	Angry	No Patient SR	Count	64	83	147
			% within SRP	43.5%	56.5%	100.0%
			% within LSRT	41.3%	58.0%	49.3%
			Adjusted Residual	-2.9	2.9	
		Patient SR	Count	91	60	151
			% within SRP	60.3%	39.7%	100.0%
			% within LSRT	58.7%	42.0%	50.7%
			Adjusted Residual	2.9	-2.9	
	Fearful	No Patient SR	Count	377	115	492
			% within SRP	76.6%	23.4%	100.0%
			% within LSRT	40.0%	45.3%	41.1%
			Adjusted Residual	-1.5	1.5	
		Patient SR	Count	565	139	704
			% within SRP	80.3%	19.7%	100.0%
			% within LSRT	60.0%	54.7%	58.9%
			Adjusted Residual	1.5	-1.5	

Table 61. Patient Affect x Lagged Therapist SR x Patient SR					
			Patient Self-Reg		Total
No Lagged Therapist SR	**Patient Affect**		**No SR**	**SR**	
	Positive	Count	184	174	358
		% within Pt Affect	51.4%	48.6%	100.0%
		% within SRP	10.6%	9.6%	10.1%
		Adjusted Residual	1.0	-1.0	
	Sad	Count	91	455	546
		% within Pt Affect	16.7%	83.3%	100.0%
		% within SRP	5.3%	25.0%	15.4%
		Adjusted Residual	-16.3	16.3	
	Angry	Count	1072	617	1689
		% within Pt Affect	63.5%	36.5%	100.0%
		% within SRP	61.9%	33.9%	47.5%
		Adjusted Residual	16.7	-16.7	
	Fearful	Count	386	574	960
		% within Pt Affect	40.2%	59.8%	100.0%
		% within SRP	22.3%	31.5%	27.0%
		Adjusted Residual	-6.2	6.2	
	Total	Count	1733	1820	3553
		% within Pt Affect	48.8%	51.2%	100.0%
		% within SRP	100.0%	100.0%	100.0%
Lagged Therapist SR	Positive	Count	298	241	539
		% within Pt Affect	55.3%	44.7%	100.0%
		% within SRP	21.9%	22.6%	22.2%
		Adjusted Residual	-.4	.4	
	Sad	Count	359	291	650
		% within Pt Affect	55.2%	44.8%	100.0%
		% within SRP	26.4%	27.3%	26.8%
		Adjusted Residual	-.5	.5	
	Angry	Count	444	258	702
		% within Pt Affect	63.2%	36.8%	100.0%
		% within SRP	32.6%	24.2%	28.9%
		Adjusted Residual	4.5	-4.5	
	Fearful	Count	259	275	534
		% within Pt Affect	48.5%	51.5%	100.0%
		% within SRP	19.0%	25.8%	22.0%
		Adjusted Residual	-4.0	4.0	
	Total	Count	1360	1065	2425
		% within Pt Affect	56.1%	43.9%	100.0%
		% within SRP	100.0%	100.0%	100.0%

Table 62. Patient Affect x Lagged Therapist SR x Alliance Cross Tabulation					
Alliance Level	Patient Affect		Lagged Th SR		Total
			0	1	
Low Alliance	Positive	Count	219	80	299
		% within Patient Affect	73.2%	26.8%	100.0%
		% within Lagged Th SR	12.2%	6.7%	10.0%
		Adjusted Residual	4.9	-4.9	
	Sad	Count	26	273	299
		% within Patient Affect	8.7%	91.3%	100.0%
		% within Lagged Th SR	1.4%	22.9%	10.0%
		Adjusted Residual	-19.1	19.1	
	Anger	Count	1534	559	2093
		% within Patient Affect	73.3%	26.7%	100.0%
		% within Lagged Th SR	85.3%	46.9%	70.0%
		Adjusted Residual	22.4	-22.4	
	Fear	Count	19	280	299
		% within Patient Affect	6.4%	93.6%	100.0%
		% within Lagged Th SR	1.1%	23.5%	10.0%
		Adjusted Residual	-20.0	20.0	
	Total	Count	1798	1192	2990
		% within Patient Affect	60.1%	39.9%	100.0%
		% within Lagged Th SR	100.0%	100.0%	100.0%
High Alliance	Positive	Count	139	459	598
		% within Patient Affect	23.2%	76.8%	100.0%
		% within Lagged Th SR	7.9%	37.2%	20.0%
		Adjusted Residual	-19.7	19.7	
	Sad	Count	520	377	897
		% within Patient Affect	58.0%	42.0%	100.0%
		% within Lagged Th SR	29.6%	30.6%	30.0%
		Adjusted Residual	-.6	.6	
	Anger	Count	155	144	299
		% within Patient Affect	51.8%	48.2%	100.0%
		% within Lagged Th SR	8.8%	11.7%	10.0%
		Adjusted Residual	-2.6	2.6	
	Fear	Count	942	254	1196
		% within Patient Affect	78.8%	21.2%	100.0%
		% within Lagged Th SR	53.6%	20.6%	40.0%
		Adjusted Residual	18.2	-18.2	
	Total	Count	1756	1234	2990
		% within Patient Affect	58.7%	41.3%	100.0%
		% within Lagged Th SR	100.0%	100.0%	100.0%

Table 63. Patient Affect x Patient SR x Alliance Cross Tabulation					
Alliance Level	Patient Affect		Patient SR		Total
			No	Yes	
Low Alliance	Positive	Count	181	119	300
		% within Patient Affect	60.3%	39.7%	100.0%
		% within Patient SR	9.3%	11.4%	10.0%
		Adjusted Residual	-1.8	1.8	
	Sad	Count	244	56	300
		% within Patient Affect	81.3%	18.7%	100.0%
		% within Patient SR	12.5%	5.3%	10.0%
		Adjusted Residual	6.2	-6.2	
	Anger	Count	1374	726	2100
		% within Patient Affect	65.4%	34.6%	100.0%
		% within Patient SR	70.4%	69.3%	70.0%
		Adjusted Residual	.6	-.6	
	Fear	Count	153	146	299
		% within Patient Affect	51.2%	48.8%	100.0%
		% within Patient SR	7.8%	13.9%	10.0%
		Adjusted Residual	-5.3	5.3	
	Total	Count	1952	1047	2999
		% within Patient Affect	65.1%	34.9%	100.0%
		% within Patient SR	100.0%	100.0%	100.0%
High Alliance	Positive	Count	302	298	600
		% within Patient Affect	50.3%	49.7%	100.0%
		% within Patient SR	26.3%	16.1%	20.0%
		Adjusted Residual	6.8	-6.8	
	Sad	Count	207	693	900
		% within Patient Affect	23.0%	77.0%	100.0%
		% within Patient SR	18.0%	37.5%	30.0%
		Adjusted Residual	-11.3	11.3	
	Anger	Count	148	151	299
		% within Patient Affect	49.5%	50.5%	100.0%
		% within Patient SR	12.9%	8.2%	10.0%
		Adjusted Residual	4.2	-4.2	
	Fear	Count	493	707	1200
		% within Patient Affect	41.1%	58.9%	100.0%
		% within Patient SR	42.9%	38.2%	40.0%
		Adjusted Residual	2.5	-2.5	
	Total	Count	1150	1849	2999
		% within Patient Affect	38.3%	61.7%	100.0%
		% within Patient SR	100.0%	100.0%	100.0%

Table 64. Patient Self-Regulating x Patient Affect Cross Tabulation							
			Patient Affect				Total
			Positive	Sad	Anger	Fear	
Patient SR	No	Count	483	451	1522	646	3102
		% within Patient SR	15.6%	14.5%	49.1%	20.8%	100.0%
		% within Patient Affect	53.7%	37.6%	63.4%	43.1%	51.7%
		Adjusted Residual	1.3	-11.0	14.8	-7.7	
	Yes	Count	417	749	877	853	2896
		% within Patient SR	14.4%	25.9%	30.3%	29.5%	100.0%
		% within Patient Affect	46.3%	62.4%	36.6%	56.9%	48.3%
		Adjusted Residual	-1.3	11.0	-14.8	7.7	
Total		Count	900	1200	2399	1499	5998
		% within Patient SR	15.0%	20.0%	40.0%	25.0%	100.0%
		% within Patient Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 65. Lagged Therapist Self-Regulating x Patient Affect Cross Tabulation							
			Patient Affect				Total
			Positive	Sad	Anger	Fear	
Lagged Therapist SR	No	Count	358	546	1689	961	3554
		% within Lagged Th SR	10.1%	15.4%	47.5%	27.0%	100.0%
		% within Patient Affect	39.9%	45.7%	70.6%	64.3%	59.4%
		Adjusted Residual	-12.9	-10.9	14.4	4.4	
	Yes	Count	539	650	703	534	2426
		% within Lagged Th SR	22.2%	26.8%	29.0%	22.0%	100.0%
		% within Patient Affect	60.1%	54.3%	29.4%	35.7%	40.6%
		Adjusted Residual	12.9	10.9	-14.4	-4.4	
Total		Count	897	1196	2392	1495	5980
		% within Lagged Th SR	15.0%	20.0%	40.0%	25.0%	100.0%
		% within Patient Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 66. Lagged Therapist Self-Regulating Behavior x Patient Self-Regulating Behavior x Alliance Cross Tabulation				
			Lagged Therapist No SelfReg	Lagged Therapist SelfReg
Low Alliance	Patient No SelfReg	Count	1170	775
		% w/i Patient SelfReg	60.2%	39.8%
		% w/i Lagged Therapist SelfReg	65.1%	65.0%
		Adjusted Standardized Residual	.1	.1
	Patient SelfReg	Count	627	417
		% w/i Patient SelfReg	60.1%	39.9%
		% w/i Lagged Therapist SelfReg	34.9%	35.0%
		Adjusted Standardized Residual	-.1	-.1
High Alliance	Patient No SelfReg	Count	563	585
		% w/i Patient SelfReg	49.0%	51.0%
		% w/i Lagged Therapist SelfReg	32.1%	47.4%
		Adjusted Standardized Residual	-8.5	8.5
	Patient SelfReg	Count	1193	648
		% w/i Patient SelfReg	64.8%	35.2%
		% w/i Lagged Therapist SelfReg	67.9%	52.6%
		Adjusted Standardized Residual	8.5	-8.5

Table 67. Lagged Therapist Self-Regulating Behavior x Alliance Cross Tabulation			
		Low Alliance	High Alliance
Lagged Therapist No SelfReg	Count % w/I Lagged Therapist SelfReg % w/i Alliance Adjusted Standardized Residual	1798 50.6% 60.1% 1.1	1756 49.4% 58.7% -1.1
Lagged Therapist SelfReg	Count % w/i Lagged Therapist SelfReg % w/i Alliance Adjusted Standardized Residual	1192 49.1% 39.9% -1.1	1234 50.0% 41.3% 1.1

Table 68. Patient Self-Regulating Behavior x Lagged Therapist Self-Regulating Behavior Cross Tabulation			
		Lagged Therapist No SelfReg	Lagged Therapist SelfReg
Patient No SelfReg	Count % w/i Patient SelfReg % w/i Lagged Therapist SelfReg Adjusted Standardized Residual	1733 56.0% 48.8% -5.6	1360 44.0% 56.1% 5.6
Patient SelfReg	Count % w/i Patient SelfReg % w/i Lagged Therapist SelfReg Adjusted Standardized Residual	1820 63.1% 51.2% 5.6	1065 36.9% 43.9% -5.6

Table 69. Patient Self-Regulating Behavior x Alliance Cross Tabulation			
		Low Alliance	High Alliance
Patient No SelfReg	Count % w/i Patient SelfReg % w/i Alliance Adjusted Standardized Residual	1952 62.9% 65.1% 20.7	1150 37.1% 38.3% -20.7
Patient SelfReg	Count % w/i Patient SelfReg % w/i Alliance Adjusted Standardized Residual	1047 36.2% 34.9% -20.7	1849 63.8% 61.7% 20.7

SELF-REGULATION BEHAVIORS - Therapist Affect

Table 70. Therapist Affect x Patient SR x Lagged Therapist SR Cross Tabulation					
Lagged Therapist SR	Therapist Affect		Patient SR		Total
			No	Yes	
No	Positive	Count	680	941	1621
		% within Therapist Affect	41.9%	58.1%	100.0%
		% within Patient SR	39.2%	51.7%	45.6%
		Adjusted Residual	-7.5	7.5	
	Sad	Count	230	803	1033
		% within Therapist Affect	22.3%	77.7%	100.0%
		% within Patient SR	13.3%	44.1%	29.1%
		Adjusted Residual	-20.2	20.2	
	Anger	Count	179	25	204
		% within Therapist Affect	87.7%	12.3%	100.0%
		% within Patient SR	10.3%	1.4%	5.7%
		Adjusted Residual	11.5	-11.5	
	Fear	Count	644	51	695
		% within Therapist Affect	92.7%	7.3%	100.0%
		% within Patient SR	37.2%	2.8%	19.6%
		Adjusted Residual	25.8	-25.8	
	Total	Count	1733	1820	3553
		% within Therapist Affect	48.8%	51.2%	100.0%
		% within Patient SR	100.0%	100.0%	100.0%
Yes	Positive	Count	651	717	1368
		% within Therapist Affect	47.6%	52.4%	100.0%
		% within Patient SR	47.9%	67.3%	56.4%
		Adjusted Residual	-9.6	9.6	
	Sad	Count	431	329	760
		% within Therapist Affect	56.7%	43.3%	100.0%
		% within Patient SR	31.7%	30.9%	31.3%
		Adjusted Residual	.4	-.4	
	Anger	Count	94	1	95
		% within Therapist Affect	98.9%	1.1%	100.0%
		% within Patient SR	6.9%	.1%	3.9%
		Adjusted Residual	8.6	-8.6	
	Fear	Count	184	18	202
		% within Therapist Affect	91.1%	8.9%	100.0%
		% within Patient SR	13.5%	1.7%	8.3%
		Adjusted Residual	10.5	-10.5	
	Total	Count	1360	1065	2425
		% within Therapist Affect	56.1%	43.9%	100.0%
		% within Patient SR	100.0%	100.0%	100.0%

71. Therapist Affect x Alliance x Lagged Therapist SR Cross Tabulation					
Alliance Level	Therapist Affect		Lagged Th SR		Total
			No	Yes	
Low Alliance	Positive	Count	1093	402	1495
		% within Therapist Affect	73.1%	26.9%	100.0%
		% within Lagged Th SR	60.8%	33.7%	50.0%
		Adjusted Residual	14.5	-14.5	
	Sad	Count	45	553	598
		% within Therapist Affect	7.5%	92.5%	100.0%
		% within Lagged Th SR	2.5%	46.4%	20.0%
		Adjusted Residual	-29.4	29.4	
	Anger	Count	204	95	299
		% within Therapist Affect	68.2%	31.8%	100.0%
		% within Lagged Th SR	11.3%	8.0%	10.0%
		Adjusted Residual	3.0	-3.0	
	Fear	Count	456	142	598
		% within Therapist Affect	76.3%	23.7%	100.0%
		% within Lagged Th SR	25.4%	11.9%	20.0%
		Adjusted Residual	9.0	-9.0	
	Total	Count	1798	1192	2990
		% within Therapist Affect	60.1%	39.9%	100.0%
		% within Lagged Th SR	100.0%	100.0%	100.0%
High Alliance	Positive	Count	528	967	1495
		% within Therapist Affect	35.3%	64.7%	100.0%
		% within Lagged Th SR	30.1%	78.4%	50.0%
		Adjusted Residual	-26.0	26.0	
	Sad	Count	989	207	1196
		% within Therapist Affect	82.7%	17.3%	100.0%
		% within Lagged Th SR	56.3%	16.8%	40.0%
		Adjusted Residual	21.7	-21.7	
	Fear	Count	239	60	299
		% within Therapist Affect	79.9%	20.1%	100.0%
		% within Lagged Th SR	13.6%	4.9%	10.0%
		Adjusted Residual	7.9	-7.9	
	Total	Count	1756	1234	2990
		% within Therapist Affect	58.7%	41.3%	100.0%
		% within Lagged Th SR	100.0%	100.0%	100.0%

Table 72. Therapist Affect x Patient SR x Alliance Cross Tabulation					
Alliance Level	Therapist Affect		Patient SR		Total
			No	Yes	
Low Alliance	Positive	Count	720	780	1500
		% within Therapist Affect	48.0%	52.0%	100.0%
		% within Patient SR	36.9%	74.5%	50.0%
		Adjusted Residual	-19.6	19.6	
	Sad	Count	397	202	599
		% within Therapist Affect	66.3%	33.7%	100.0%
		% within Patient SR	20.3%	19.3%	20.0%
		Adjusted Residual	.7	-.7	
	Anger	Count	274	26	300
		% within Therapist Affect	91.3%	8.7%	100.0%
		% within Patient SR	14.0%	2.5%	10.0%
		Adjusted Residual	10.1	-10.1	
	Fear	Count	561	39	600
		% within Therapist Affect	93.5%	6.5%	100.0%
		% within Patient SR	28.7%	3.7%	20.0%
		Adjusted Residual	16.3	-16.3	
	Total	Count	1952	1047	2999
		% within Therapist Affect	65.1%	34.9%	100.0%
		% within Patient SR	100.0%	100.0%	100.0%
High Alliance	Positive	Count	615	884	1499
		% within Therapist Affect	41.0%	59.0%	100.0%
		% within Patient SR	53.5%	47.8%	50.0%
		Adjusted Residual	3.0	-3.0	
	Sad	Count	265	935	1200
		% within Therapist Affect	22.1%	77.9%	100.0%
		% within Patient SR	23.0%	50.6%	40.0%
		Adjusted Residual	-15.0	15.0	
	Fear	Count	270	30	300
		% within Therapist Affect	90.0%	10.0%	100.0%
		% within Patient SR	23.5%	1.6%	10.0%
		Adjusted Residual	19.4	-19.4	
	Total	Count	1150	1849	2999
		% within Therapist Affect	38.3%	61.7%	100.0%
		% within Patient SR	100.0%	100.0%	100.0%

Table 73. Lagged Therapist Self-Regulating x Therapist Affect Cross Tabulation							
			Therapist Affect				Total
			Positive	Sad	Anger	Fear	
Lagged Therapist SR	No	Count	1621	1034	204	695	3554
		% within Lagged Th SR	45.6%	29.1%	5.7%	19.6%	100.0%
		% within Therapist Affect	54.2%	57.6%	68.2%	77.5%	59.4%
		Adjusted Residual	-8.2	-1.9	3.2	11.9	
	Yes	Count	1369	760	95	202	2426
		% within Lagged Th SR	56.4%	31.3%	3.9%	8.3%	100.0%
		% within Therapist Affect	45.8%	42.4%	31.8%	22.5%	40.6%
		Adjusted Residual	8.2	1.9	-3.2	-11.9	
Total		Count	2990	1794	299	897	5980
		% within Lagged Th SR	50.0%	30.0%	5.0%	15.0%	100.0%
		% within Therapist Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Table 74. Patient Self-Regulating x Therapist Affect Cross Tabulation							
			Therapist Affect				Total
			Positive	Sad	Anger	Fear	
Patient SR	No	Count	1335	662	274	831	3102
		Expected Count	1551.0	930.4	155.2	465.5	3102.0
		% within Patient SR	43.0%	21.3%	8.8%	26.8%	100.0%
		% within Therapist Affect	44.5%	36.8%	91.3%	92.3%	51.7%
		Adjusted Residual	-11.2	-15.1	14.1	26.4	
	Yes	Count	1664	1137	26	69	2896
		Expected Count	1448.0	868.6	144.8	434.5	2896.0
		% within Patient SR	57.5%	39.3%	.9%	2.4%	100.0%
		% within Therapist Affect	55.5%	63.2%	8.7%	7.7%	48.3%
		Adjusted Residual	11.2	15.1	-14.1	-26.4	
Total		Count	2999	1799	300	900	5998
		Expected Count	2999.0	1799.0	300.0	900.0	5998.0
		% within Patient SR	50.0%	30.0%	5.0%	15.0%	100.0%
		% within Therapist Affect	100.0%	100.0%	100.0%	100.0%	100.0%

Addendum 2 **Client Post-Session Questionnaire**

The following items reflect your working relationship with your therapist based on your most recent session. Please circle the appropriate number on the rating scale below each item.

1. My therapist and I agree about the things I will need to do in therapy to help improve my situation.
1----------2----------3----------4----------5
Never Sometimes Always

2. What I am doing in therapy gives me new ways of looking at my problem.
1----------2----------3----------4----------5
Never Sometimes Always

3. I believe my therapist likes me.
1----------2----------3----------4----------5
Never Sometimes Always

4. My therapist does not understand what I am trying to accomplish in therapy.
1----------2----------3----------4----------5
Never Sometimes Always

5. I am confident in my therapist's ability to help me.
1----------2----------3----------4----------5
Never Sometimes Always

6. My therapist and I are working towards mutually agreed upon goals.
1----------2----------3----------4----------5
Never Sometimes Always

7. I feel that my therapist appreciates me.
1----------2----------3----------4----------5
Never Sometimes Always

8. We agree on what is important for me to work on.
1----------2----------3----------4----------5
Never Sometimes Always

9. My therapist and I trust one another.
1----------2----------3----------4----------5
Never Sometimes Always

10. My therapist and I have different ideas on what my problems are.
1----------2----------3----------4----------5
Never Sometimes Always

11. We have established a good understanding of the kind of changes that would be good for me.
1----------2----------3----------4----------5
Never Sometimes Always

12. I believe the way we are working with my problem is correct.
1----------2----------3----------4----------5
Never Sometimes Always

Addendum 3 **Therapist Post-Session Questionnaire**

The following items reflect your working relationship with your patient based on your most recent session. Please circle the appropriate number on the rating scale below each item

1. My patient and I agree about the things they will need to do in therapy to help them improve their situation.

1----------2----------3----------4----------5
Never Sometimes Always

2. What my patient is doing in therapy gives them new ways of looking at their problem.

1----------2----------3----------4----------5
Never Sometimes Always

3. My patient believes that I likes them.

1----------2----------3----------4----------5
Never Sometimes Always

4. My patient believes that I do not understand what they are trying to accomplish in therapy.

1----------2----------3----------4----------5
Never Sometimes Always

5. My patient is confident in my ability to help them.

1----------2----------3----------4----------5
Never Sometimes Always

6. My patient believes that he/she and I are working towards mutually agreed upon goals.

1----------2----------3----------4----------5
Never Sometimes Always

7. My patient believes that I appreciate them.

1----------2----------3----------4----------5
Never Sometimes Always

8. My patient believes that we agree on what is important for them to work on.

1----------2----------3----------4----------5
Never Sometimes Always

9. My patient believes that he/she and I trust one another.

1----------2----------3----------4----------5
Never Sometimes Always

10. My patient believes that he/she and I have different ideas on what my problems are.

1----------2----------3----------4----------5
Never Sometimes Always

11. My patient believes that we have established a good understanding of the kind of changes that would be good for them.

1----------2----------3----------4----------5
Never Sometimes Always

12. My patient believes that the way we are working with their problem is correct.

1----------2----------3----------4----------5
Never Sometimes Always

Addendum 4

Nonverbal Behavior Coding Manual

Behaviors to be coded are as followed:
1 = yes, 0 = no

Code

Gaze towards	GAZE
Lean forward	LEAN
Torso oriented towards	ORIENT
Adapter Behaviors- self and object touch	SELF-REG

NONVERBAL CODES:
Gaze: Gaze behavior is measured as either gazing towards the other or away from the other (not necessary to observe eye-contact). If both partners are "yes" requires observing both partners simultaneously to find "fixed point" where looking at each other.

Lean Forward: This is coded yes when either person is actively leaning towards the other person, either forward or sideways towards the other (you will be able to see this on the split screen). Sitting in a neutral upright position or leaning away will be coded no.

Orientation: This code is related to LEAN, and will often coincide with it. Oriented toward the other will be coded *as head turned towards* the other. Can have gaze yes, with eyes towards the other, with orient no, and visa versa.

Adapter Behaviors: Adapter behaviors or Self-regulatory behaviors, include biting or licking lips, playing with hair, rubbing hands, picking with fingers, scratching, holding oneself, tapping hand movement, rubbing or massaging, generally any self-touching behaviors.

Rule for coding change in behavior:

- If change occurs within a second, code what it changes to if maintained for the full second.
- If changes within one second, but goes back to the prior behavior, then keep code at prior behavior

Example:

Behavior occurs for 3 full seconds, then changes in the fourth second

P/T		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Gaze	P	1	1	1	0																
	T																				

Behavior occurs for 3.5 seconds, changes to 0 for 1second, changes back to 1 (e.g. changes in middle of "5th" second.

P/T		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Gaze	P	1	1	1	0	1	1	1	1												
	T																				

Addendum 5:

Nonverbal Behavior Coding Sheet

Minute ONE (1'00" – 1'19")

P/T		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute ONE (1'20" – 1'39")

P/T		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute ONE (1'40" – 1'59")

P/T		40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute TWO (2'00" – 2'19")

P/T		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute TWO (2'20" – 2'39")

P/T		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute TWO (2'40" – 2'59")

P/T		40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute THREE (3'00" – 3'19")

P/T		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute THREE (3'20" – 3'39")

P/T		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute THREE (3'40" – 3'59")

P/T		40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute FOUR (4'00" – 4'19")

P/T		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute FOUR (4'20" – 4'39")

P/T		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute FOUR (4'40" – 4'59")

P/T		40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute FIVE (5'00" – 5'19")

P/T		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute FIVE (5'20" – 5'39")

P/T		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Minute FIVE (5'40" – 5'59")

P/T		40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Gaze	P																				
	T																				
Lean	P																				
	T																				
Self-Reg	P																				
	T																				

Addendum 6

Affect Coding Scale
Coding Manual

The Affect Coding Scale will be applied to five-minute segments taken from completed psychotherapy sessions. Each video shows a split screen, front view of both patient and therapist. Both patient and therapist were audiotaped as well.

The purpose of this scale is to identify the essential emotion(s) that are being expressed by both the patient and the therapist in a particular segment of psychotherapy. This scale is an adaptation of the Client's Emotional Arousal Scale (Machado, Beutler and Greenberg, 1999). While this rating is judgment based, there are general guidelines that may be followed for each affect category.

The emotion categories to be identified are fear, anger, sadness and positive emotion.

Presence or Absence of the Emotion: This is marked as Yes=1, No=2, Don't Know=9

Modal Intensity of the Emotion: This is a measure of the modal level of expression for a particular affect. In other words, during the time that an affect is expressed within the five minute segment, on a scale of 1-5, (one being the least amount, and 5 being the most intense amount), what was the average intensity of affect that was expressed? For example, how angry is the patient, on a scale of 1-5, during the time she is expressing anger? In other words, what is the modal amount of anger expressed during the time this particular emotion was expressed?

Duration: During each one-minute segment, is this affect being expressed more than 50% of the time.

Examples of Affect Categories are as Follows:

Fear: This is a global category that may include more specific emotions of anxiety, worry, panic, terror and feeling scared of being judged by others (shame or embarrassment),
Nonverbal examples: looking away, eyebrows raised or furrowed, eyes widened, torso leaning away
Verbal behavioral signs: speaking softly, quavering voice
Content: verbalizations of any aspect of fear mentioned above

Anger: This is a global category that may include more specific emotions of rage, irritation, annoyance,
disgust, contempt or blame
Nonverbal examples: looking away annoyed, or looking at other intensely, horizontal head nodding, brows lowered and drawn together, eyes squinted
Verbal behavioral signs: voice raised or speaking through clenched teeth
Content: critical, devaluing or threatening comments

Sadness: This is a global category that may include depression, feelings of loss, self-doubt, regret
Nonverbal examples: tearful, inner corner of brow raised, frowning, pouting
Verbal behavioral signs: sad voice, speaking low volume, slow rate of speech, cracked voice, sighing, withdrawn behavior, e.g. silent, non-responsive
Content: sad, expressions of loss, low self-esteem, guilt, regret

Positive Affect: This is a global category representing happy feelings, curiosity, interest and joy
Nonverbal examples: smiling, laughing, good eye contact, vertical head nodding
Verbal behavioral signs: receptive interest in what the other is saying, humor,
Content: expressing feelings of accomplishment, satisfaction, gratitude, love, interest, curiosity and feelings of mastery in reference to specific problems.

Addendum 7 **Affect Coding Sheet**

Minute One	**Patient**			**Therapist**			
	Y/N/DK Y=1 N=2 DK=9	Modal Intensity	Duration 1=<50% 2=>50%		Y/N/DK Y=1 N=2 DK=9	Modal Intensity	Duration 1=<50% 2=>50%
Fear		1 – 2 – 3 – 4 – 5		Fear		1 – 2 – 3 – 4 – 5	
Anger		1 – 2 – 3 – 4 – 5		Anger		1 – 2 – 3 – 4 – 5	
Sadness		1 – 2 – 3 – 4 – 5		Sadness		1 – 2 – 3 – 4 – 5	
Positive		1 – 2 – 3 – 4 – 5		Positive		1 – 2 – 3 – 4 – 5	

Minute Two	**Patient**			**Therapist**			
	y/n/dk y=1 n=2 dk=9	Modal Intensity	Duration 1=<50% 2=>50%		y/n/dk y=1 n=2 dk=9	Modal Intensity	Duration 1=<50% 2= 2=>50%
Fear		1 – 2 – 3 – 4 – 5		Fear		1 – 2 – 3 – 4 – 5	
Anger		1 – 2 – 3 – 4 – 5		Anger		1 – 2 – 3 – 4 – 5	
Sadness		1 – 2 – 3 – 4 – 5		Sadness		1 – 2 – 3 – 4 – 5	
Positive		1 – 2 – 3 – 4 – 5		Positive		1 – 2 – 3 – 4 – 5	

Minute Three	**Patient**			**Therapist**			
	Y/N/DK Y=1 N=2 DK=9	Modal Intensity	Duration 1=<50% 2=>50%		Y/N/DK Y=1 N=2 DK=9	Modal Intensity	Duration 1=<50% 2=>50%
Fear		1 – 2 – 3 – 4 – 5		Fear		1 – 2 – 3 – 4 – 5	
Anger		1 – 2 – 3 – 4 – 5		Anger		1 – 2 – 3 – 4 – 5	
Sadness		1 – 2 – 3 – 4 – 5		Sadness		1 – 2 – 3 – 4 – 5	
Positive		1 – 2 – 3 – 4 – 5		Positive		1 – 2 – 3 – 4 – 5	

Minute Four	**Patient**			**Therapist**			
	Y/N/DK Y=1 N=2 DK=9	Modal Intensity	Duration 1=<50% 2=>50%		Y/N/DK Y=1 N=2 DK=9	Modal Intensity	Duration 1=<50% 2=>50%
Fear		1 – 2 – 3 – 4 – 5		Fear		1 – 2 – 3 – 4 – 5	
Anger		1 – 2 – 3 – 4 – 5		Anger		1 – 2 – 3 – 4 – 5	
Sadness		1 – 2 – 3 – 4 – 5		Sadness		1 – 2 – 3 – 4 – 5	
Positive		1 – 2 – 3 – 4 – 5		Positive		1 – 2 – 3 – 4 – 5	

Minute Five	**Patient**			**Therapist**			
	Y/N/DK Y=1 N=2 DK=9	Modal Intensity	Duration 1=<50% 2=>50%		Y/N/DK Y=1 N=2 DK=9	Modal Intensity	Duration 1=<50% 2=>50%
Fear		1 – 2 – 3 – 4 – 5		Fear		1 – 2 – 3 – 4 – 5	
Anger		1 – 2 – 3 – 4 – 5		Anger		1 – 2 – 3 – 4 – 5	
Sadness		1 – 2 – 3 – 4 – 5		Sadness		1 – 2 – 3 – 4 – 5	
Positive		1 – 2 – 3 – 4 – 5		Positive		1 – 2 – 3 – 4 – 5	

Predominant affect for segment expressed by patient _____

Predominant affect for segment expressed by therapist _____

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