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The Effect of Therapist Synchrony and Affect
on Child Behavior Change in Therapy

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DEDICATION

This dissertation is dedicated
to the memory of my mother
Betty Evelyn Brock Bartley,
who taught me to believe in dreams,
and to my son
Brock Zacharias Bartley,
may all your dreams come true.

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ABSTRACT

This research is a process study of the impact of therapist behavior on child behavior change within therapy sessions. We focused on therapist synchrony and affective expression and then evaluated subsequent continuity of child behavior. We hypothesized that therapist synchrony would promote continuity, with nonsynchrony promoting change, and that this synchronous behavior would be more powerful than therapist affect. Consistent with our hypothesis, we found trends suggesting therapist behavior which seemed to have the greatest impact on child behavior was synchrony. Change in child behavior was higher following therapist nonsynchrony. This research supported a more limited definition of synchrony, where the therapist response was congruent with the content of the child's statements. Therapist emotionality and affect did appear to impact on child behavior, and may potentiate the effects of synchrony. We also hypothesized that the level of synchrony would increase as therapist and child spent time together. This hypothesis was not supported, as the level of synchrony appeared constant across sessions.

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Chapter I

Introduction

Psychotherapy is a relational process. It takes place between a client experiencing pain and a therapist who provides assistance based on his or her training, expertise and relationship with the client. Beyond this simple definition, therapy sessions vary so much that researchers often have difficulty identifying those elements which are most potent in helping the client change. During a therapy session, there are at least two people in the room, and somehow what takes place between them contributes to the outcome seen at the conclusion of therapy.

The relational process which occurs in therapy sessions is elusive. Research is primarily focused on technique, modality, and client and therapist characteristics to explain client change over time. However, techniques, modalities and characteristics all find their expression within the context of the relationship. Meta-analyses show that differences in technique or modality account for less of the variance than those relationship elements which are common to almost all psychotherapy experiences (Garfield & Bergin, 1986).

An appropriate model for understanding relationships comes from work done in the area of attachment. Although the development of the infant's attachment to his or her caregiver is often seen as a natural unfolding, ineffective or inappropriate nurturing can result in serious problems. Spitz (1946) found that nursery babies deprived of maternal attention between the sixth and eighth months developed what he termed "anaclitic depression", with its weepiness, withdrawal, and decline in health and affect. Bowlby (1960) said that when the attachment bond between mother and infant was broken, the child responds with protest, despair, and finally detachment. Bowlby's work on attachment has been expanded by Ainsworth (1979), who found eight patterns of attachment which could be categorized along a secure-anxious dimension. Securely attached infants were more cooperative and their mothers more responsive.

The infant's inborn readiness for attachment seems to work as a catalyst or potentiator for the child to become socialized within the parent-child relationship. Work on early social bonds (Mahler, Pine & Bergman, 1975) illustrates how this socialization may take place. Initially the infant has a symbiotic relationship, with its long period of absolute dependency on the caregiver.

The child slowly separates, and through this individuation process begins to acquire a sense of self. This self representation includes the way the child sees him or herself in relation to others. For most people, attachment to significant others and fulfilling interpersonal relationships are important in their lives, with maladaptive relationships preferable to no relationships.

This drive toward establishing relationships is not based only on the mother's ability to satisfy physical needs; the infant's appearance, movements and vocalizations also have the capacity to start an interaction with the caregiver. The caregiver and the infant each can also demonstrate attunement with the other member of the dyad. The response from either member of the dyad can further the interaction, end it, or change it. There are certain response patterns which encourage continuity of the interaction and so promote the establishment or strengthening of the relationship.

An important process which encourages the establishment and maintenance of relationships is synchrony. Synchrony describes an interactional process where the components of the system respond contingently. Contingent responsiveness by either member of a dyad in a relationship sets the stage for synchrony, however,

synchrony requires the efforts of both members of the dyad to maintain a mutual focus.

There are at least three ways that synchrony may promote and sustain relationships and attachment. The first is by recognizing the need for both autonomy and secure attachment. When one member of the dyad is responsive, tracking and following the other's lead, that individual encourages autonomy at the same time he or she reassures the other member of the dyad that attachment will not be broken by growing independence. The second way synchrony may promote attachment maintains that synchronous behavior simplifies cognitive demands by not requiring the child to shift his or her focus. The third way in which synchrony promotes attachment is through an increase in predictability and continuity in the relationship.

The pattern of the relationship often indicates which member of the dyad is being responsive. For example, infancy research on synchrony shows the importance of the mother's responsive behavior with infants who have not yet acquired a repertoire of relational behaviors. Mothers in synchronous interactions modulate their responsiveness to the infant's need for attention and non-attention. For example, a mother may pace the level of stimulation by

talking to her infant while the baby maintains eye contact, but looking away when the baby breaks eye contact (Brazelton, Koslowski & Main, 1974, and Field, 1977). In this way, synchrony regulates attention and involvement and so shapes and organizes child behavior. Thus, the parent's responsive behavior promotes the synchrony which provides a framework for the child.

With older children, responses by the adult which maintain synchrony seem to be followed by child behavior which also maintains the status quo. Rocissano, Slade & Lynch (1987) found that synchrony promoted continuity in play behaviors. Evidence of synchrony may be in the parent's attunement and the child's cooperation or it may be seen as a pattern of escalating coercive interactions (Patterson, 1982). Although maladaptive, an escalating coercive interaction is still a synchronous relationship which provides predictability. Maladaptive patterns and nonsynchronous patterns may both be described as failures in the relational process.

Parents, teachers and others involved in maladaptive or nonsynchronous relationships with a child usually see the child's behavior as problematic and may refer him or her for therapy. The child comes to therapy with an established repertoire of interpersonal behaviors, many of which are based on past relationships

and may be maladaptive or inadequate. It becomes the therapist's job to enter into a relationship with the child and work within that context to promote change.

Understanding the processes involved in relationships is critical to our understanding of what therapists and child clients do in therapy. The relationship is the context, the "holding environment" (Winnicott, 1963), but certain process variables, such as synchrony, occur in this context and are the agents of change. These process variables are alluded to in the literature, with studies saying that clients were confronted, persuaded, instructed, etc., but there is little information on what actually takes place (Alexander, Barton, Schiavo & Parsons, 1976). There is a gap in our understanding of how the relationship and technique are related.

To understand the process which takes place within the relationship between therapist and client, the behavior of the client and the therapist must be described. What the members of this therapeutic dyad talk about and how they talk about it are important to better understand the changes clients make over the course of therapy. The most critical component may be therapist behaviors which influence the level of synchrony. Change in behavior is often difficult, and

the predictability and continuity provided by synchrony can help maintain the holding environment. At the same time, since synchrony is reinforcing, the loss of synchrony may provide motivation for changes in behavior, as the client attempts to re-establish synchrony.

Nonsynchrony also provides motivation for change because it may be seen by the client as threatening the relationship or it may increase cognitive demands. If the client values the relationship he or she has established with the therapist or wishes to simplify the interaction, he or she will attempt to follow the therapist's lead and make changes to re-establish synchrony. The therapist is walking a tightrope. An optimal level of synchrony will provide security within the relationship and keep cognitive demands within the client's reach, but still contain enough nonsynchrony to promote change.

This descriptive study investigates the characteristics of therapist and child client verbal behavior and the effects of therapist behaviors, including those which regulate the level of synchrony, on child behavior during therapy sessions. The goal is not to evaluate how productive or detrimental interactions are, but to describe what goes on and find a

meaningful way to organize those variables which seem to make the greatest contribution to the therapy process. Before we make any decisions about what techniques work, for whom, and under what conditions (Paul, 1967), we need a more thorough understanding of the process as it is being currently practiced.

This is a study of process/process connections within therapy, as it is illustrated by molecular verbal exchanges which take place between child client and therapist. It is not an analysis of general themes, but rather an account of the ways in which conduct disordered, latency age children interact with their therapists. Alexander, et al. (1976) pointed out that we need an "intratherapy identification and evaluation of variables that differentially contribute to the therapy process." The identification of these variables is an important step toward understanding the relational framework in which therapeutic technique and therapist, client and dyadic characteristics function.

My primary hypotheses is that synchrony is one of the most powerful variables which affects human behavior. In the relationship between client and therapist, nonsynchrony by the therapist will motivate the client to make changes as he or she attempts to re-establish synchrony. Operationally, if this hypothesis

is supported, continuity of child verbal behavior will be significantly higher during periods of therapist synchrony, with non-synchrony associated with changes in child behavior. This continuity is hypothesized to be particularly evident in the child's affect and the content of the child's verbalizations. Other variables, such as therapist affect, are also hypothesized to impact on the child's verbal behavior, although not as powerfully as synchrony. Also, levels of synchrony should increase as the child and the therapist learn to work together and the relationship becomes stronger. Thus, it is hypothesized that levels of synchrony will increase with the number of sessions.

Chapter II

Review of the Literature

Synchrony is a concept which describes the behavior of a system, defined most globally as a mutual focus among the members of a system (Rocissano, Slade & Lynch, 1987) with its primary effect being predictability (Wahler, 1990). Synchronous interactions require that a response be congruent with the content of the other's statements, with nonsynchrony being noncontingent and arbitrary. However, current literature illustrates much controversy surrounding the definition of synchrony. Since the definition is not agreed upon, researchers must be very clear about what is meant by synchrony. In addition, research already done must be evaluated carefully, and results interpreted consistent with the way the authors defined and operationalized the term.

Very few researchers looking at mother-child interactions have focused on predictability. The quality of interactions has primarily been assessed by focusing on the behaviors of the individual members of the dyad or on the relationship. Research which focused on maternal or child behaviors chose terms such as sensitivity (Lamb & Easterbrooks, 1980), tracking (Wahler & Dumas, 1989) and responsivity (Parpal & Maccoby, 1985,

Lay, Waters & Park, 1989) to describe the interaction. In contrast, research which focused on the relationship used terms which reflect the characteristics of a system, including synchrony (Isabella, Belsky & von Eye, 1989, Wahler & Dumas, 1986, and Rocissano, Slade & Lynch, 1987), co-occurrence and matching (Tronick & Cohn, 1989), reciprocity (Brazelton, Koslowski & Main, 1974), rhythmicity (Stern, 1980), coherence (Crowell, Feldman & Ginsberg, 1988), and mutuality (Schaffer & Crook, 1980). Focusing on individual members of the dyad and on relational processes represent two different perspectives on mother-child interactions.

Earlier explorations of mother-infant interactions looked for a causative connection between maternal behavior and child psychopathology (Doane, 1978). Maternal nurturing was seen as the formative influence for the child's emotional well being. However, this cause and effect conceptualization failed to define the complexity of the real life situation. Research has shifted from looking at parental (maternal) behaviors to looking at the processes of interaction in the system. As Sroufe (1985) points out, seeing interaction and attachment as relational and dependent on both members of the dyad "opens the way for . . . important process studies of the unfolding of the infant caregiver

relationship" (p. 11). Many factors play an important part in child development, and in the mother-child dyadic interaction. The child, through his or her own characteristics, makes extremely important contributions to this relationship (Thomas, Chess & Birch, 1970), with the relationship, in turn, influencing the child's development and emotional health.

In a perfectly synchronous system all of the elements respond contingently, providing predictability. Thus, if we want to measure synchrony in a dyadic relationship, the responsive behavior of each member of the dyad must be considered. Researchers can evaluate the interaction through a sequential approach, analyzing how the interaction proceeds by looking at each member of the dyad and using the sequence of individual behaviors as a measure of synchrony. They can also focus on one member of the dyad, examining the effect of his or her synchronous responses. In any research, it is important to remember we are looking at part of a circuit, rather than isolated parts that act and react. Censullo, Bowler, Lester and Brazelton (1987) described it as "the convergence of individual behaviors into a synergistic whole" (p. 244). Individual behaviors represent part of the pattern in a dyadic sequence. The similarities in the way synchrony is operationalized

are based on measurements of mutually focused behavior and how each member of the dyad adjusts behavior to accommodate the other. The differences in the way synchrony is operationalized tend to be in the way time is handled. One position states that synchrony is the co-occurrence in time of two events. Synchrony is then described as coordinated behavior, with mother and infant engaging in related behaviors at the same time. Some research suggests that this matching behavior (with its dimensions of engagement and disengagement) seen in early mother-infant interactions is evidence for biological underpinnings (Lester, Hoffman & Brazelton, 1985). A second position looks at individual behaviors and combines them. Specific molecular behaviors are defined on an a priori basis as responsive, looked at in sequence, scored separately and combined as a unit. Events are used as the unit of analysis, with time frames being longer. Longer time frames have demonstrated several advantages (Fogel, 1988). The strongest evidence for the effects of maternal sensitivity and attachment come from studies which rely on global ratings and longer time frames which include more information, although this information is less specific.

Event based data and time based data give us different information. Rather than being purely random, the choice of a time interval is made because that interval is believed to have some correspondence to the temporal organization of behavior. However, when transitional probabilities are calculated from the frequency of repetitions and non-repetitions, the size of the time period chosen influences the magnitude. For example, a behavior which continues over a four second period would be seen as one event if the time period chosen was four seconds, but as four repetitions of the same event if a one second interval was used. Thus, in analyzing sequential behaviors, it is necessary to consider the autocorrelations of these behaviors (Kazdin, 1976). Messer and Vietze (1988) suggest researchers should analyze and compare both event based and time based data. Using this procedure, they concluded that mother-infant gaze patterns were largely a result of how each member of the dyad organizes his or her behavior, with responsivity being a characteristic of synchrony rather than being the result of interactional synchrony. Bernieri, Reznick and Rosenthal (1988) concluded that most interactions created through split screen video clips were pseudo interactions, and that genuine synchrony was higher for

mothers interacting with their own children, and it increased as the children grew. Thus, synchrony seems to be a process that builds over time in a relationship.

Belsky, Taylor and Rovine (1984) combined event and time data in the methodology they developed to analyze reciprocity (or synchrony). They selected maternal, infant and dyadic behaviors on an apriori basis, including contingent responsiveness, mutually positive affect and stimulating social exchange. Dowdney, Mrazek, Quinton and Rutter (1984) combined time interval and event sequential sampling to gain a better picture of parental functioning. They analyzed responsivity, affect, social communication and control as elements of parental functioning they felt were most critical for child development. In both of these studies, findings supported by both time and event based data were considered the strongest evidence for reciprocal (or synchronous) interactions.

The roles of mother and infant also change as the child grows and becomes a more competent partner. In infancy, the focus is often on simultaneous behaviors. When we operationalize synchrony with older children, we tend to look at larger blocks of time, segmenting events in ways that have more to do with events than preset time frames. Responsive behaviors from the child become

more important. The clarity of cues, mutual turn taking, and maternal pauses (to allow the child to respond) are used increasingly, reflecting the idea that we expect the child to contribute to the interaction. In fact, the mother's role in maintaining the interaction declines as the infant's role increases (Belsky, Taylor & Rovine, 1984). Thus, either member of the dyad can take the responsive role in an attempt to maintain the focus necessary for synchrony.

Censullo, Bowler, Lester and Brazelton (1987) identified six items from the literature that they felt collectively represented the components of synchronous interactions. Infant clarity of cues, positive affect, maternal pauses and sensitivity were identified, although these are characteristics of the individuals involved in the dyadic interaction. Mutual attention and turn taking were the interactive characteristics listed. Individual characteristics are often used to make inferences about system characteristics such as synchrony. However, as Brazelton, et al. (1974) said, "The dyadic nature of infant-caregiver interaction supercedes the importance of the individual members" (p. 56).

In all studies, mutually focused attention was required for synchrony (e.g., Rocissano, Slade & Lynch,

1987). Other variables chosen for analysis included more maternal than infant behaviors, reflecting the mother's greater repertoire of relational behaviors. The mother is usually more capable of sustaining the interaction, however, either member can take the responsive role. The interaction is most likely to be broken by the child, and the mother is more likely than her child to repair or restore synchrony by responding to the child's new topic (Rocissano, Slade & Lynch, 1987). Thus, the mother carries most of the responsibility for maintaining the interaction.

Most authors felt that positive interactions are also a necessary part of maternal responsiveness. The underlying premise was that mother should regulate the interaction by modifying her behavior in line with the infant's cues, so that an affectively positive level of arousal was maintained (Stern, 1980). Stern believed that affect is central to the infant's experience, and that a stimulus cannot be considered separate from its affective attributions. However, analyzing affect and responsivity separately may provide information on the relative influence of each.

Problems can be created by combining responsivity and positive affect. For example, when mothers are instructed to behave in positive, responsive ways with

their children (Lay, et al. 1989, and Parpal & Maccoby, 1985), or when positive affect is seen as a necessary component of synchrony (Censullo, et al. 1987), there is not a clear distinction between the effects of responsivity and the effects of positive affect. The conclusion (Lay, et al. 1989) that maternal responsiveness induced more positive mood states must be interpreted with the understanding that mothers were instructed to be positive with their children. As the literature is reviewed, it is important to keep these different definitions in mind. Synchrony, as we define it, is a dyadic concept, requiring contingent responsiveness which sustains a mutual focus but not necessarily positive affect. Synchrony may have specific effects independent of positive interactions. For example, synchrony may potentiate and/or sustain mood states, both positive and negative.

Synchrony and positive interaction are probably highly correlated, making them, and their effects, difficult to separate. Although synchronous interactions accompanied by negative affect are not uncommon in dyadic interactions, the research in this area is limited. However, there are some clues which might help us separate out the effects of synchrony and positive and negative interactions.

Children's needs for predictability are at times a factor in ongoing coercive interactions - a combination of negative affect and synchrony. When parents behave in nonsynchronous ways the child may force a contingent response through inappropriate behavior (Wahler & Dumas, 1986). As this now synchronous interaction unfolds between child and parent, it can become increasingly intense and aversive (Patterson, 1982). However, these coercive interactions provide security and lower levels of anxiety because they represent familiar patterns (Zajonc, 1968).

Another reason negative affect and synchrony may occur together is to keep family members engaged with each other. Wasserman, Green and Allen (1983) found that abusive mothers seemed to lack a repertoire of positive behaviors which might provide constructive opportunities for interaction. In addition, they show higher levels of negative and ignoring behaviors. The negative interactions were the way these families stayed connected. Conduct disordered children not only have a higher level of negative interactions, but are also deficient in harmonious experiences with their mothers (Gardner, 1987). During these conflictual interactions with their preschoolers, the mothers of conduct problem children also acted inconsistently (Gardner, 1989). For

these children, negative affect with synchrony may be preferable to their mother's nonsynchronous, inconsistent behavior, and they may attempt to get it by provoking predictable coercive interactions (Wahler, 1986). When early attempts at harmony fail, families may create an aversive synchrony, particularly with young, dependent or immature children who require more parental caretaking.

With older children, however, who are capable of greater autonomy, synchrony may not be as essential and families may disengage. Alexander (1973) found that families of adolescent delinquents had much higher levels of defensive communications. This form of communication is marked by statements which are controlling, indifferent or reflect superiority, with family members often disengaging from each other. Rocissano and Yatchmink (1984) found non-synchronous patterns where directive behavior from one member of the dyad was counterbalanced by uninvolved behavior in the other, resulting in what Crowell, Feldman and Ginsberg (1988) have termed "complementary interaction failures". Although the current state of the literature makes it unclear what represents nonsynchrony and what represents negative affect in combination with synchrony, it seems that the defensive communication pattern Alexander

refers to is nonsynchronous, due to the absence of contingent responsiveness necessary to maintain a mutual focus. In contrast, negative affect together with synchrony may have a very clear focus accompanied by aversive communication.

The ability of synchrony to promote compliance has been pointed out in several studies (e.g. Rocissano, Slade & Lynch, 1987). Maternal responsiveness and acceptance have been correlated with increased child compliance in infants (Stayton, Hogan & Ainsworth, 1971), toddlers (Parpal & Maccoby, 1985), and positive functioning (as rated by teachers) in older children (Rothbaum, 1988). Parents who have harmonious relationships with their children appear to be more invested in the children learning principles of resolution (how to cope) rather than resolving differences or demonstrating compliance (Baumrind, 1971). This requires the parent to be responsive to the child's perspective of the problem, which is then the mutual focus between parent and child and helps create synchrony. This research should be interpreted cautiously as this more egalitarian approach to child rearing is used by more educated, higher SES parents (Minton, Kagan & Levine, 1971), who experience fewer stressors, such as insularity and socio-economic disadvantage (Dumas & Wah-

ler, 1983). However, these parents seem more invested in the interactive process and less invested in the immediate outcome, resulting in higher levels of child compliance.

Synchrony also simplifies cognitive demands. When the mother's interactions are consistent with child's current focus of attention, the child does not have to shift in order to comply. When the mother either creates or responds to the context, monitoring the current focus and, if necessary, orienting the child, synchrony is created by the mutual focus and compliance is significantly higher than if she - nonsynchronously - issues directives "out of the blue" (Schaffer & Crook, 1980).

When one member of the dyad responds so that the mutual focus is maintained (rather than shifting to a different topic) continuity of the topic is maintained. Continuity, which is a necessary part of a synchronous environment, has demonstrated important effects, such as simplifying cognitive demands and increasing compliance. Continuity also provides the child with the reassurance that there are things one can count on; they are predictable. Predictability and continuity are necessary components of synchrony. The predictability inherent in synchrony helps sustain interactions,

allowing the growing child to develop stable internal models of him or herself in relationships. Synchrony may be one of the primary processes through which the infant's attachment for the mother occurs, as well as a very potent motivating force for human behavior (Wahler & Dumas, 1986).

The infant's inborn readiness for attachment seems to work as a catalyst for the child to become socialized within the parent-child relationship. Socialization may depend on the mother's (and child's) ability to be synchronous, whereas the quality of attachment (secure or anxious) may depend on the positive, nurturing aspects of maternal caretaking. The mother's ability to be responsive is negatively influenced by factors such as maternal depression (Radke-Yarrow, Cummings, Kuczynski & Chapman, 1985) and the mother's own internal models of relationships. Crowell and Feldman (1988) found that mothers who described their own relationship with their parents as detached were task focused, being more invested in completing the job than teaching the child the skills he or she would need to complete the task. These children were classified as anxious-avoidant. In contrast, mothers who described their relationship with their parents as enmeshed gave confusing instructions to their children, who were

classified as anxious-resistant. Securely attached children were found to be more compliant, even when evaluated months later (Londerville & Main, 1981). Besides affecting the quality of attachment, maternal behaviors were coorelated with child compliance.

The research on maternal behaviors which seem to facilitate attachment is extensive. We know that meeting a child's physical needs is not sufficient, and it is important that mothers acknowledge and modulate the child's distress (Spitz, 1946), communicating that the environment is responsive. Mother's timing, ability to be appropriately focused and non-intrusive, and to accurately interpret her infant's signals facilitates social interaction with her child. These maternal factors are extremely important in setting the stage for attachment. However, attachment does not occur until the baby sees him or herself as separate, with anxiety being created by this separation. When a child is faced with the anxiety of separation, the initial response is active, with agitation and cries for attention as the child attempts to re-establish the connection with the parent (Field, 1985). Field found that if separation continues and the infant feels that efforts to recall the mother (or obtain adequate care from her) are

ineffective, passive coping characterized by helplessness, hypervigilance and withdrawal result.

The quality of attachment can also be influenced by child characteristics. For example, the child's level of distress may lead to the child experiencing parental caretaking as inadequate if the parent is unable to lower this distress. Thus, attachment may be adversely effected by factors such as prematurity (Field, 1977), physical handicaps (Wasserman, Lennon, Allen & Shilansky, 1987), cognitive disabilities (Mitchell, 1987) and chronic illness (Fischer-Fay, 1989) in the child. Each child's needs and resources are different, requiring different responses from caretakers. When a mother is responsive, the child has some control. The mother's responsiveness allows the child to modulate cognitive, emotional and physical input from her. Thus, one result of synchrony is that the child experiences competence in influencing his or her environment.

The research on individual differences supports the conclusion that there is an optimal level for interactions. Both too much and too little intervention may have adverse effects on socialization (Brazelton, Koslowski & Main, 1974) and attention (Parrinello & Ruff, 1988). Therefore, there is probably an optimal balance between synchrony and nonsynchrony. Tronick and

Cohn (1989) reported that synchrony is less common than non-synchrony, with mother-infant dyads spending over 70% of their time in mismatched/disynchronous states. The advantages for non-synchrony have not been explored in the literature, although the need for the exploration of non-synchrony and its reparation has been expressed (Tronick & Cohn, 1989). The tendency has been to see synchrony as beneficial, with non-synchrony as detrimental. However, nonsynchrony has adaptive aspects and the balance between the two may be the most critical determinant of successful socialization and development.

A completely responsive environment would not allow the child to learn to be responsive to others. An important part of socialization is learning to handle frustration, delay gratification, and negotiate, things that one could not learn in an always synchronous environment. To use Piagetian terms, synchrony may be the way in which we assimilate, whereas nonsynchrony is the way we accommodate to our environment. Part of the socialization process may be a result of the child's attempts to re-establish synchrony in his or her environment. It is also part of our nature to seek a certain level of novelty, and complete predictability would be a negative experience.

It is also likely that the child learns to see the parent as separate through nonsynchrony, with conflict creating distance and clarifying differences. In order for a child to "internalize a parent", incorporating the parent's value system, he or she must first see parents as separate. When conflict puts distance between parent and child, the child may find that to repair the interaction, he or she must alter behavior, adopt parental norms, in short, establish synchrony with the parent. The child's efforts in maintaining synchrony in the parent-child dyad may be as important as the mother's efforts in the growth of the relationship and attachment. In fact, we find that mother-infant dyads show an increasing ability to coordinate their behavior with age (Tronick & Cohn, 1989).

Synchrony facilitates attachment, and attachment and synchrony both promote internalization, resulting in higher levels of child compliance. It is still difficult to separate out the effects of positive interactions. Some authors propose that internalization is also dependent on positive interactions (Seligson, 1977). For example, sensitivity, cooperation and acceptance result in higher levels of internalized controls (Stayton, Hogan & Ainsworth, 1971). When a parent is responsive to child behavior, the child has a

greater feeling of control and is more likely to attribute behavior to his or her own internal capacities to influence the environment. In contrast, children who are coerced, directed or responded to in other non-synchronous ways attribute their behavior to external causes (Dix & Grusec, 1983).

The development of internalized controls is certainly more important than simple compliance. It is likely that when children experience acceptance and the appropriate gratification of their subjective needs, trust develops, the attachment is strengthened, and children internalize the parent, incorporating values and positive attitudes towards themselves. It is also possible, however, that an aversive, synchronous environment could be internalized, resulting in what has been called "identification with the aggressor". Longstanding interaction patterns, positive or negative, result in children acquiring internalized models which guide their behavior (Bretherton, 1985).

Most children are predisposed to be appropriately social, given an average social environment. However, not all children grow up in an average, moderately responsive environment, and some children need something different from what the environment provides in order to reach their potential. Therapy is one way to rework

those early experiences, or provide enrichment, experiences the individual needs but has not had.

Bowlby (1977) points out that "All forms of attachment behavior, including care eliciting behavior, remain a normal part of the behavioral repertoire of humans throughout life" (p. 422). Since these behaviors may not be confined to critical periods early in life, therapy can give an individual a second chance. The relationship between therapist and client can provide an appropriate context to rework problems. Just as anxiety causes children to seek out the attachment figure, usually a parent, a client is often motivated by anxiety to seek the proximity of the therapist. Nonsynchrony creates distance and anxiety, and the client who values the attachment to the therapist will seek to repair the distance created by non-synchrony. Appropriate therapist behavior modulates the level of anxiety so it does not get too high, or the therapist will be experienced as intrusive and directive, violating both autonomy and secure attachment. If the level of anxiety is too low, there will be little incentive for the patient to change his or her behavior. The therapist's behavior should help create an appropriate balance between synchrony and non-synchrony to bring about positive results in therapy.

The relationship between client and therapist is also influenced by many of the same factors which influence the mother-child dyad. Anxiety and depression affect the mother's ability to be responsive. Similarly, clinical effectiveness is negatively correlated with anxiety and depression in the therapist (Bergin & Jasper, 1969). The therapist's relationship skills seem to be just as important in establishing a working alliance in therapy (Alexander, et al., 1976) as contingent responsiveness is in establishing attachment between mother and child. What is described in the literature as good maternal care seems to be equally important for effective therapy.

The therapist, like the mother, initially carries most of the responsibility for maintaining the focus. For the client to develop an attachment (the therapeutic alliance), the therapist must first be seen as genuine and empathetic (Rogers, 1957), responding appropriately to the care-eliciting behavior of the client (Mackie, 1981). Just as secure attachment in infancy gives the child a base from which he or she can explore, a secure therapeutic alliance gives the client "a secure base from which to explore both himself and also his relations with all those with whom he has made or might make an affectional bond" (Bowlby, 1977, p. 423).

However, as Alexander, et al. (1976) have pointed out, good relationship skills are necessary but insufficient to produce positive therapeutic outcomes. Good therapy requires skillful interventions, particularly with more severe forms of psychopathology. One would expect that the level of synchrony in the client-therapist relationship will be different from that found in the client's other dyadic relationships. The client's environment has somehow failed to provide what was needed. This could happen because of individual differences, or because experience failed to provide an average expected environment, which may then result in delayed or pathological development.

In summary, the concepts of synchrony and nonsynchrony are highly debated terms, but invaluable in understanding not only the mother child relationship, but also the relationship between therapist and client. In current literature, synchrony and related terms are given different definitions and operationalized in different ways, making it difficult or impossible to compare research results. The definition given synchrony often lists positive affect as a necessary component. However, this may be problematic, and where possible, synchronous and nonsynchronous processes should be analyzed separately from affect if we are to

understand their influence on individual and interpersonal processes. The balance between synchrony and nonsynchrony is also important, as both can have beneficial and detrimental effects on relationships and individual behavior.

Chapter III

Method

The subjects in this study were ten therapist-child dyads from the Child Behavior Institute at the University of Tennessee in Knoxville, Tennessee. The child clients were latency age children referred for oppositional and defiant behavior. 70% of the children were referred by social service or educational agencies for chronic antisocial behavior, including overt and covert misbehaviors such as lying, stealing, fighting, and non-compliance with authority figures. The other 30% were self referred, but also for oppositional and defiant behavior.

All the children in the sample completed the full course of therapy at the Child Behavior Institute, being seen for an average of 38.5 sessions (range, 23 - 62). There were seven male and three female child clients in the sample, of which one was black and nine were white. The children ranged in age from 6 to 10 (mean age = 7.5 years, median age = 8 years). The therapists were advanced graduate students in the Ph.D. program in clinical psychology at the University of Tennessee. All the therapists were white and female. Each student's therapeutic work with the children was supervised by a

licensed Ph.D. psychologist, but no particular therapeutic modality was encouraged. Student therapists were directed to use whatever techniques they felt would be appropriate and helpful in establishing a therapeutic alliance and encouraging appropriate behavioral changes in the child.

Measurement Procedures

Each therapist-child dyad was videotaped during regular weekly therapy sessions. Sessions which were highly structured (such as those involving testing or board games) were excluded from the sample, since the goal was to understand the therapeutic process when it was not task oriented. Three sessions were randomly selected from each child, transcribed, and coded according to a system developed by Bartley, Barnes and Wahler (1989).

In this system, the first fifteen interchanges between therapist and child client were coded. An interchange was defined as a verbal interaction where both child and therapist each say a minimum of three words. Previous work indicated that the first fifteen interchanges included most, if not all, of the session. Four of the sessions contained fewer than fifteen interchanges. In these four cases, one of the other

sessions which contained more than fifteen interchanges had additional dialogue coded. Thus, each of the ten therapist child dyads contributed exactly 45 interchanges to the sample, resulting in a total of 450 interchanges in the study.

The Child Therapy Coding System (Bartley, Barnes & Wahler, 1989) was used to assess the characteristics of child client and therapist verbal behavior during therapy sessions. The therapist's verbal behavior served as the independent measure, as our goal was to understand the impact of therapist behavior on the subsequent behavior of the child.

To analyze the therapist's statements in each interchange, categories were used for synchrony, primary character, and affect. The categories and coded behaviors are listed in Table 1.¹ One code was assigned from each category, with the codes within categories being mutually exclusive. Synchronous responses by the therapist were those not contradicting or changing the subject of child statements. In other words, a synchronous response was congruent with the content of child statements. Primary character reflected the people the therapist discussed. Therapist

¹All tables and figures may be found in the appendix.

affect (positive, neutral or negative) was also coded for each interchange. The variable of affect was further analyzed by combining the positive and negative codes as a single measure of "emotionality", in contrast to the neutral code which represented a lack of emotionality.

The child's verbal behavior was analyzed for the categories of sentence type, primary character, tense (time frame), affect, and reality or fantasy. These are also listed in Table 1. Again, one code was assigned for each variable, with the codes within variables being mutually exclusive. There were four sentence types into which the child's statements could be categorized, of which three involved interactions. The child could be reporting a coercive interaction, a non-coercive interaction, or could be talking about what was currently going on between him or herself and the therapist during the session. This latter sentence type was labeled a present exchange, and often involved the child engaging the therapist in an activity, or asking for help, clarification, or additional information from the therapist. The fourth sentence type, called a description, included those statements which did not involve an interaction at all. Similar to the therapist codes, the child primary character codes involved the

people the child discussed. Four were relational, and involved the child talking about him or herself in an interaction with the therapist, with parents, with sibs or peers, or with others. The other four categories were non-relational, with the child talking about him or herself, an animal or object, parents, or others. Time frame, reflected by the tense (past, present or future) and child affect (positive, neutral or negative) were also coded. As with therapist codes, the variable of affect was further analyzed by combining the codes of positive and negative affect to reflect emotionality. The neutral code represented a lack of emotionality. This analysis explored the possibility that the intensity of therapist's emotions, and not just positive or negative affect, may impact on child behavior. Tense was also reanalyzed as now (present tense) or not now (future and past tense). This was done to see if events children discussed in the present tense were different from those events occurring in the past or future. Current events may be more potent stimuli for this population of children.

Since children often represent the events in their lives with varying degrees of accuracy during therapy, the coding system also reflected how the child verbally depicted these events. Reality was coded when a child's

statement (in the opinion of the coder) could have represented an event. For example, if a child reported "Mom put me in time out", this was coded as reality. Two fantasy codes included simulation and fiction. Simulation represented an event which possibly occurred but contained distortions. The second fantasy code, fiction, was coded when the event was improbable or impossible. "That teacher has never been nice to anybody in her whole life" was coded as simulation, whereas "I can fly like Peter Pan" was coded as fiction. During symbolic play, the child could take the role of the main character, where he or she initiates the action in the story, or could take the role of narrator, where the child tells the story and controls the characters but is not directly involved. Both of these instrumental roles were coded as active. For example, the statements "I'm going to rescue the princess" and "This guy locked up all the kids in the neighborhood" were both coded as active, with the child assuming the role of the main character in the first example, and the narrator in the second. The child could also take a passive experiencer role, where he or she was still the main character but something was happening to him or her. "The monster ate me" represents the experiencer role, coded as passive.

The reliability of the Child Coding System was assessed through the agreement between independent observers, based on their codes for each interchange. The coders were undergraduate students. Kappa coefficients (Cohen, 1960) were computed for 10% of the sample. Cohen's Kappa is the % agreement corrected for chance, so that with chance agreement, $K = 0$. The Kappa statistic is widely used with nominal data because it takes into account and corrects for chance agreement.

Data Analysis

Since the data in this study represented repeated measures of dialogue within sessions over time, we could not assume that individual interchanges were independent of each other. Since serial dependency violates the assumption of independence which underlies most common statistical methods, its presence or absence would be crucial to our choice of how to proceed with data analysis. To measure the extent to which each category was autocorrelated, correlations were computed between occurrences of each category for lags one through six. A lag represents the pairing of interchanges. For example, lag 1 paired an interchange with the one which directly preceded it, lag 2 with the one occurring two interchanges before, and so on. Autocorrelations were

carried out to lag 6, to maximize the chance of finding independence. Pearson's r was used with ordinal categories, whereas Cramer's V (a measure of correlations between two nominal variables) was used with the nominal categories of primary character and sentence type. Figures 1 and 2 graphically depict the autocorrelations of categories.

The categories of time frame and affect were autocorrelated at lag one. If a child made a historic statement, with neutral affect, the high lag one autocorrelation suggested the child's next statement would also be historic and neutral. To measure the effects of synchrony and affect on subsequent change in child behavior, and not have the results influenced by autocorrelation, adjustments were made in the data unit. An odd/even split was made, creating two data sets in which autocorrelation was eliminated by selecting interchanges that were two lags apart. Thus, for categories autocorrelated only at lag one, the split data samples could be analyzed as independent observations. Since variables which were autocorrelated at lag 2 or above could not meet the assumptions of independence with an odd/even split, these were eliminated from the sequential analysis. Such categories were analyzed only with descriptive statistics.

Once adjustments were made in the data unit, we could begin testing hypotheses. The primary hypothesis was that synchronous therapist behavior would result in fewer changes in child responses, and thus would promote continuity in child behavior. We operationalized this hypothesis by looking at synchronous and non-synchronous pairs of child-therapist behaviors, and then determining the probability of change in child behavior. F-tests were used to determine if changes seen in the sequential analysis were significant. It was also hypothesized that therapist affect (positive, neutral and negative or emotionality) would have an effect on the continuity of child behavior, although this effect would not be as powerful as synchrony. It was predicted that negative affect would promote change in child behavior, as would therapist statements which expressed more emotionality, whether positive or negative. These child-therapist relationships were studied using the same methods as those used to study synchrony.

Correlational analysis was done to provide additional information about the relationship between selected categories. The sequential change analysis provided information on the probability of change, given selected therapist behaviors. The correlational analysis investigated two hypotheses. The first was the

possibility that affect and synchrony were aspects of a similar phenomenon. Previous work (cited in the literature review) suggested positive affect was a necessary characteristic of synchronous interactions. Although we defined synchrony separately in this study, and did not include affect, it was important to know if synchrony, as we defined it, was correlated with affect. The second hypothesis was that synchrony would increase over time in therapy. This was tested by correlating synchrony and session number.

Chapter IV

Results

The children in this study were referred for conduct problems and thus represented a very specific population. The mothers of each of the ten children completed Achenbach's Child Behavior Checklist during their child's initial evaluation. As expected, the children scored higher on externalizing behaviors with a mean externalizing T-score of 72.5 (SD = 3.6). On the externalizing subscales, the mean T-scores were significant for aggression (71.7), hyperactivity (74.7), and nearing significance for delinquent behavior (68.5). In contrast, the internalizing scores of this sample, including withdrawn, anxious and depressed behaviors, were lower, and not clinically significant, with a mean T score of 68 (SD = 7.6). Based on these maternal ratings, the children in the sample could be described as clinically aggressive, hyperactive and with delinquent tendencies.

Also administered was an index of socioeconomic disadvantage (SED), based on income, education, single parent household, family size, referral source, and residence in a high crime area. The SED ranged from 0 to 6, with 6 representing highest levels of disadvantage.

The mean of the sample was 1.2, with a range of 0 to 3. Thus, these children did not come from disadvantaged families.

The reliability of the Child Coding System was assessed through the agreement between independent observers, based on their codes for each interchange. Kappa coefficients were computed for a randomly selected 10% of the sample, and are presented in Table 2. Fleiss (1981) characterized Kappas of 40% to 60% agreement as fair, 60% to 75% as good and over 75% agreement as excellent. All Cohen's Kappa's were above 60% agreement. Thus, acceptable reliability was established for each category of the Child Coding System.

Descriptive statistics were computed for each category in the child coding system to determine the characteristics of the verbal behaviors of therapists and child clients during therapy sessions. The results of these analyses are reported in Tables 3 and 4. According to Table 3, the most common focus for these children in therapy sessions, as seen in the category of primary character, was the therapist and themselves. The second most common topic was the child only, with the third being an animal or object, both non-relational topics. However, over half the child's dialogue still centered on his or her interactions. The child

discussed interactions with the therapist, parents, siblings, peers, and others.

The child's expressed affect was primarily neutral, but when positive or negative affect was present, it was more likely to be negative than positive. The child's verbal behavior primarily reflects a current tense (time frame), with historic events talked about more than future events.

As seen in Table 3, the descriptive analysis of the reality/fantasy variable shows that these children engaged in reality oriented dialogue 83.6% of the time. Most of the child's fantasy oriented verbal behavior is simulation where the play creates or recreates events which could happen. The least common type of fantasy play represents events which are improbable or impossible. In their fantasy play, these children were primarily active, assuming the role of either the narrator or main character.

As seen in Table 4, therapists, in contrast to children, talked primarily about the child, rather than the child and therapist together. Therapist affect was primarily neutral, but when positive or negative affect was present, it was more often negative than positive. Therapist responses to child verbal behavior produced synchrony approximately two-thirds of the time.

Figures 1 and 2 graphically depict the autocorrelation of variables. The variables of primary character, sentence type and reality/fantasy showed high levels of autocorrelation. While therapist verbal behavior may be related to the content, sentence type or reality/fantasy dimensions of child dialogue in therapy, the high levels of autocorrelation make it difficult to determine what, if any, relationship may exist between these categories. Therefore, the categories of sentence type, primary character, and reality/fantasy were analyzed only with descriptive statistics.

In contrast, other categories were significantly autocorrelated at lag 1, but not at lags 2 or higher. (Synchrony, although not autocorrelated at lag 1, was evaluated in relation to categories which were autocorrelated at lag 1.) These findings indicated that events separated by one interchange were statistically independent. Therefore, the data unit was adjusted by making an odd/even split of all interchanges, creating two sets of independent units that were not serially dependent. This eliminated the autocorrelation between adjacent data points so that these split data samples could be analyzed as independent observations.

Correlational Analysis

Correlations between ordinal variables in the split samples appear in Tables 5 and 6. As these tables show, there is no consistent correlation between synchrony and any of the other variables. In the even numbered interchanges, synchrony did not correlate with anything. This is an important finding, as it suggests that that synchrony is different and should be analyzed separately.

Session number and the amount of synchrony in sessions also did not correlate. Thus, we failed to confirm the hypothesis that synchrony increased over time in the therapeutic relationship.

A significant negative correlation was found between therapist emotionality and the amount of positive affect expressed by the therapist in both the odd and even data samples. This correlation was consistent with the descriptive analysis which found that when emotionality was expressed, it was more often negative rather than positive.

The Impact of Therapist Synchrony on Child Behavior

After confirming that synchrony and affect were not correlated, we began testing the hypotheses. The primary hypothesis was that therapist synchrony with

child verbal behavior would maintain child behavior. The analysis involved looking at change in child behavior, including shifts in the amount of positive affect or emotionality, or tense, and correlating the percentage of change with therapist synchrony which immediately preceded child behavior. Child variables showed more continuity and fewer changes during periods of synchrony than periods of therapist non-synchrony. However, none of the variables showed a consistent pattern. Odd numbered interchanges suggested a significant relationship between increased therapist synchrony and subsequent decrease in the percentage of change in the amount of positive affect, emotionality and total changes seen in child verbal behavior. Even interchanges were close to significance for changes in the categories of positive affect and total changes ($p < .10$). This suggests a trend but does not confirm the findings. These data are presented in Tables 7 and 8. From this we may tentatively propose that synchrony sustained the child's level of positive affect, with nonsynchrony promoting changes in the child's dialogue in the amount of positive affect expressed.

The Impact of Therapist Affect and Emotionality on Child Behavior

To determine the effect of therapist affect on subsequent changes in child verbal behavior, the relationship between positive or negative therapist affect and subsequent changes in child behavior was studied using the same methods as were used to study synchrony. These results are presented in Tables 9 and 10. Negative affect by the therapist promoted more change in the emotionality expressed by the child. However, only the even interchange sample was significant. The odd data sample showed a similar trend ($p < .10$) but lacked the significance to confirm the finding.

Tables 11 and 12 present the data on therapist emotionality and subsequent changes in child behavior. Changes in the child's positive affect and child emotionality were significant for the odd sample, and nearing significance ($p < .10$) for the even sample, again suggesting a trend but not confirming the findings.

Chapter V

Discussion

Therapy is one type of intervention used to encourage changes in the interpersonal behaviors of conduct disordered children. The purpose of this study was to look at those process variables which occur in therapy and may promote change. As we examine the results, the reader should remember that each analysis was replicated due to the required odd/even split in the data units. Thus, even though the findings were limited, results should be given careful consideration.

Our primary hypothesis was that synchrony, operationally defined as a therapist response which was congruent with the content of the child's statements, would encourage continuity of child behavior, while therapist non-synchrony would promote changes in child behavior. We investigated this hypothesis by looking at the characteristics and impact of synchrony on changes in child behavior. In defining synchrony, we disagreed with previous researchers who suggested that positive affect was a necessary component. The lack of correlation between synchrony and affect gave evidence to support a more limited definition, which requires

only that the therapist response be congruent with the content of the client's statement.

We also hypothesized that synchronous responses would increase as the child and therapist spent time together, building a therapeutic relationship. Overall, therapist's responses produced synchrony approximately two-thirds of the time. However, there was no difference between early sessions and later ones. Thus, the hypothesis was not confirmed.

In evaluating these characteristics of synchrony, we concluded that synchrony does not require the therapist to be positive, and although it seems to be a desirable state for therapy, therapists were non-synchronous one-third of the time. It may be that therapeutic changes require an optimal balance between synchrony and nonsynchrony. Synchrony was important in maintaining continuity, predictability for the client, and helped to keep cognitive demands within the child's reach. Thus, synchrony might have been reinforcing. In contrast, the lack of synchrony, or non-synchrony by the therapist, provided incentive for the child to make changes which would re-establish synchrony.

The sequential analysis yielded some interesting findings on the effect of synchrony on changes in child behavior. Changes in the amount of positive affect

expressed by the child and the total changes seen were higher following therapist nonsynchrony. From these results, we can infer that synchrony promotes continuity, whereas nonsynchrony promotes change. More specifically, the amount of positive affect expressed by the child changed when therapists were non-synchronous.

We also hypothesized that therapist affect and emotionality might have impact on child behavior. Child clients demonstrated more changes in emotionality following negative therapist affect. When therapists expressed more emotion, either positive or negative, child changes were noted in the amount of positive affect, and expressed emotion. However, neither therapist emotionality nor affect produced significant total changes. The therapist's emotionality and expressions of negative affect were followed by changes similar to those seen with nonsynchrony. It is possible that the effects of non-synchrony are potentiated by the therapist's expressions of emotion.

It is also interesting to note that therapist positive affect was followed by fewer child changes than negative affect, given that researchers (i.e., Censullo, et. al., 1987) have stressed the necessity of positive affect in synchrony, and some clinicians have emphasized the importance of a positive accepting attitude by the

therapist. Therapists in this study were more negative than positive in their expressions of emotion. Given the findings in this study, positive verbalizations may have little utility in helping clients make therapeutic changes.

The therapist's synchrony and expressions of affect had an impact on the emotional expressions of the child. This is an important finding given that affective attributions are a critical, if not key, factor in how we perceive our experiences. However, it was disappointing that we did not see changes in the child's time frame. It is often helpful for clients to compare past and present behaviors, and plan ways to handle future situations. In this study, neither synchrony nor affective expressions by the therapist were followed by changes in tense.

Three of the categories (sentence type, reality/fantasy, and primary character) were highly autocorrelated. This meant the topics, and whether the child chose to discuss them realistically or symbolically, tended to last through the entire therapy session. This autocorrelation limited our ability to test the hypothesis that the content of the child's verbalizations would change following nonsynchrony.

Future research will need to sample these areas differently than was done for this study.

However, the descriptive analysis provided some interesting information on what child clients and therapists talk about in therapy. One common focus was the child. An important difference was the child spent more time discussing the child and therapist together, whereas the therapist focused on the child. Child and therapist both discussed current, more often than past or future events, and topics were more often reality based, rather than symbolic or fantasized.

Even though the conduct problems of this sample resulted in considerable parent-child conflict, both child clients and therapists discussed parents less than ten percent of the time. These children did discuss coercive interactions more than non-coercive, and both child clients and therapists were more likely to be negative, rather than positive, when expressing strong emotions.

The characteristics of this sample probably influenced the results in ways that might not be found with a different population of children. Conduct disordered children are more difficult for therapists to work with, and therapists often feel their efforts are less effective. The lack of increase in synchrony, the

higher level of negative affect by the therapist and the often short sessions may reflect therapist inexperience and frustration, or may be a result of the conflict that seems to characterize interactions with these children. As Gardner (1987) pointed out, these children are deficient in harmonious experiences with their mothers. It is probable that therapy is also less positive, as these conduct disordered children have a difficult time modifying their behavior and experience more conflict in most interactions. In effect, the therapist has a less competent partner with whom he or she must establish a therapeutic relationship.

In dealing with these children, it is tempting for the therapist to go to great lengths to modify their own behavior so that a positive interaction is established and maintained. However, as we have said before, the balance between synchrony and nonsynchrony is critical. It is more important for the therapist to set up situations where the child can learn to handle frustration, delay gratification and negotiate. This requires an appropriate level of nonsynchrony. The conflict within the session encourages the child's efforts at repairing the relationship. All of these are important skills for conduct disordered children.

The primary weakness of the study was the small sample size. Due to our interest in the possible increase of synchrony over time in therapy, we included only those clients which completed the full course of treatment at the Child Behavior Institute. The high drop out rate among these clients limited the sample size. Since it was found that synchrony did not increase over time, and other categories were also not correlated with session number, all clients could be included in future research. This may result in a more accurate sampling of the conduct disordered population, as those who completed treatment demonstrated important differences. For example, the sample showed fewer disadvantages, as measured by the SED, than the total CBI clientele. The larger sample would also compensate for the problems created by autocorrelation.

In conclusion, the therapist behavior which seemed to have the most influence on child behavior was synchrony, implying that continuity or change in the child's behavior can be encouraged through the therapist's use of synchronous and nonsynchronous responses. Our more limited definition of synchrony, requiring only that the therapist's response be congruent with the content of the child's verbalizations, was supported. However, therapist

emotionality and affect did appear to impact on child behavior, and may potentiate the effects of synchrony. The level of synchrony appeared constant across sessions.

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APPENDIX

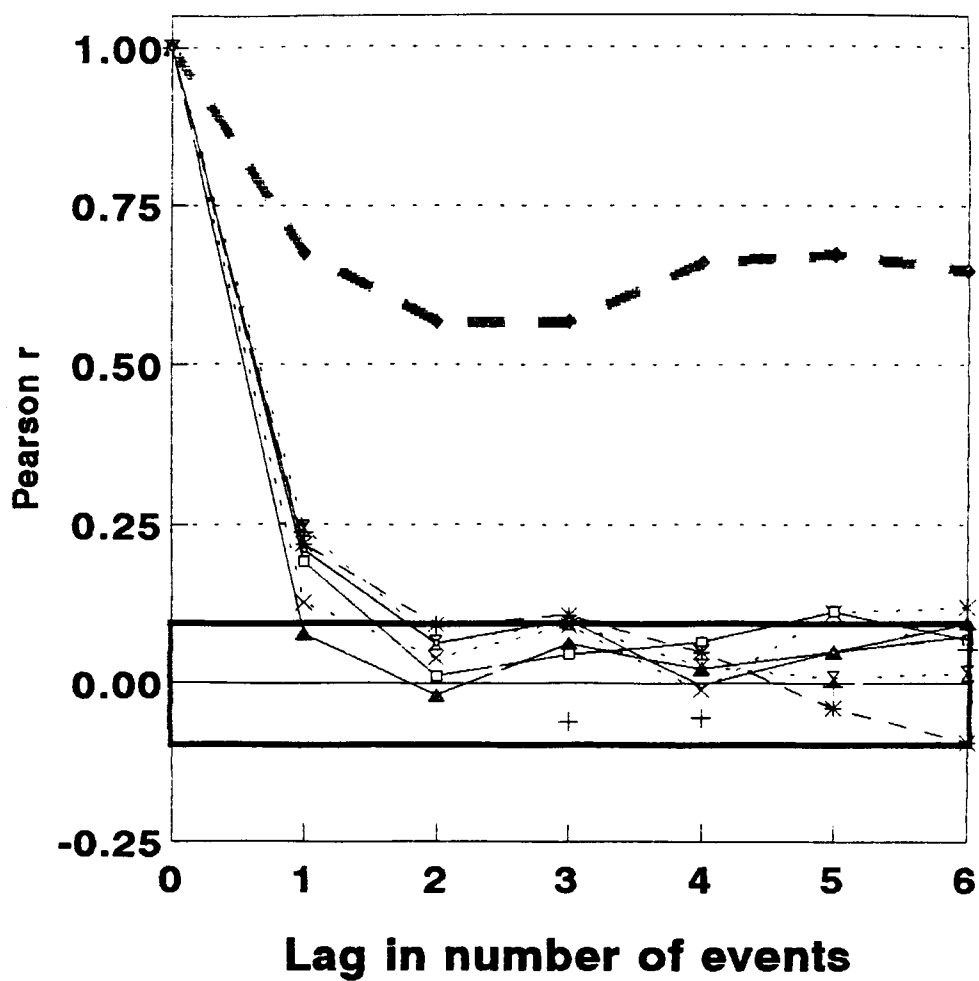
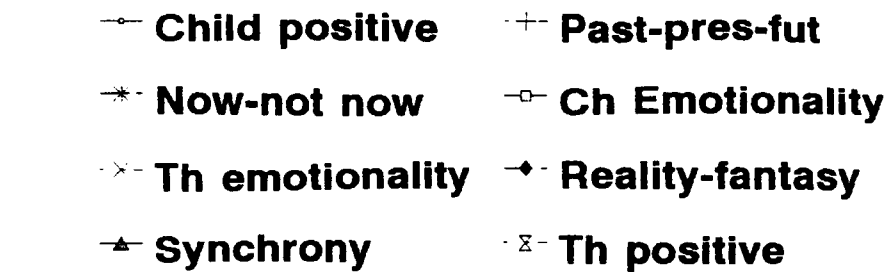


Figure 1. Lagged Pearson Autocorrelations for Eight Response Categories

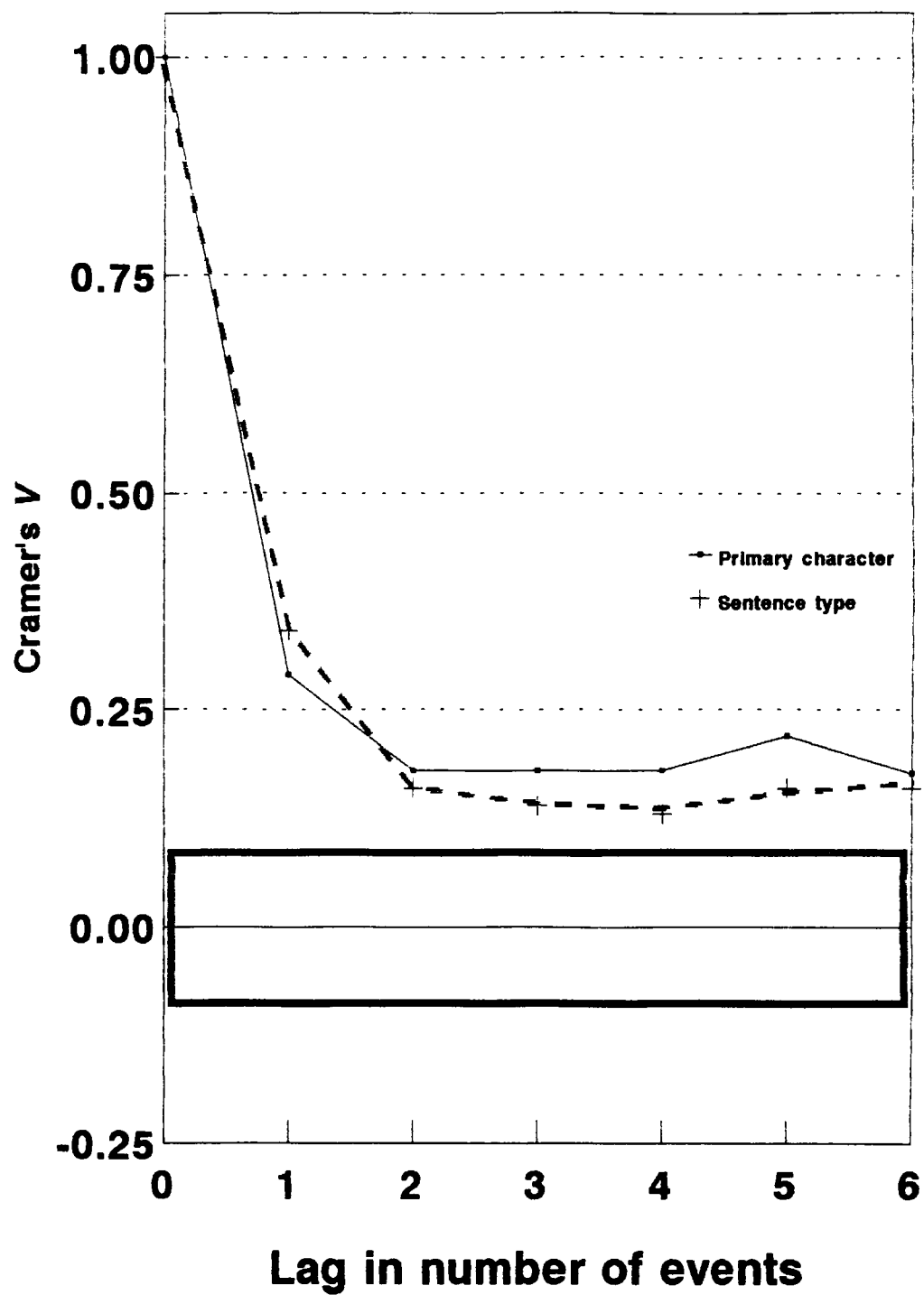


Figure 2. Serial Dependency in Primary Character and Sentence Type

Table 1
 Rated Behaviors for Each Variable Used
 to Classify Interchanges

Categories	Rated Behavior
THERAPIST SYNCHRONY	Synchrony Nonsynchrony
THERAPIST PRIMARY CHARACTER	Child & Therapist Child (self) Animal, object Child & parent(s) Parent(s) Child & sib(s)/ peer(s) Child & other(s) Other(s)
THERAPIST AFFECT	Neutral Negative Positive
CHILD TENSE (TIME FRAME)	Current Historic Future
CHILD SENTENCE TYPE	Descriptions Present Exchanges Coercive Interactions Non-coercive Interactions
CHILD AFFECT	Neutral Negative Positive
REALITY/FANTASY	Reality Simulation - Active Simulation - Passive Fiction - Active Fiction - Passive
CHILD PRIMARY CHARACTER	Child & Therapist Child (self) Animal, object Child & parent(s) Parent(s) Child & sib(s)/ peer(s) Child & other(s) Other(s)

Table 2
Inter-rater Agreement for 10% of the Sample
As rated by Two Observers

CATEGORY	KAPPA
TENSE (TIME FRAME)	.78
SENTENCE TYPE	.67
CHILD AFFECT	.72
REALITY/FANTASY	.91
CHILD PRIMARY CHARACTERS	.89
THERAPIST SYNCHRONY	.88
THERAPIST PRIMARY CHARACTER	.84
THERAPIST AFFECT	.72

Table 3
 Characteristics of Child Verbal Behavior

Child Categories	Rated Behavior	% of total N=450
TENSE (TIME FRAME)	Current	74.4%
	Historic	21.1%
	Future	4.2%
SENTENCE TYPE	Non-Relational Topic	
	Descriptions	43.8%
	Relational Topics	
	Present Exchanges	33.6%
	Coercive Interactions	13.6%
	Non-coercive Interact.	9.1%
CHILD AFFECT	Neutral	58.7%
	Negative	30.9%
	Positive	10.2%
REALITY/FANTASY	Reality	83.6%
	Simulation - Active	12.0%
	Simulation - Passive	0%
	Fiction - Active	4.2%
	Fiction - Passive	.2%
CHILD PRIMARY CHARACTERS	Child & Therapist	35.3%
	Child (self)	32.0%
	Animal, object	8.2%
	Child & parent(s)	6.4%
	Parent(s)	4.4%
	Child & sib(s)/ peer(s)	4.9%
	Child & other(s)	3.3%
	Other(s)	5.3%

Note: Percentages were based on the total sample. All variables were coded for each interchange, and categories were mutually exclusive. Totals differ from 100% due to rounding error in SPSS.

Table 4
 Characteristics of Therapist Verbal Behavior

Therapist Categories	Rated Behavior	% of total N=450
THERAPIST SYNCHRONY	Synchrony	65.8%
	Nonsynchrony	34.2%
PRIMARY CHARACTERS	Child & Therapist	24.7%
	Child	40.9%
	Animal, object	8.9%
	Parent(s) & child	8.0%
	Parent(s)	4.2%
	Child & sib(s)/ peer(s)	2.2%
	Child & other(s)	3.6%
	Other(s)	7.6%
THERAPIST AFFECT	Neutral	69.8%
	Negative	23.1%
	Positive	6.9%

Note: Percentages were based on the total sample. All variables were coded for each interchange, and categories were mutually exclusive. Totals differ from 100% due to rounding error in SPSS.

Table 5
Correlation Matrix of Selected Categories
Even Numbered Interchanges

	2	3	4
1. Therapist Emotionality	**-.48	-.05	-.08
2. Therapist Positive	-----	.07	.01
3. Session Number		-----	.01
4. Synchrony			-----

** $p \leq .001$, 2 tailed

Table 6
Correlation Matrix of Selected Categories
Odd Numbered Interchanges

	2	3	4
1. Therapist Emotionality	**-.47	-.06	*-.14
2. Therapist Positive	-----	.01	.12
3. Session Number		-----	.06
4. Synchrony			-----

** $p \leq .001$, 2 tailed
* $p \leq .05$, 2 tailed

Table 7
Therapist Synchrony and Subsequent Changes in Child Behavior
Odd Numbered Interchanges

Child Categories	% change Synchrony	% change Non-synch.	F Ratio	*F prob. odd data (df1,209)
Positivity Change	38%	55%	5.8587	.02
Emotionality Change	34%	49%	4.7292	.03
Tense Change	27%	34%	.8967	.34
Now, not now Change	26%	32%	.8760	.35
Total N Changes	31%	43%	4.7751	.03

* An odd/even split in the data sample was used to correct for autocorrelation. The last column reports the significance for F for the odd numbered data.

N is 210, not 225 due to missing data of lagged variables.

Table 8
Therapist Synchrony and Subsequent Changes in Child Behavior
Even Numbered Interchanges

Child Categories	% change Synchrony	% change Non-synch.	F Ratio	*F prob. odd data (df1,207)
Positivity Change	41%	53%	2.7739	.10
Emotionality Change	36%	47%	2.4112	.12
Tense Change	30%	38%	1.4634	.23
Now, not now Change	29%	36%	1.2725	.26
Total N Changes	34%	44%	3.6004	.06

* An odd/even split in the data sample was used to correct for autocorrelation. The last column reports the significance for F for the even numbered data.

N is 208, not 225 due to missing data of lagged variables.

Table 9
Therapist Affect and Subsequent Changes in Child Behavior
Odd Numbered Interchanges

Child Categories	% change Pos. Affect	% change Neutral	% change Neg. Affect	F Ratio	*Fprob. odd data (df2,208)
Positivity Change	50%	39%	54%	1.7780	.17
Emotionality Change	33%	35%	52%	2.3871	.09
Tense Change	58%	24%	39%	4.6053	.01
Now, not now change	50%	23%	39%	3.9426	.02
Total N dif.	48%	30%	46%	4.5575	.01

* An odd/even split in the data sample was used to correct for autocorrelation. The last column reports the significance for F for the odd numbered data.

N is 210, not 225 due to missing data of lagged variables.

Table 10
Therapist Affect and Subsequent Changes in Child Behavior
Even Numbered Interchanges

Child Categories	% change Pos. Affect	% change Neutral	% change Neg. Affect	F Ratio	*F prob. even data (df2,206)
Positivity Change	50%	40%	57%	2.6165	.08
Emotionality Change	31%	35%	57%	4.6577	.01
Tense Change	38%	35%	26%	.7480	.47
Now, not now change	31%	35%	24%	.9799	.38
Total N Changes	38%	36%	41%	.4489	.64

* An odd/even split in the data sample was used to correct for autocorrelation. The last column reports the significance for F for the even numbered data.

N is 208, not 225 due to missing data of lagged variables.

Table 11
Therapist Emotionality and
Subsequent Changes in Child Behavior
Odd Numbered Interchanges

Child Categories	% change-Th. Emotionality Absent	% change-Th. Emotionality Present	F Ratio	*F prob. odd data (df1,209)
Positivity Change	39%	53%	3.4980	.06
Emotionality Change	35%	48%	3.3268	.07
Tense Change	24%	43%	7.4430	.01
Now, not now change	23%	41%	7.3290	.01
Total N dif.	30%	47%	9.1349	.00

* An odd/even split in the data sample was used to correct for autocorrelation. The last column reports the significance for F for the odd numbered data.

N is 210, not 225 due to missing data of lagged variables.

Table 12
Therapist Emotionality and
Subsequent Changes in Child Behavior
Even Numbered Interchanges

Child Categories	% change-Th. Emotionality Absent	% change-Th. Emotionality Present	F Ratio	*F prob. even data (df1,207)
Positivity Change	40%	56%	4.9739	.03
Emotionality Change	35%	51%	5.6249	.02
Tense Change	35%	29%	.7491	.39
Now, not now change	35%	26%	1.6728	.20
Total N dif.	36%	40%	.7677	.38

* An odd/even split in the data sample was used to correct for autocorrelation. The last column reports the significance for F for the even numbered data.

N is 208, not 225 due to missing data of lagged variables.

VITA

Karen Elizabeth Bartley was born in Knoxville, Tennessee on November 27, 1952. At age three, she moved to Richmond, Virginia, and at age sixteen moved to Annandale, Virginia where she completed her high school education at Thomas Jefferson High School. She then entered Northern Virginia Community College, transferring to Brigham Young University where she completed a Bachelor of Science degree in Early Childhood Education in 1976. She returned to Knoxville after graduation, and was employed by the Knoxville City School System. Karen taught kindergarten, first and second grades for ten years. She also attended graduate classes at the University of Tennessee during this time, receiving the degree of Master of Science in Reading Education in August, 1983. In 1986, she entered the Clinical Psychology program at University of Tennessee at Knoxville. As part of her training, she completed a one year, full time internship with the Child Study Center at Arkansas Children's Hospital in Little Rock, Arkansas. Karen received the Doctor of Philosophy degree in Psychology in May, 1992.