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Shawn L. Thurber  
*Brigham Young University - Provo*

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THE EFFECTS OF DIRECT SUPERVISION ON THERAPIST BEHAVIOR:  
AN INITIAL FUNCTIONAL ANALYSIS

by

Shawn L. Thurber

A dissertation submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Marriage and Family Therapy Program

School of Family Life

Brigham Young University

February 2005

BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a dissertation submitted by

Shawn L. Thurber

This dissertation has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

\_\_\_\_\_  
Date

\_\_\_\_\_  
D. Eugene Mead, Chair

\_\_\_\_\_  
Date

\_\_\_\_\_  
Michael J. Lambert

\_\_\_\_\_  
Date

\_\_\_\_\_  
Richard B. Miller

\_\_\_\_\_  
Date

\_\_\_\_\_  
James M. Harper

\_\_\_\_\_  
Date

\_\_\_\_\_  
Robert F. Stahmann

BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduate committee, I have read the dissertation of Shawn L. Thurber in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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Date

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D. Eugene Mead  
Chair, Graduate Committee

Accepted for the Program

---

Robert F. Stahmann  
Chair, Marriage and Family Therapy

Accepted for the School

---

James M. Harper  
Director, School of Family Life

## ABSTRACT

### THE EFFECTS OF DIRECT SUPERVISION ON THERAPIST BEHAVIOR: A FUNCTIONAL ANALYSIS

Shawn L. Thurber

Marriage and Family Therapy Program

School of Family Life

Doctor of Philosophy

Live (Direct) Supervision has always been key to training therapists. However, little research has been done to determine which type of direct supervision is most effective in changing therapist behavior. This study compared bug-in-the-ear (BITE), phone-in, and computer assisted (CA) supervision. The purpose of this study was to (a) complete functional analysis of each supervision type via an alternating feedback session, to determine each therapists' most effective form of supervision; (b) determine the effect of using the most-effective form of supervision on the therapists' adherence to treatment protocols during follow-up sessions; (c) determine the effect of therapist adherence on client in-session behaviors, and outcome assessments.

Results of the functional analysis indicated that phone-in supervisory feedback

was the least effective form of supervision. BITE and CA supervision were both found to be effective for at least one therapist. In follow-up sessions BITE supervision did not create sustained changes in overall adherence. CA feedback appeared to maintain overall therapist adherence. In affecting changes to client behavior and outcome scores BITE supervision gave mixed results. CA supervision created desired changes in client behaviors and outcome assessments.

For practitioners in the field, this study demonstrates that client behavior does not improve without therapist intervention. Even when client behavior in session appears to be improving, marital distress may increase. This is especially true when therapist adherence does not improve. This study further demonstrates that when the therapists did not intervene appropriately the clients either worsened, or at best, stayed the same. When the therapists made even small improvements client behavior improved. Improving adherence to treatment protocols will always serve the best interest of the client.

## ACKNOWLEDGMENTS

My deepest appreciation to Gene. We've come along way and finally were through.

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## Chapter 1: Introduction

Very little is known about the effect of clinical supervision on therapist behaviors. It is not known which type of direct live supervision—phone in, bug-in-the-ear, or computer screen—function as the most effective reinforcer/correction agent for therapist adherence to treatment manuals or protocols. Little has been done to examine which form of supervisory feedback works best to change therapist behavior. If supervisors knew which type of supervision feedback was best for an individual therapist they could use this method and provide more effective supervision. There is a move in the field of Marriage and Family Therapy (MFT) towards using the most effective therapy available (Denton, Walsh, & Daniel, 2002; Pinsoff & Wynne, 2000; Wampold, 2001). This movement should be accompanied by a parallel movement in supervision towards utilizing the most effective type of supervision (Storm, Todd, Sprenkle, & Morgan, 2001). Once the effects of certain types of supervisory interventions are known then the effects of that type of supervisory intervention can be studied in relation to client behavior.

This study utilized a small N, repeated measures, alternating treatment design (Hayes, Barlow, & Nelson-Gray, 1999) to test which method of direct live supervision—phone ins, bug-in-the-ear, or computer-assisted feedback—worked best at increasing and maintaining therapist adherence to conjoint couple therapy using Gottman's (1999) text *The Marriage Clinic*. Once the most effective method of direct supervision was determined for each individual therapist, it was used to supervise that therapist over the course of several subsequent therapy sessions. The continued

supervision included measures of therapist behaviors and adherence in response to the clients' behavior. This information was used to verify the effectiveness of the supervision in increasing therapist adherence to the treatment protocol. The data also included behavioral measures of client behavior, thus allowing for measurement of the relationship between changes in therapist behavior and changes in client behavior. This allowed for measurement of the effectiveness of supervision to change behavior of the therapist which in turn was associated with changes in client behaviors (Milne, Pilkington, Gracie, & James, 2003) .

Supervision The goal of training therapists is to increase their knowledge base and their ability to execute interventions in-session (Mead, 1990). One of the most important measures of therapist behavior in-session is adherence to treatment protocols (Calhoun, Moras, Pilkonis, & Rehm, 1998; Wampold, 2001). Adherence is based on expected therapist behaviors as established in a treatment manual. In-session therapist behaviors are compared to the expected in-session behaviors according to the treatment manual. When therapists are able to perform treatment at a pre-determined level of adherence they are considered competent entry level therapists.

Supervisors have used several methods for delivering feedback to therapist trainees. In general supervisory feedback modes can be grouped into direct live supervision or delayed supervision (Goodyear & Nelson, 1997). During delayed supervision therapists are given feedback after a therapy session is over. The data the supervisor uses in delayed supervision comes from either the therapists' self-report or from observing the session via audio or video recordings. Direct supervision occurs

when the supervisor observes a session in progress and gives feedback to the therapist during and/or immediately following the session.

Modes of Feedback The mode of feedback delivery often determines what the feedback looks like. In videotape supervision feedback is usually in the form of comments made while observing the tape. This feedback may be interactive as the supervisor asks the therapist to comment on the session being observed and then make comments based on the therapist's perspective and the supervisor's own perspective.

Interventions during direct supervision tend to be more intrusive than others. It has been suggested that knocks on the door and phone-ins may be the most intrusive. Radio transmitted, or "Bug-in-the-ear" (BITE), while intrusive to the therapist, is less intrusive for clients. Finally, computer-assisted feedback may be the least intrusive of the three methods of direct therapist feedback (Smith, Mead, & Kinsella, 1998). Feedback during direct supervision often involves the supervisor interrupting the session to give the therapist suggestions about the therapist's and/or the clients' behaviors. Since interrupting the session is very intrusive to both therapists and clients, supervisors may be reluctant to interrupt to praise, and thus reinforce the therapist for correct responses, and therefore limit their interventions to corrections.

A computer monitor set behind a client may be less intrusive to a treatment session than BITE or phone-in interventions; therefore, supervisors may feel as free to reinforce therapist's "doing it right" as they are to offer corrective feedback to the therapist. By reinforcing therapist appropriate behavior, the supervisor increases the likelihood that the therapist will repeat that behavior (Skinner, 1953). As stated above,

when using phone-ins the supervisor is often loathe to call in simply to reinforce the therapist. Instead phone-ins generally come when the supervisor determines that the therapist needs help. When phone-ins are done only to correct behavior there are two effects. First, the therapist can become operantly conditioned to fear supervision. This happens as they associate the phone-in with a punishing feeling of being corrected. Secondly, the therapist is expected to reinforce themselves for performing appropriate interventions (Bickman, 1999; Dennin & Ellis, 2003; Kluger & DeNisi, 1998). This may be very difficult for the neophyte therapist since performing appropriate therapeutic interventions may not be inherently reinforcing. In other words, sometimes an appropriate intervention brings about aversive reactions from the clients. In addition, strong emotional responses on the part of the clients, generally considered an important part of therapy, may evoke strong emotions in the therapist which some beginning therapist would like to avoid (Frank & Frank, 1991; Wampold, 2001). Part of the supervisor's task is to teach therapists how to complete appropriate interventions in the face of aversive stimuli. BITE reinforcement may help to accomplish this.

Like BITE interventions, computer-assisted feedback may be used to reinforce appropriate therapist behavior as well as offering corrective behavior. Computer-assisted feedback has been done in the form of: (a) icons representing in-session dynamics (Tracy et al., 1995, April), (b) printed messages to the therapist (Neukreg, 1991; Scherl & Haley, 2000), (c) graphs representing therapist adherence (Follete & Callaghan, 1995), and (d) numeric codes representing client and therapist in-session behavior (Smith, et al., 1998).

One purpose of this study was to perform a functional analysis ( O'Neill, et al.,

1990) of the effectiveness of phone-ins, BITE, and computer-assisted feedback for individual therapists. In a functional analysis the function of a stimulus is examined in the context of its direct effect on the behavior in question (Harding, et al., 1994). In other words, functional analysis consists of systematically controlling the antecedent and observing the effect on the consequent behavior. In this study the antecedent being systematically controlled was the supervisor's feedback to the therapist. The consequent behavior of interest was the therapist's adherence to the treatment plan. As the form of feedback was alternated the effect of each form can be seen by examining the therapist's percentage of adherence by looking for changes in level, trend or variation (Hayes, et al., 1999).

## Chapter 2: Review of Literature

Effects of supervision on therapists' in-session behaviors. Lambert, Whipple, Smart, Vermeersch, Nielson, and Hawkins (2001) found that clients of therapists who received feedback about client progress improved two-to-one over clients of therapists who did not receive feedback. Furthermore, the clients of therapists who received feedback deteriorated far less often (one third fewer deteriorations). Lambert, Hansen, and Finch (2001) have suggested the need for a system for monitoring how feedback affects therapist behaviors in-session. While feedback has been found to be cost effective, the most effective process for delivering feedback needs further research.

Perceptions of supervision. Numerous studies provide information about therapists' perceptions of supervision (e.g. Anderson, Scholssberg, & Rigazio-DiGilio, 2000; Shanfield, Heatherly & Matthes, 2001; Wong, 1999). These studies highlight the perception that sympathetic supervisors are more helpful (Shanfield, et al., 2001) although the trainees' ratings of helpfulness did not correlate with independent experts' ratings of helpfulness of videotaped supervision.

In studying direct supervision Wong (1999) documented high anxiety felt by trainees during supervision. However, Wong also found evidence for the decrease of this anxiety over time and practice. It may be that a therapist's own anxiety changes their perception of supervision helpfulness. Anderson and colleagues (2000) found that trainees self-reported best supervision experiences were more likely to occur during live (direct) supervision than worst experiences. Indeed, worst experiences were more likely to be associated with case report supervision. It appears that once therapists have

overcome the anxiety associated with direct supervision they are more likely to report their best experiences in supervision from this modality.

Other studies provide information about supervision based on surveys of clinical directors (Carlozzi, Romans, Boswell, Ferguson, & Whisenhunt, 1997). Carlozzi and colleagues found that clinical directors of Marriage and Family Therapy (MFT) programs thought of videotape and direct supervision as the most helpful forms of supervision. Their data showed that program directors report using videotape and direct supervision more often than co-therapy, audiotape or case report supervision. However, this data has not been analyzed for significant differences.

Effects of direct supervision on therapists: Mauzey and Erdman (1997) and Wong (1999) found evidence that live supervision increased anxiety in trainees prior to their supervision experience. In contrast Bistline, Matthews & Frieden (1985) demonstrated that live supervision did not have negative effects on therapist's anxiety, genuineness, responsiveness, immediacy, or use of verbal and non-verbal cues. Perhaps as an explanation for these discrepant findings, Frankel and Piercy (1990), demonstrated that when supervisors use more teaching and supporting behaviors therapists tend to increased these behaviors in-session. As further explanation Mauzey, Harris and Trusty (2000) found that increases in therapist trainee anxiety was due more to the therapist's personality trait of anxiety and anger, and not to the method of supervision. Others have found that breaches in the therapist-supervisor relationship results in less effective supervision as perceived by the therapist trainee (Anderson et al., 2000; Gray, Ladany, Walker, & Ancis, 2001; Ladany, Hill, Corbett, & Nutt, 1996; Nelson & Friedlander 2001).

In an integrative review of the supervision literature, Ellis and Ladany (1997) found that very few therapist or supervisor variables have been studied sufficiently. Ellis and Ladany studied therapist-supervisor gender matches, racial matching, theoretical matching, and environmental conditions, therapist cognitive development, therapist cognitive style, and therapist development. They stated that while these appear to be important variables no inferences can be made about these variables based on the studies reviewed. They did state that therapist reactance potential, which they define as a the extent to which a therapist resists structure, was statistically significant. Ellis and Ladany (1997) inferred that reactance potential, a personality variable, is an important variable in determining the effects of supervision.

In another review of the literature, Lambert and Ogles (1997) concluded that the most useful means of measuring therapist improvement is through observing specific, observable, therapist behaviors. They also state that the best measures are done while the therapist works with actual clients, not role play situations. However, they give no examples of this type of study. While there is little research connecting supervision to changes in clients (Holloway & Neufeldt, 1995), the research conducted to date does indicate the impact of supervision on client outcomes (Milne & James, 2000). More recently Moorhouse and Carr (2002) reported no connection between supervision and client cooperation. However, this study does not report any effects for client outcome. Again, research has not parsed out the effectiveness of specific supervision feedback forms on client outcomes.

Computer Assisted Supervision Computer assisted supervision has been reviewed

by Smith, et al. (1998) and others (Scherl & Haley, 2000), and tested by Thurber (2001), Zitzman (2000) and Kinsella (1999). Smith et al. (1998), and Scherl and Haley (2000) reported success in reinforcing and correcting therapist behaviors in-session. Thurber (2001) and Zitzman (2000) both found limited evidence of the ability of computer-assisted supervision to create and maintain changes in therapist behaviors. This limited evidence of relationship between supervisor intervention and therapist behaviors may have been due to the population studied. The studies cited were conducted with clients experiencing severe marital relational problems. These studies suggest the need for therapists to become more sensitized to feedback which instructs them to reinforce their clients for performing more functional behavior. Over time therapists may tend to stop reinforcing their clients' positive behaviors. Supervisors need to ensure that their trainees are reinforced for reinforcing their clients.

Phone-in Supervision Guidelines for making phone-in interventions more effective have been published (Wright, 1986; Lewis & Rohrbaugh, 1989). Wright (1986) based her suggestions on her own viewing of videotapes of 150 phone-ins and their immediate effect on therapist behaviors. She suggests practicing phone-ins ahead of time, so that therapists are ready to use the phone in-session. Wright also suggests limiting phone-ins to 5 per session, using positive reinforcement at the beginning of the intervention, being clear and concise, keeping content of the phone-in to a level the therapist can understand, and limiting length of phone-ins to 25 seconds. Lewis and Rohrbaugh (1989) offer similar suggestions based on a survey of Virginia therapists' perceptions of phone-in interventions.

It appears that phone-ins are generally considered to be corrective in nature. While supervisors are encouraged to reinforce good behavior, it is generally recommended that this be placed at the beginning of a corrective phone-in (Wright, 1986). No provisions are discussed for making phone-ins wholly to reinforce the therapist's correct behavior. This may explain why therapists generally report an increase in anxiety when phone-in supervision is used (Mauzey & Erdman, 1997). Mauzey & Erdman (1997) further report that in spite of anxiety therapists generally find phone-ins more helpful than distracting. However, Moorhouse and Carr (1999) found therapist-supervisor collaboration decreased following phone-in interventions.

Bug-In-The-Ear Supervision Joseph Stumphauzer (1971) published a description of a \$2 Bug-In-The-Ear (BITE) system, consisting of a cassette recorder, a microphone with an on/off switch, and an earpiece with a long extension cord. This system could be used during training of therapist behavior. A few years later three reports were published of inexpensive wireless, or radiotelemetry BITE systems (Gordon, 1975; Haney, Sewell, Edelstein, & Sartin, 1975; Miklich, 1975). Research soon began on the effectiveness of BITE supervision (McClure & Vriend, 1976; Salvendy, 1984). In a review of the literature, Gallant and Thyer (1989) concluded that research needed to be conducted to support claims that BITE feedback was useful in training therapists.

BITE supervision was subsequently shown to provide immediate improvement in therapist in-session behavior, when it targeted specific clinical skills (Gallant, Thyer, & Bailey, 1991). In addition BITE supervision has been found to be effective at reinforcing positive therapist behaviors (Gallant, Thyer & Bailey, 1991; Jumper, 1999) BITE

supervision has also been shown to increase therapist self-efficacy (Jumper, 1999).

Summary It appears that research conducted on the effectiveness of supervision has lacked methodological rigor (Ellis and Ladany, 1997; Milne & James, 2000). In addition, those studies which have been done more systematically have often failed to carry out investigations of the connection between supervision and client outcomes. This is surprising as this is often considered the “acid test” of supervisory effectiveness (Avis & Sprenkle, 1990; Ellis & Ladany, 1997; Holloway & Hosford, 1983; Holloway & Neufeldt, 1995; Matarazzo, 1978; Stein & Lambert, 1995). Recently the connection between supervision mentors, supervisors, and clients behavior has been demonstrated with 28 studies reviewed by Milne and James (2002). Although the majority of these studies were with children with learning disabilities the four studies conducted with adult psychotherapy (Alpher, 1991; Couchon & Bernard, 1984; Friedlander, Siegel, & Brenock, 1989; Sandell, 1985), showed similar results.

If supervisors are to ensure that they are using the best methods of supervision, research needs to be done that indicates which type of supervision works best at increasing therapist adherence (Mauzey et al., 2000; Storm, et al., 2001). While some dismantling of supervision has been done (Lambert & Ogles, 1997), there does not appear to be any comparison between types of direct live supervision techniques (Mauzey, et al., 2000). This study is an attempt to complete a head-to-head comparison of three supervisory feedback forms.

Can we determine, in one alternating feedback session (Hayes et al., 1999), which supervision mode is most effective at increasing therapist adherence to protocol? Once

the most effective mode of supervision is detected and employed, what is the impact of therapist adherence on client outcomes over the course of several subsequent therapy sessions?

## Chapter 3. Method

### Participants

Two groups of participants were used in this study: therapist trainees and clients. The therapists were first year master's degree seeking students in the Brigham Young University Marriage and Family Therapy Programs. Three therapists participated in the study, two females and one male. The average age for the therapists was 25 with 74.3 hours delivering therapy, and 63.9 hours receiving supervision prior to the study. During the first semester all students were trained in basic therapist skills and delivery of a science-based marital therapy (Gottman, 1999). They were trained to use feedback from all three direct supervisory methods, bug-in-the-ear, phone-ins, and computer-assisted feedback. This was a convenience sample based on volunteers. Five students agreed to participate in the study. However, due to attrition and scheduling problems, only three therapists completed the study. Therapists signed a consent form to participate (Appendix B).

The second group of participants were the clients. Three client couples assigned to the participating therapists at the Brigham Young University Comprehensive Clinic consented to participation in the study. Clients passed through the regular intake process established by the Clinic. Thus, none of the clients in the study presented with issues of suicidal ideation or intent, alcohol or drug abuse, domestic violence, or were court mandated to therapy. Clients signed an informed consent form to participate in the study (see Appendix A) and received free therapy. Couple 1 consisted of a 36 year old wife and a 34 year old husband. Both were white and reported Latter-Day Saint (LDS)

religious orientation. At the time of the study they had been married for one year and reported 8-12 months of previous marital therapy. Couple 2 consisted of a 33 year old wife and husband. Both were white, reported an LDS religious orientation, and no previous therapy experience. Couple 2 had been married for 10 years at the time of the study. Couple 3 consisted of a 23 year old wife with a husband age approximately 25 years of age. Both were white, did not report on their religious orientation, and reported no previous therapy experience. At the time of the study Couple 3 had been married for 2 months.

For couples 1 and 3 the initial Revised Dyadic Adjustment Scale (RDAS: Busby, Christensen, Crane, & Larson, 1995) scores were below the clinical cut-off (43) for adjustment for both husband and wife (Couple 1: husband 31, wife 29; Couple 2: husband 41, wife 41). For couple 2 both spouses had RDAS scores within the uncertainty band (43-53) (husband 51, wife 45) indicating that their adjustment could not be clinically determined to be in either the maritally distressed or non-distressed population.

Clinical Supervision for the study was provided by the two researchers. The decision for the researchers to act as supervisors came after much deliberation. Due to limited funds and time constraints, the onus of training independent supervisors was too great. The investigators in this project have 35 years and 1 year of supervision experience (DEM and SLT respectively). One is an AAMFT Approved Supervisor and the other is a Supervisor-In-Training. Both have written about supervision (Mead, 1990; Thurber, 2001). This experience could not be quickly replicated. There was some worry about contamination of the research by supervisor bias or what Wampold (2001) refers to as

allegiance. However, it is not uncommon in supervision research for investigators to act as supervisors (Ratliff, Wampler, & Morris, 2000; Wright, 1986; Scherl & Haley, 2000), although there are inherent risks of expectation or allegiance contamination. The supervisors worked in close collaboration to encourage each other to be impartial to each condition. The fact that only one therapist responded most favorably to computer-assisted supervision feedback proved some support for the notion that the supervisors were successful in their attempts to be unbiased.

### Setting/Apparatus

All therapy sessions used in this study were conducted at the Brigham Young University Comprehensive Clinic. The Comprehensive Clinic is a mental health clinic administered by faculty and graduate students from the clinical psychology, marriage and family therapy, and social work programs. Supervisors observed all sessions from behind a one-way mirror. The therapy rooms are equipped with wall mounted video cameras. All sessions were videotaped. The therapy rooms are also equipped with intercom phones. A computer monitor was placed in the therapy room behind the clients. This was connected to a personal computer (PC) via an extension cable. The PC was used to collect behavioral data during all sessions, and in all forms of supervisory feedback.

CRB Coding System The CRB coding system focuses on the clients' clinically relevant behaviors and the therapist's herapeutic ntervention behaviors (TIBs) (Mead & Smith, unpublished). The software was developed to give therapists feedback based on Kohlenberg and Tsai's (1991) clinically relevant behaviors (CRB). There are four CRB codes and four TIB codes. The coding system is as follows: CRB 1 represents the client

complaining. CRB 2 represents the clients attempting solutions to problems. CRB 3 represents clients recognizing relationship contingencies. CRB 4 represents clients off-task or listening to the therapist. During this study only data relating to CRB 1, CRB 2 and CRB 3, will be reported. The CRB 4 data is confounded, as it is impossible to distinguish between listening to the therapist and being off topic. The first three CRBs are the variables of interest in seeing improvement client behavior.

TIB 1 represents the therapist listening to the client (Mead & Smith, in preparation). TIB 2 represents the therapist structuring the session or speaking. TIB 3 represents the therapist reinforcing a client's behavior. TIB 4 represents the therapist being off-task.

The CRB system also includes a code for Therapy Task (TT) (Mead & Smith, in preparation). TT is established prior to the session and is coded as follows. TT1 represents the therapist collecting a client data base. TT2 represents the therapist establishing the client's complaints and goals. TT3 is coded when the therapist is establishing a treatment plan with the clients. TT4 represents the therapist delivering the planned treatment. TT5 represents the therapist evaluating treatment delivery and impact on clients. TT 6 is coded when the therapist is terminating the planned treatment (Mead, 1990).

The CRB coding system also includes Expected Therapeutic Intervention Behaviors (ETIBs) (Mead & Smith, in preparation). ETIB is established using Table 1. During a given TT when the clients perform any CRB there is a pre-determined expected therapist behavior. For example, during treatment (TT 4) when a client complains (CRB

Table 1. Expectations for Therapeutic Intervention Behaviors as a Function of the Therapy Tasks and the Client’s Clinically Relevant Behavior.

THERAPY TASKS	CLINICALLY RELEVANT BEHAVIOR	EXPECTED THERAPEUTIC INTERVENTION BEHAVIOR
Task 1 and 2	If CRB1	Then ETIB1
	CRB2	ETIB1
	CRB3	ETIB1
	CRB4	ETIB2
Task 3	If CRB1	Then ETIB2
	CRB2	ETIB3
	CRB3	ETIB3
	CRB4	ETIB2
Tasks 4 and 5	If CRB1	Then ETIB2
	CRB2	ETIB3
	CRB3	ETIB3
	CRB4	ETIB2
Task 6	If CRB1	Then ETIB1
	CRB2	ETIB3
	CRB3	ETIB3
	CRB4	ETIB1

Therapy Tasks (Mead, 1990): Task 1, Establishing Client Data Base; Task 2, Establishing Complaints/Goals; Task 3, Establishing a Treatment Plan; Task 4, Carrying Out the Treatment Plan; Task 5, Evaluating Treatment Delivery and Impact; Task 6, Terminating Therapy.

Clinically Relevant Behaviors (Kohlenberg & Tsai, 1991): CRB1: Expressing Criticism; CRB2: Attempting Solutions; CRB3: Recognizing Relational Contingencies; CRB4: Getting Off-Track or Listening to Therapist.

Therapeutic Intervention Behaviors (Kohlenberg & Tsai, 1991): TIB1, Observing-Listening for CRBs; TIB2, Structuring by Eliciting CRBs; TIB3, Reinforcing CRB2s and CRB3s; TIB4, Observing and Attending to the Therapist’s Own Affect, Behavior, and Cognition.

1) the ETIB is for the therapist to structure the session (ETIB2) to increase the probability of the clients performing CRB2s (exploring solutions) and CRB3s (exploring relationship processes between the partners). The PC keeps a running record of the coded behavior the supervisor enters during the session. This information consists of the TT, the clients CRBs, the ETIBs, the TIBs and whether or not the TIB matched the ETIB. Based on this information a rating for therapist adherence to treatment is calculated by estimating the percentage of therapist's TIB matches the ETIB. This is the On-Target (OT) percentage.

This coding system was used to give feedback in all supervisory conditions, although CA was used only for Therapist Two. The therapists were thoroughly trained on the use of this coding system as part of their first semester pre-practicum.

Computer-Assisted Supervision When CA supervisory feedback was in use the monitor placed behind the clients was switched on so the therapist could receive feedback. The supervisor observed the session from behind the one-way screen and coded the clients' and the therapist's behavior every 6 seconds. The software program cued the supervisor to enter a code by providing a beep. The *CRB Tracker* (Smith & Mead, 1996) was designed to show the TT, CRBs, ETIB, TIBS and OT behaviors on one computer monitor. On the screen the therapist was shown two identical squares each divided into four quadrants. Each quadrant is numbered 1 through 4 starting in the upper left quadrant and proceeding clockwise. The left square is designated as the CRB square and the right square as the TIB square. The coded CRB number was circled in the left square and the ETIB number was circled in the right square. The TIB was highlighted by a crosshair symbol. When the TIB matches the TIB the therapist was "on-target" and the

cross and circle converge to form a completed on-target symbol. For example, during a treatment session (TT4), if one client criticized the other (CRB 1) the number 1 in the left square was circled. Simultaneously the number 2 in the right square (ETIB 2 = structure the session) was highlighted by a circle. If the therapist was structuring the session then the number 2 in the right square was crossed creating an on-target symbol over the number 2, indicating to the therapist that their intervention was appropriate. If the therapist performed listening (TIB 1) during this moment the number 1 was crossed. The therapist could then see that the circle and cross are not aligned, signaling the need to change their behavior to match the expected intervention behavior.

Bug-in-the-ear supervision. Therapists were asked to wear a wireless Bug-In-The-Ear (BITE) device during the entire functional analysis session. These were wireless handheld shortwave “Walkie-Talkies.” The therapists were provided with a “hands-free” ear piece connected to the walkie-talkie. This allowed the therapist to hear communications from the supervisor with minimal intrusion. During the alternating feedback session the supervisor was expected to intervene at least twice during each of the 10 minute segments designated as BITE segments. When the supervisor decided to intervene they would wait for a pause in the conversation in the therapy room, depress the “talk” button and give feedback to the therapist. The supervisory feedback took the form of verbalized CRB codes. For example, if a client was being critical and the therapist responded by interrupting the client and asking them to restate the criticism, the supervisor might have called in and said “That was a criticism and you structured, that was good.” If the therapist listened, but did not structure the session the supervisor might

have said “That was a criticism. You should structure the session.”

Phone-in supervision The phone-in supervision was conducted using intercom phones between the supervision booth and the therapy rooms. Again, the supervisor was expected to intervene twice in each 10 minute segment designated as a phone-in segment. The supervisor would wait for a pause in the session, then ring the intercom phone, thus signaling the therapist that the supervisor wished to intervene. The therapist was then expected to briefly stop the session, answer the phone, hear the feedback and then continue with the session. The supervisor’s phone-in interventions were similar to that described above for BITE interventions. For example, if the clients were calmly discussing a recent fight, and were actively taking responsibility, while the therapist reinforced, the supervisor would wait for this interaction to end, ring the intercom and say to the therapist “The clients are recognizing relationship contingencies and you are doing an excellent job of reinforcing them. Keep up the good work.” However, if the therapist only listened to the clients without reinforcing them, the supervisor might have said “The clients are recognizing relationship contingencies and need to be reinforced.”

### Procedure

During the first semester in the BYU Marriage and Family Therapy master’s program all students are required to enroll in a pre-practicum course. As part of the curriculum for this course students are taught to use the CRB coding system. They are taught to recognize client CRBs. They are also taught to recognize and perform appropriate TIBs. During in-class skill labs students practice receiving feedback via phone-ins on the intercom phones, the BITE radio system, and the computer-assisted

feedback system. The students were trained first in role-play situations, and later with couples who volunteered to receive marital check ups.

In the second semester of training five students from the initial cohort were asked to volunteer to be supervised in the research practicum. These students were required to have direct supervision of their clients. Each student was asked to enlist the help of one marital case. The first session with the clients was an intake session during which the therapist collected a problem statement from each spouse and took a marital history. The therapists also asked the clients to complete a problem solving exercise while the therapist observed behind the one-way mirror. At the end of the first session clients were asked to complete an assessment battery which is typically used in marital therapy (Gottman, 1999). This battery consisted of the Marital Status Inventory (MSI: Weiss & Cerrato, 1980), the Revised Dyadic Adjustment Scale (RDAS: Busby, Christensen, Crane, & Larson, 1995), the Conflict Tactics Scale 2 (CTS2: Strauss, Hamby, McCoy, & Sugarman, 1996) and the Brief Screen for Depression (BSD: Hakstian, & McLean, 1989). These instruments are described in the Measures section below.

During the second session the therapist reported the results of the assessment session observations and the assessments completed between sessions. If the couple qualified they were invited to participate in the study. They were also informed that they would be receiving the latest marital therapy (Gottman, 1999). Clients were offered free therapy as incentive. Clients were offered continued treatment if they declined to participate. They were asked to sign a consent form if they agreed to participate

(Appendix A). The therapist would then scheduled a two hour treatment session with the couple.

Alternating supervision feedback. During the alternating supervision feedback session the supervisors observed therapy from behind the one-way mirror. One supervisor was responsible for operating the *CRB Tracker*, and the other was responsible to give BITE and phone-in feedback. After 10 minutes of observation without coding the supervisor began to code the session using the *CRB Tracker*. *CRB Tracker* coding continued during the entire session to provide a record of the therapist's and the clients' behaviors for later analysis. However, when the therapist was not scheduled to receive computer-assisted feedback supervision, the CRB Tracker codes did not appear on the computer screen which was behind the clients. Following procedures suggested by Hayes et al. (1999) once coding began the first 10 minutes of coding was done without feedback given to the therapist. This acted as a baseline for comparisons to later segments. In each succeeding 10 minute segment the therapist received one of the three types of supervision, phone-in, BITE, or computer-assisted feedback. The supervision types were assigned randomly, using a schedule created using random draw assignments, with no one type of feedback being allowed to follow itself. The random assignment was made before the session. Each supervision type was repeated twice. Finally, at the end of the session, another 10 minutes of baseline coding was taken without supervision feedback.

During each 10 minute feedback segment therapists received either bug-in-the-ear (BITE) feedback, phone-in feedback , or computer-assisted feedback. As stated above,

during any 10 minute block of phone-ins or BITE interventions at least two brief interventions were called in to the therapist. This followed suggested protocol for the both the BITE (Moorhouse, & Carr, 1999) and the phone-in feedback systems (Wright, 1986). As stated earlier the called-in feedback given during the BITE or phone-in interventions was in the form of verbal labels which were similar to the CRB/TIB codes presented on-screen during computer-assisted feedback. For example, if during TT4 (delivering treatment) the clients were seeking solutions CRB 2 and the therapist was performing TIB 1(listening), the expected behavior was ETIB 3 (reinforce client behavior). The supervisor would either ring the phone intercom or speak into the BITE system and state “The clients are seeking solutions, please reinforce them.”

In all three types of supervision, therapists received reinforcement for on-target responses to the clients, that is, for appropriate therapeutic interventions. For example a therapist might be told, “The clients are complaining while you are listening. Please try structuring the session.” Or, “The clients are recognizing relationship contingencies, and you are doing an excellent job of reinforcing them. Keep up the good work.”

Based on the results of the alternating supervision feedback session, the most effective method of feedback for increasing and maintaining therapist adherence for each individual therapist was determined by examining the changes in therapist behavior during each segment of each type of supervision. The most effective method of supervision for each therapist was that which increased, or maintained their adherence to the treatment protocols at the highest percentages. This functional analytic style of research (Harding, et al., 1994) allowed for the assessment of the effects of each type of

feedback form on therapist behavior.

Supervision with each therapist's most effective type of feedback. Therapists 2 and 3 were observed and supervised for 5 follow-up sessions, and Therapist One for three follow-up sessions. The discrepancy in follow-up sessions was due to the late start date for Therapist One. Only three follow-up sessions could be completed before the end of the study. Supervision was conducted utilizing the mode of supervision found to be most effective for each therapist during the alternating supervision feedback or functional analysis session. During the follow-up treatment sessions the supervisor not only used the supervision mode that was most effective for that therapist, they also continued to track therapist and client in-session behavior using the PC and *CRB Tracker* software described above. In this way the effect of the supervision mode on therapist TIBs and client behavior CRBs could be observed over the course of these sessions.

### Measures

Several Independent Variables were measured. The IV in the first phase of the study was the type of supervision being utilized, BITE, phone-ins, computer assisted feedback. The main Dependent Variable (DV) was therapist adherence. This was measured by totaling the number of OT interventions performed by the therapist when the clients performed CRB 1, CRB 2 and CRB 3 and dividing by the total number of interventions used when the clients performed these behaviors. This yielded an adherence score in the form of percentage of Total On-Target behaviors. During Phase One, each data point represents the average OT response for the 10 minute phase. Therefore, each data point represents approximately, 100 coded moments (the supervisor

coded therapist and client behavior every 6 seconds). Adherence percentages can vary from 0 to 100%. This data was reported for the alternating feedback sessions and was used to determine which supervision mode was most effective for each therapist.

During the second phase of the study adherence percentages for the follow-up sessions became the IV. The DVs were client behaviors in session, and outcome assessments. Client behaviors were measured by percentages of complaining (CRB 1), attempting solutions (CRB 2), and recognizing relationship contingencies (CRB 3), performed in-session. Percentages were calculated by dividing the number of each type of behavior and dividing by the total number of behaviors. As stated by Lambert, Hansen & Finch (2001) the most important variables in measuring the effectiveness of therapy are client outcomes. Clients in this study were asked to complete an assessment battery which contained the Marital Status Inventory (MSI: Weiss & Cerrato, 1980), the Revised Dyadic Adjustment Scale (RDAS: Busby, et al. , 1995), the Conflict Tactics Scale 2 (CTS2: Strauss, Hamby, McCoy, & Sugarman, 1996) and the Brief Screen for Depression (BSD: Hakstian & McLean, 1989). Each week clients were asked to complete an RDAS. This gave a measure of week-to-week changes in the clients' marital adjustment. Clients were also asked to complete the Outcome Questionnaire-45 (OQ-45:Lambert et al., 1997) on a weekly basis. This measure of individual mental health symptomatic behaviors was used to verify treatment effectiveness.

### Instruments

Outcome-Questionnaire 45(OQ-45) (Lambert et al., 1997). The OQ-45 is a 45 question self-report assessment designed to measure client progress during therapy.

Possible scores range from 0 to 180 with higher scores representing higher distress. The OQ-45 consists of three subscales which measure (a) subjective discomfort or symptom distress, (b) interpersonal relationships, and (c) social role performance. Cutoff scores between clinically significant distress and non-distress has been determined to be 63. Reliable change is reported to be any change of a magnitude of plus or minus 14, or greater. The OQ-45 has been shown to have 3 week test-retest reliability of .84, with a Cronbach's alpha of .93. The OQ-45 has also been found to have high validity (Lambert, 1997).

Revised Dyadic Adjustment Scale (RDAS) (Busby, et al., 1995). The RDAS is a 14 item scale. All items are Likert type scales. The RDAS consists of an overall score which can be broken down into three sub-scales that measure cohesion, satisfaction and consensus. The factor structure for the RDAS has been verified via confirmatory factor analysis. The range of scores for the total RDAS is 0 to 69 with higher scores indicating increased marital adjustment. Cutoff score between distressed and non-distressed population was found to be 48 (Busby et al., 1995; Crane, Middleton, & Bean, 2000). Thurber and Mead (2002) also found a cutoff of 48 but determined that there is a range of uncertainty around the cutoff of  $\pm 5$ . Scores outside this band of uncertainty have a p value less than 0.05, indicating a high probability that the score was not by chance. Therefore, scores of 43 and below would be confidently considered maritally distressed and scores of 53 and above are considered to be non-distressed. A difference score of five, between pretest and post-test, has been found to be a reliable change (Thurber & Mead, 2002). Thus, an increase of 5 or more points above the client's first RDAS Total

Score would indicate reliable “improvement” in the client’s perception of their marital distress. A score of 5 or more points which reaches 53 or above is considered a “clinically significant change” in the client’s perception of their marital distress. The total RDAS score has been found to have excellent test-retest reliability as well as high discriminate validity between distressed and non-distressed populations (Busby et al., 1995). The Chronbach’s alpha was reported as .90, the Guttman Split-Half at .94 and the Spearman-Brown Split-Half was found to be .95.

Marital Status Inventory (MSI) (Weiss & Cerrato, 1980). The MSI is a measure of marital stability or divorce potential. The MSI is a 14 item, true/false questionnaire. Scores range from 0 to 14. Clinical cutoff for predicting divorce has been determined to be the wife’s score. A wife’s score of 7 or higher indicates high divorce potential; a score of 3-6 indicates moderate divorce potential; a score of 1-2 indicates mild divorce potential (Crane, Newfield & Armstrong, 1984; Crane, Soderquist & Gardner, 1995). Whiting & Crane (2003) have recently reported cutoff scores on the MSI in terms of marital distress. They found MSI cutoff scores of 4 and 5 and above, for husbands and wives respectively, to be indicative of severe marital distress. Discriminate validity has also been demonstrated, in that the MSI can discriminate between couples seeking help for marital problems and those seeking help for child rearing problems. The MSI has also been shown to have a split-half reliability of .86 (Crane & Mead, 1980).

Conflict Tactics Scale 2 (CTS 2) (Strauss, et al., 1996). The CTS2 assesses domestic violence in the form of psychological aggression, physical assault, sexual coercion, and inflicted injury. The CTS2 consists of 78 questions, 39 for the respondent’s

behaviors and 39 for the behaviors of the respondent's spouse. Scores are established by the midpoints of the frequency of an event. For example "I threw something at my partner" is scored as 0 for the answer "this never happened" 1 for "once in the past year" 2 for "twice in the past year" 4 for "3-5 times in the past year" 8 for "6-10 times in the past year" 15 for "11-20 times in the past year" and 25 for "more than 20 times in the past year." Scores can range from 0 to 1950. The CTS2 is broken down into 5 sub-scales: negotiation, psychological aggression, physical assault, sexual coercion, and injury. For this study any couple with scores in any category beside negotiation and psychological aggression were excluded. The authors of this scale reported alpha reliability coefficients for each of the sub-scales to be Negotiation = .86, Psychological Aggression = .79, Physical Assault = .86, Sexual Coercion = .87, and Injury = .95. They also reported that the scale shows strong discriminate validity, in distinguishing violent couples. The scale is also reported to have high construct validity, tested via construct correlation analysis.

Brief Screen for Depression (BSD) (Hakstian & McLean, 1989). This four item, Likert scale questionnaire screens for indications of depression. Scores range from 0 to 35, with a clinical cutoff score of 21, with a hit rate of 95.8%. The BSD has been shown to have test-retest reliability of .54, and an alpha of .65. Discriminate validity has been demonstrated to be 95.8% between depressed and normal subjects, and 85.8% between depressed and non-depressed psychiatric control. The BSD has also shown .58 correlation with the Beck Depression Inventory (Beck, et al., 1961).

### Analysis

The hypothesis tested in Phase One was: that each therapists' most effective form

of supervision could be discovered in an alternating treatment session. The independent variable (IV) used during the first phase of the study was the form of supervisory feedback being applied. Three forms of feedback were utilized during the study: Computer Assisted (CA), Bug-In-The-Ear (BITE) and Phone-In. CA supervisory feedback was operationally defined as the ten minute time segment when the computer monitor in the therapy room was actively showing feedback to the therapists. BITE feedback was operationally defined as the ten minute time segments during which the supervisor utilized only the radio device to give feedback to the therapists. Phone-in feedback was operationally defined as the ten minute time segment during which the supervisor used only the intercom phone to give feedback to the therapist. The dependent variable (DV) used during the first phase of the study was therapist adherence to treatment protocol. Adherence was operationally defined as percent of On-Target (OT) responses to the three classes of client behavior, described above at CRB 1, CRB 2, and CRB 3 above.

Determination of the most effective form of supervision was done mathematically and graphically. Each therapist's OT percentages for each phase of the alternating feedback session was calculated, then graphed. Similar phases were then grouped yielding a total OT percent for each form of feedback. The feedback form with the highest OT percentage was determined to be the most effective form of supervision.

The hypothesis tested in Phase Two was: as the supervisor delivered the therapist's previously determined-most-effective-form of supervision, the therapist would increase adherence to the treatment protocols. Delivery of the most effective form of

supervision was operationally defined as the using either CA, BITE, or Phone-In feedback exclusively to give direct feedback, during the follow-up sessions. Adherence to treatment protocol was operationally defined as percent of OT responses to client CRB 1, CRB 2, and CRB 3 behavior, as defined above. In this study therapists were considered to have a high adherence rate if the OT percentage was above 25%; moderate adherence if the score was between 15 to 24%; low adherence if the score was 14 % or lower.

The hypothesis tested in Phase Three was: that variations in each therapist's adherence would effect client in session behavior. Specifically, as adherence increased over the course of therapy, the clients' CRB 1 behaviors would decrease, CRB 2 and CRB 3 behaviors would increase, across sessions, and vice versa if adherence worsened. Further, the clients' perceived psychological symptoms and perceived marital distress would remain in the non-clinical, and non-maritally distressed range, or move to these ranges over the course of treatment, if adherence improved or remained high. The operational definition for the CRBs was the number of each behavior recorded divided by the total number of all three behaviors recorded. The operational definition of perceived psychological distress is each client's weekly score on the OQ-45. The operational definition of perceived marital distress was each client's weekly score on the RDAS. Cut-off scores determining psychological and marital distress are discussed above.

## Chapter 4: Results

The purpose of this research was three fold. First, to perform a functional analysis of three individual therapists' responses to three types of supervisory feedback; namely phone-in, Bug-In-the-Ear (BITE), and computer-assisted feedback. This functional analysis determined which form of feedback was most effective at creating adherence to the treatment model, for each therapist. Adherence was operationalized as the therapist's On-Target (OT) percentage of responses to clients' behaviors. Second, each study determined the effect of the use of each therapist's most effective form of supervision on their responses over the course of several follow-up sessions. Specifically the study examined changes in each therapist's in-session behavior, and overall OT percentage. Third, each study determined the effect of the therapists' OT percentages and in-session behavior on clients' behaviors and perceptions of marital distress, and psychological states. It was predicted that the use the therapist's most effective form of supervision would result in increased adherence to treatment protocols. As adherence increased it was predicted that clients would decrease in client in-session complaining (CRB 1) and off-track behavior (CRB 4), while client attempting solutions (CRB 2) and relationship contingency recognition (CRB 3) would both increase. Further, it was predicted that the clients would perceive less distress in their marital relationship (RDAS), while perception of psychological symptoms (OQ-45) would decrease.

## Study One

Prior to beginning the study, Couple One completed the Standard Assessment Battery (SAB) described in the measurement section above. Table 2 presents the Standard Assessment Battery (SAB) scores for Couple One. Couple One's SAB scores were: Marital Status Inventory (MSI: Weiss & Cerrato, 1980) 4 for wife and incomplete for the husband; Conflict Tactics Scale 2 (CTS2: Strauss, Hamby, McCoy, & Sugarman, 1996) 130 (Negotiation), 29 (Psychological Aggression), 0 (Physical Assault), 0 (Sexual Coercion), 0 (Injury) for the wife, and 70 (Negotiation), 60 (Psychological Aggression), 3 (Physical Assault), 0 (Sexual Coercion), 0 (Injury) for the husband. Couple One's scores were missing for the Brief Screen for Depression (BSD: Hakstian & McLean, 1989). Couple One's initial OQ-45 (Lambert, et al. 1997) scores were 56 for the wife and 54 for the husband. Couple One's initial RDAS (Busby 1995) scores were 27, and 31 for wife and husband respectively. Taken together the SAB scores suggest that the couple was experiencing moderate marital distress, but no individual psychological distress.

Table 2. Pre-treatment Standard Assessment Battery Scores for Couple One

	OQ-45	RDAS	B S D	M S I	CTS 2 Negotiation	CTS 2 Psychological Aggression	CTS 2 Physical Assault	CTS 2 Sexual Coercion	CTS2 Injury
Husband	54	31	m	m	73	60	3	0	0
Wife	56	27	m	4	130	29	0	0	0

Note: m = missing data

Phase One: Results of the Functional Analysis of Multiple Forms of Supervision

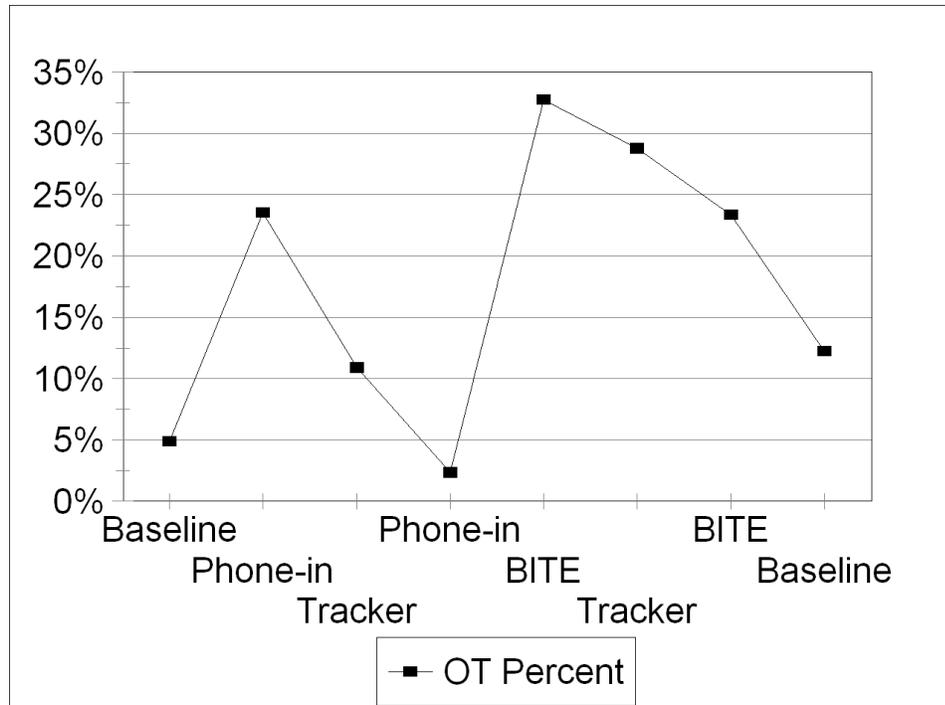
Feedback for Therapist One. When the combined percentage for each form of supervision was tabulated for Therapist One the combined BITE segments are seen to have the highest combined OT percentage(27.8%: Table 3 and Figure 1). CA provided the next highest combined OT percentage (21.8%). Phone-in produced the lowest combined OT percentage (15.3%).

Table 3. Data from Alternating Treatment Session for Therapist One Responses to Three Types of Supervisory Feedback in an Alternating Feedback Therapy Session.

Phase	Total	OT	Percent
Baseline	41	2	4.9%
Phone-in	68	16	23.5%
CA	46	5	10.9%
Phone-in	43	1	2.3%
BITE	55	18	32.7%
CA	73	21	28.8%
BITE	60	14	23.3%
Baseline	49	6	12.2%

Feedback Type	Combined Total	Combined OT	Combined Percentage
BITE	115	32	27.8%
CA	119	26	21.8%
Phone-in	111	17	15.3%

Figure 1. Therapist One's Total On-Target Percentage During An Alternating Treatment Session Using Three Different Types of Supervision Feedback



Note: BITE = Bug-in-the-ear radio transmitter supervision; CA = Computer-assisted supervision; Phone-in = Intercom phoned-in supervision. Rate is therapist Total OT percentages for each segment. Each data point represents 10 minutes and an average of 55 data points.

Phase Two: Analysis of the Effects of Bug-in-the-ear Supervision Feedback for Therapist One. The most effective supervision feedback type for Therapist One was found to be BITE. BITE supervision was provided to Therapist One for three follow-up sessions following the alternating feedback session. Therapist One began working with the client at the end of the study leaving only enough time to complete three sessions. The raw data for the three follow-up sessions is presented in Table 4. Percentage of OT response was calculated by dividing the number of OT responses by total number of each CRB performed.

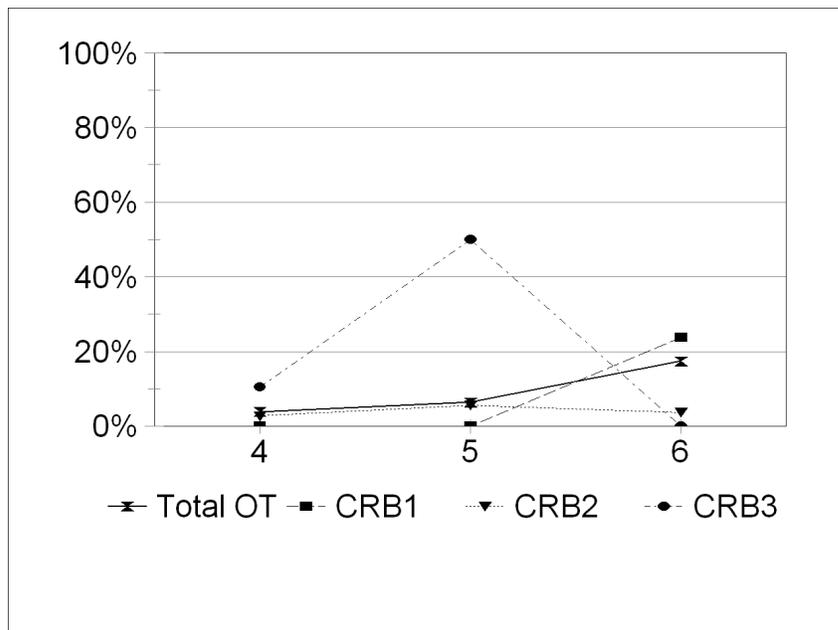
During the follow-up sessions Therapist One's total OT percentage trended up over the course of the sessions from 3.85% to 17.42% (Figure 2), or from low to moderate adherence. Therapist One's OT percentage for the clients' CRB1 (complaining) was zero for Sessions 4 and 5, and climbed to 23.77% for Session 6, reaching the level of moderate adherence. However, as the clients' CRB1 responses were zero for Sessions 4 and 5 (Figure 3) Therapist One's OT response can also be considered 100% accurate for CRB 1 in these sessions. However, because of the mathematic calculations involved, 0% was used in this study. Therapist One's OT percentage for the clients' CRB 2 (Attempting solutions) remained level across all three follow-up sessions at 2.70%, 5.53% and 3.64%, or low adherence. Therapist One's OT percentage for the clients' CRB 3 (Recognizing relationship contingencies) varied from 10.53% (low adherence) for Session 4, to 50.00% (high adherence) for Session 5 and to 0% (low adherence) for Session 6.

Table 4. Raw Data from Follow-up Sessions with Couple One.

Session	CRB1	CRB1 OT	CRB2	CRB2 OT	CRB3	CRB3 OT
1	0	0	111	3	19	2
2	0	0	199	11	4	2
3	122	29	55	2	1	0
Total	122	29	365	16	24	4

Note: Data in columns CRB1, CRB2, and CRB3, are counts of clients behaviors in each session. Data in columns CRB1 OT, CRB2 OT, and CRB3 OT are counts of therapist's OT responses.

Figure 2. Therapist One On-Target Percentages over the Course of Follow-up Sessions



Note: CRB 1=complaining; CRB 2=attempting solutions; CRB 3= recognizing relationship contingencies. Total OT=Average therapist OT response to CRB 1, 2 and 3.

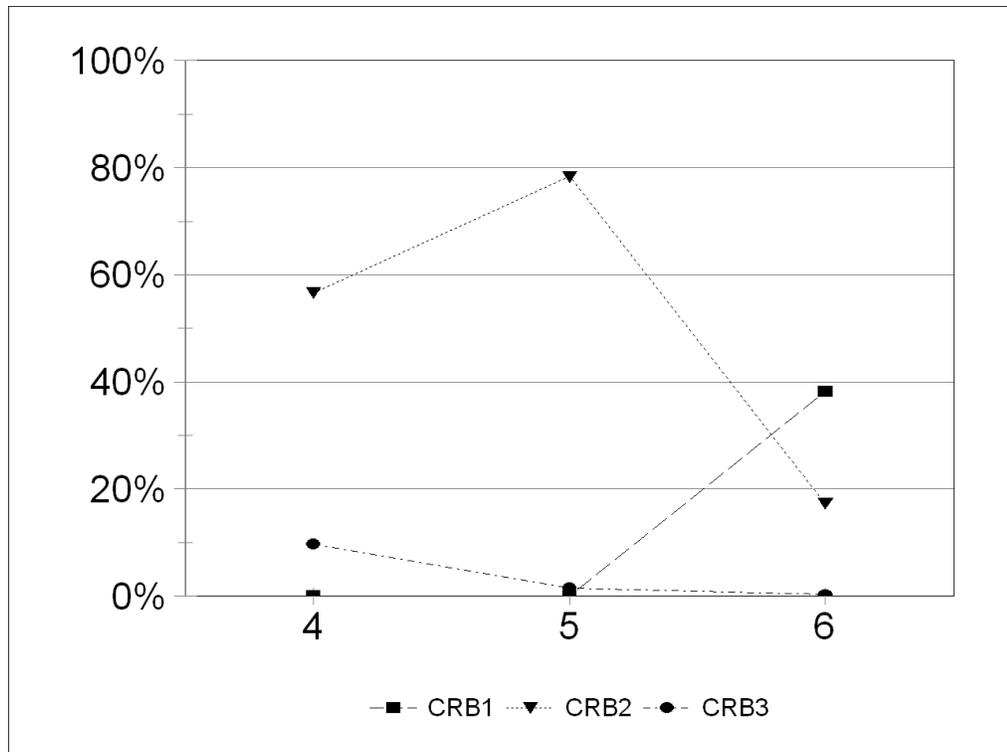
### Phase Three: The Effect of Therapist One's Adherence on Couple One's

Outcomes. As can be seen in Figure 3 Couple One's CRB 1 (complaining) percentage was zero for sessions four and five, rising to 38.24% in session 6. In Therapy Task 4 (Table 1) the expected response by the therapist to client's complaining (CRB1) is to structure (TIB2) the session to attempt to return to a focus on finding solutions (CRB2) or recognizing relational contingencies (CRB3). As noted above Therapist One was 100% accurate in not responding with TIB2s in response when the clients did not emit CRB1s. However, the effect of the therapist's high OT response in session six cannot be seen as the study ended.

Couple One's CRB 2 (attempting solutions) percentage began at 56.63% in Session 4, increased to 78.35% in Session 5, decreased in Session 6 to 17.24% (Figure 3). In Therapy Task 4 (Table 1) the expected response by the therapist to clients attempting solutions(CRB 2) is to reinforce the clients (TIB 3). The desired result of reinforcing the clients is to increase the amount of solutions seeking (CRB 2) behavior. Therapist One's percentage of OT responses to Couple One's CRB 2s (Figure 2) were low and level for all three sessions. In spite of these low adherence levels Couple One increased their use of CRB 2s in Sessions 4 and 5, counter to the predicted. However, in Session 6 attempts at solutions (CRB 2) decrease, perhaps as the result of lack of reinforcement.

Couple One's CRB 3 (recognizing relationship contingencies) percentage was 9.69% in Session 4; decreased to 1.57% and decreased further to 0.31% by Session 6. In Therapy Task 4 (Table 1) the expected therapist response to clients' recognizing

Figure 3. Percentage of Couple One's Clinically Relevant Behaviors Emitted in the Follow-Up Sessions.



Note: CRB 1=complaining; CRB 2=attempting solutions; CRB 3= recognizing relationship contingencies.

relational contingencies (CRB3) was to reinforce that behavior (TIB3). The desired outcome of the therapist’s TIB 3 (reinforce) is to increase the number of CRB 3s emitted. As can be seen in Figure 3 Therapist One’s percentage of OT responses to CRB 3s were in the low adherence range for the first and last session, reaching high adherence in Session 5. This peak of adherence does not appear to have affected Couple One’s steady decrease in recognizing relationship contingencies.

In turning to the couple’s assessment data we see that Couple One’s OQ-45 baseline scores were 56, and 54 (Table 2) for wife and husband which indicated they were in the non-clinical range. By end of the three follow-up sessions, although there was a little variation in their scores, they remained in the non-clinical range ending at 52 and 49 for wife and husband (Table 5).

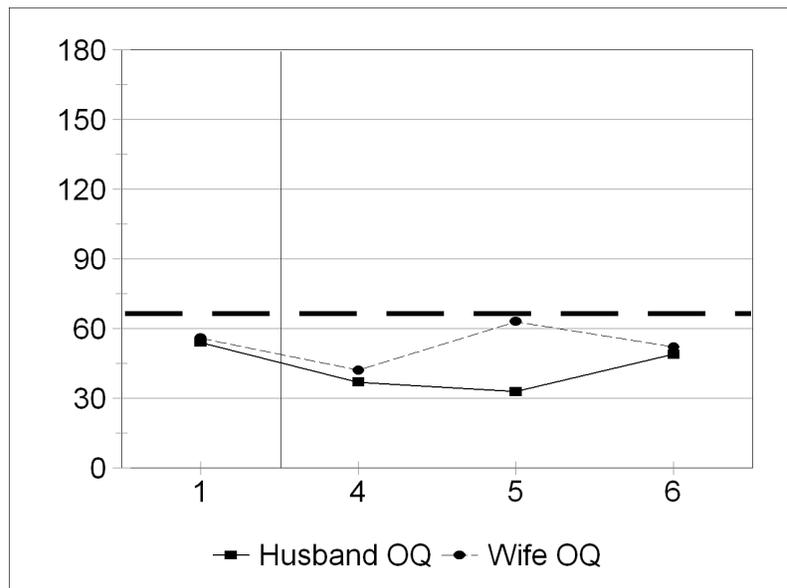
Table 5. Couple One’s Outcome Assessment Scores for Follow-Up Sessions.

	Session 4		Session 5		Session 6	
	OQ-45	RDAS	OQ-45	RDAS	OQ-45	RDAS
Husband	37	30	33	38	49	26
Wife	42	35	63	42	52	m

Note: m= missing

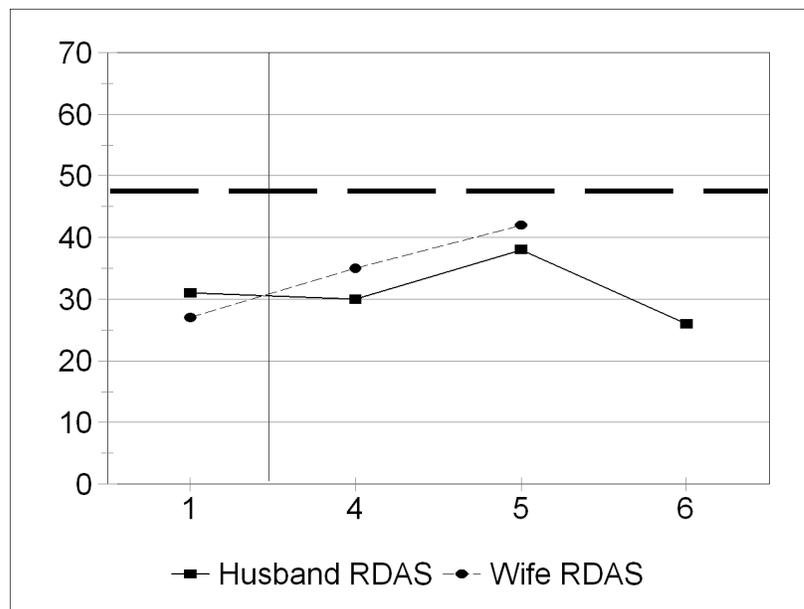
Couple One’s RDAS scores remained in the maritally distressed range across all three follow-up sessions. As can be seen in Table 5 and Figure 5, both husband and wife experienced a Reliable Change Index (RCI) score of 5 or more points in RDAS scores; increasing from 35 to 42 and from 30 to 38, for the wife and husband respectively from Session 4 to 5. The increase was followed by an RCI score decrease in the husband’s

Figure 4. Couple One's Outcome-Questionnaire 45 Data for Follow-up Sessions



Note: Dashed line=cut-off between distressed and non-distressed populations

Figure 5. Couple One Revised Dyad Adjustment Scale Data for Follow-up Sessions



Note: Dashed line = cut-off between adjusted and un-adjusted populations

marital adjustment (RDAS) score from 38 to 26 from Session 5 to 6. The wife's response to the RDAS was incomplete for Session 6. Although the changes from Sessions 4 to 5 indicated a reduction in their marital distress, the scores were not clinically significant as they never crossed the cut-off line into the non-distressed range. The husband's declining RDAS score in Session 6 suggests deterioration in his perception of the marital relationship.

Next we consider the possible relationship between Couple One's outcome scores and the therapist's on-target responses to the clients' clinically relevant behaviors. First, it is important to note that the OQ-45 and RDAS scores are assumed to lag from the previous session. That is, the couple's Session 4 scores are expected to reflect the events of Session 3 and what happened during the subsequent week and Session 5 outcome scores reflect Therapist One's Session 4 OT responses and the subsequent week, and so on (Lambert, et al. 2001a). Specifically, the supervisor observed OT performance by Therapist One to Couple One's CRBs in Session 4 should be reflected in the clients' self-reported OQ-45 and RDAS outcome scores in Session 5. The lag then moves to Session 5 where the supervisor observed OT performance by Therapist One to Couple One's CRBs in Session 5 should be reflected in the clients' self-reported OQ-45 and RDAS outcome scores in Session 6 and so on.

As can be seen in Figure 2, in Session 4 Therapist One's OT responses to the couple's complaining behavior (CRB1) was 0%. However, this could also be considered 100% as the couple were not observed to complain in this session. Therapist One's OT responses to the couple's attempting solutions (CRB2) and recognizing relationship

contingencies (CRB3) were very limited, 2.70% and 10.53% respectively. This means the therapist adhered to the treatment protocol at low rates, 97.3% and 89.47% for these two classes of client responses. The couple's OQ-45 outcome scores remained within the non-clinical range (Figure 4). Their RDAS scores trended up from Session 4 moving away from marital distress toward the non-distressed range (Table 5 and Figure 5).

In Session 5 Therapist One's OT responses to the clients' complaining and solution attempts remained relatively unchanged 0.00% or 100% accurate for CRB1 and 5.53% OT for CRB2. However, Therapist One responded OT to the clients' recognition of their relationship contingencies 50.00%, thus reinforcing half of their CRB3 responses. The couple's OQ-45 outcome scores remained within the non-clinical range (Figure 4). The wife's RDAS score was missing, but the husband's trended down moving toward greater marital distress (Figure 5).

#### Summary and Conclusions for Study One

During Phase One the functional analysis of Therapist Three's responses to three forms of supervision feedback—radio transmitted or Bug-in-the-ear (BITE); computer-assisted (CA); or phone-in—was performed and BITE was found to be most effective. The functional analysis was performed in Session 3 and Therapist One subsequently received BITE supervision in the next three sessions. In Study One it was possible to determine which form of supervisory feedback was most effective.

During Phase Two of the study BITE feedback increased the Total OT percentage to a moderate level, but only in the last session. BITE feedback did not create sustained increases in Therapist One's OT response to CRB 1, CRB 2 or CRB 3.

During Phase Three of the study the effect of the therapist's adherence on client behavior did not create the predicted improvements. Complaining (CRB1) was observed to increase and attempting solutions (CRB2) decreased as did recognizing relationship contingencies (CRB3). In the same vein, the couple's outcome assessment scores also showed indications of deterioration across sessions.

For Therapist One the use of BITE supervision as the most effective form of supervision seems questionable. It appears, that BITE was not effective in maintaining desired therapist adherence behavior. This may have been related to the fact that although the client remained in the non-clinical range of the OQ-45 they did not improve in their distressed marital relationship as assessed by the RDAS. Specifically BITE Supervision did not create high level of OT response to the client's attempted solutions (CRB 2) and recognition of relationship contingencies (CRB 3) as required by the treatment protocol.

## Study Two

The Standard Assessment Battery (SAB) scores for Couple Two were not reported. However, initial scores for the OQ-45 and RDAS were collected and recorded (Table 6). Couple Two's initial OQ-45 (Lambert, et al. 1997) scores were 43 for the wife and 48 for the husband. These scores indicate that neither spouse perceived any individual psychological distress. Couple Two's initial RDAS (Busby 1995) scores were 45 and 50, for wife and husband respectively. The wife's RDAS score falls below the cut-off, indicating a perception of marital distress. However, both spouses' scores fall within the  $\pm 5$  band of uncertainty surrounding the cut-off of 48. This means that the probability of Couple Two falling in either the maritally distressed or maritally non-distressed population cannot be determined at a probability level less than 5%. In other words, the value of  $p$  is greater than 0.05, for determining this couple's population.

Table 6. Pre-treatment Assessment Scores for Couple Two

	OQ-45	RDAS
Husband	48	50
Wife	43	45

Note: m = missing data

Phase One: Results of the Functional Analysis of Multiple Forms of Supervision

Feedback for Therapist Two.. When the combined percentages for each form of supervision were tabulated for Therapist Two the Computer Assisted (CA) segments are seen to have the highest combined OT percentage(22.8%: Table 7 and Figure 6). BITE and Phone-in supervision were less effective with combined scores of 16.7% and 16.3% respectively.

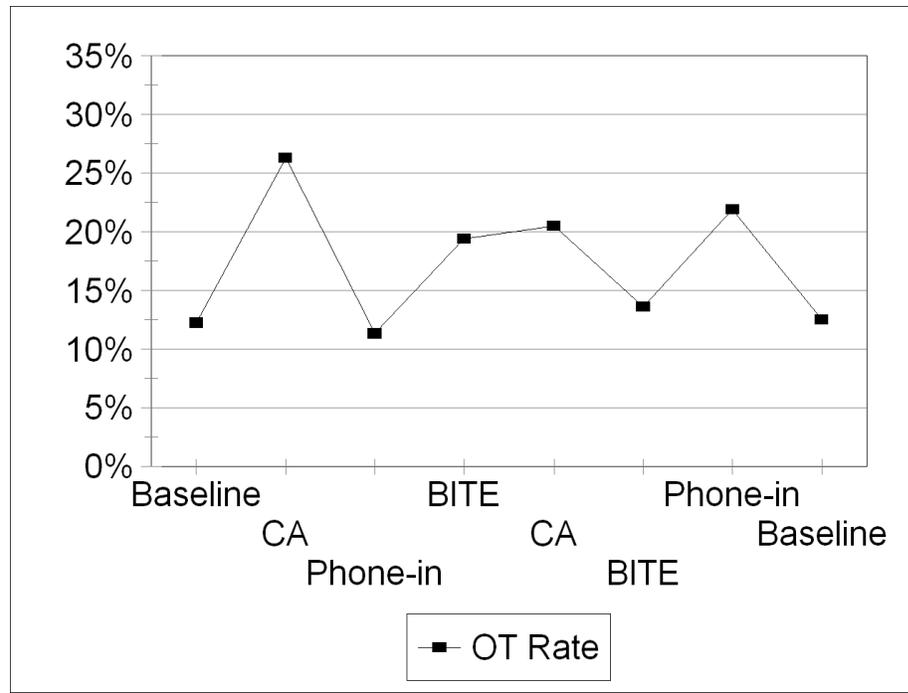
Table 7. Analysis of Therapist Two’s Responses to Three Types of Supervisory Feedback in an Alternating Supervision Therapy Session.

Phase	Total	OT	Percent
Baseline	49	6	12.20%
CA	57	15	26.30%
Phone-in	71	8	11.30%
BITE	72	14	19.40%
CA	88	18	20.50%
BITE	66	9	13.60%
Phone-in	64	14	21.90%
Baseline	16	2	12.50%

Feedback Type	Combined Total	Combined OT	Combined Percentage
BITE	138	23	16.7%
CA	145	33	22.8%
Phone-in	135	22	16.3%

Figure 6. Therapist Two's Total On-Target Percentage During An Alternating Treatment

Session Using Three Different Types of Supervision Feedback



Note: BITE = Bug-in-the-ear radio transmitter supervision; CA = Computer-assisted supervision; Phone-in = Intercom phoned-in supervision. Rate is therapist Total OT percentages for each segment. Each data point represents 10 minutes and an average of 60 data points.

### Phase Two: Analysis of Computer-assisted Supervision Feedback for Therapist

Two. The most effective supervision feedback form for Therapist Two was found to be Computer Assisted (CA) feedback. CA supervision was provided to Therapist Two for five follow-up sessions after the Alternating feedback (AF) session. The raw data for the three follow-up sessions is presented in Table 8. Percentage of OT response was calculated by dividing the number of OT responses by total number of each CRB performed.

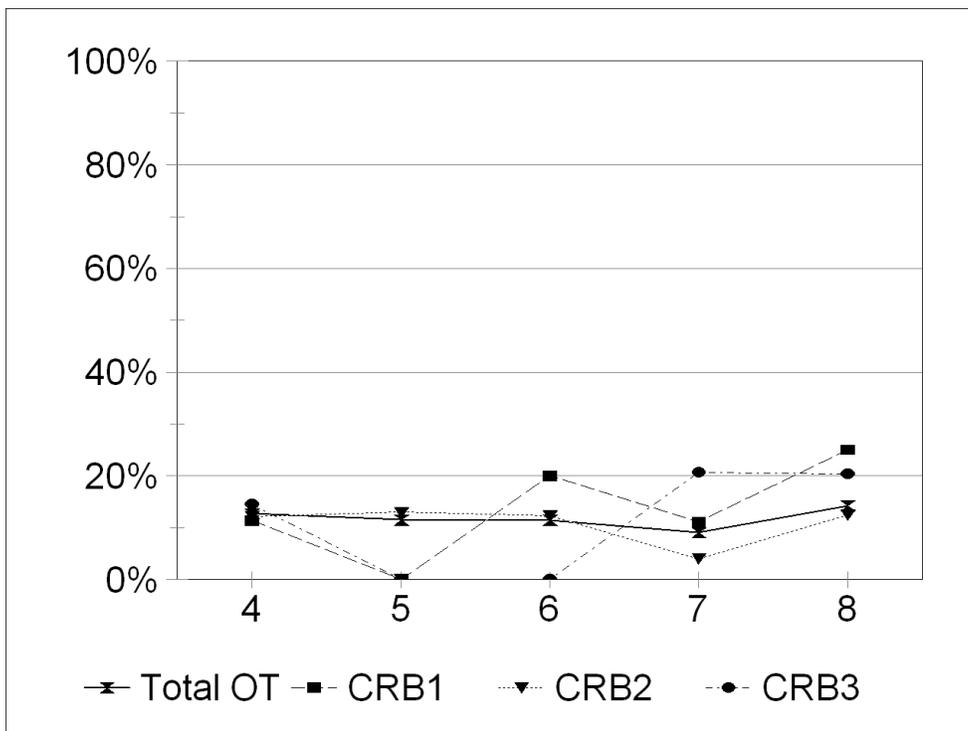
During the follow-up sessions Therapist Two's Total OT percentage remained level in the low range, beginning at 12.72% in Session 4 and ending at 14.23% in Session 8 (Table 8). Therapist Two's OT percentage when the client's performed CRB 1 (Complaining) began at 11.36% in Session 4 and dropped to 0.00% in Session 5. After Session 5 the OT percentage when clients performed CRB 1 trended upward reaching 25.0%, or high adherence by Session 8 (Figure 7). Therapist Two's OT percentage when the client's performed CRB 2 (Attempting Solutions) remained level across sessions, in the low range, beginning at 12.16% in Session 4 and ending at 12.50% in Session 8, except for a drop during Session 7 to 4.03%. Therapist Two's OT percentage when the clients performed CRB 3 (recognizing relationship contingencies) began at 14.55% (low) in Session 4 and decreased to 0.00% for Sessions 5 and 6. In Sessions 7 and 8 the OT percent when clients performed CRB 3 increased to 20.63% and 20.37% (moderate adherence), respectively.

Table 8. Raw Data from Follow-up Sessions with Couple Two.

Session	CRB1	CRB1 OT	CRB2	CRB2 OT	CRB3	CRB3 OT
1	44	5	74	9	55	8
2	20	0	162	21	0	0
3	5	1	146	18	15	0
4	9	1	149	6	63	13
5	4	1	216	27	54	11
Total	82	8	749	83	190	35

Note: Data in columns CRB1, CRB2, and CRB3, are counts of clients behaviors in each session. Data in columns CRB1 OT, CRB2 OT, and CRB3 OT are counts of therapist's OT responses.

Figure 7. Therapist Two On-target Percentage over the Course of Follow-up Sessions



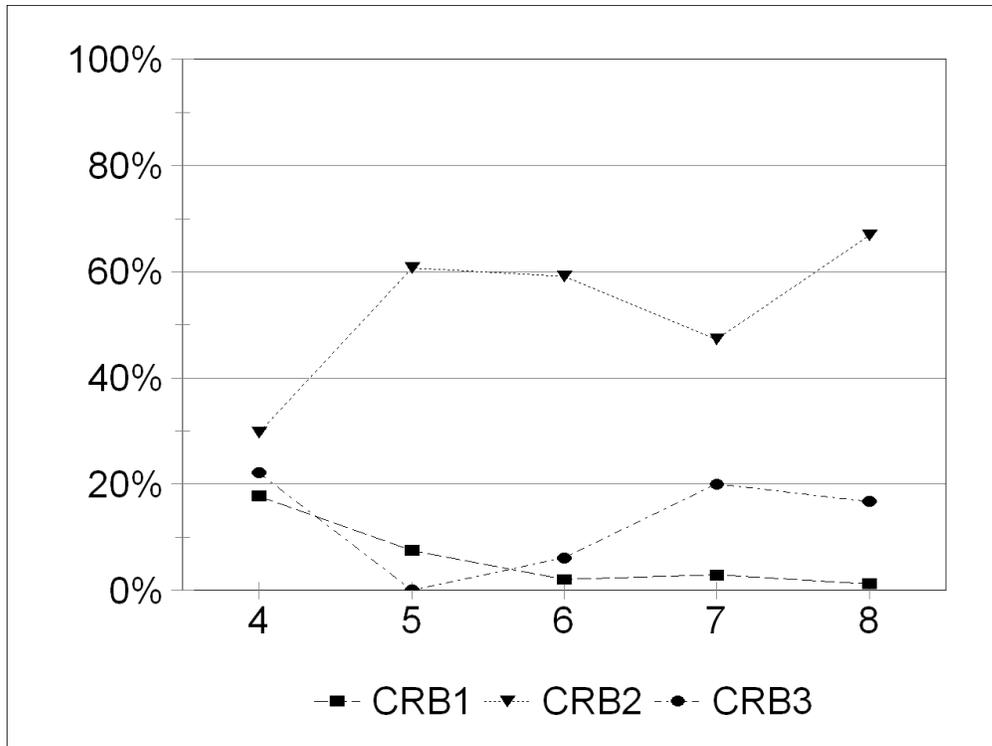
Note: CRB 1=complaining; CRB 2=attempting solutions; CRB 3= recognizing relationship contingencies. Total OT=Average therapist OT response to CRB 1, 2 and 3.

### Phase Three: The Effect of Therapist One's Adherence on Couple One's

Outcomes. Couple Two's CRB1 (complaining) percentage trended downward over the course of the follow-up sessions; from 17.67% in Session 4 to 1.24% in Session 8 (Figure 8). In Therapy Task 4 (Table 1) the expected response by the therapist to client complaining (CRB 1) is to structure the session (TIB 2) to attempt to return the focus to finding solutions (CRB 2) and recognizing relationship contingencies (CRB 3). The result of structuring the session (TIB 2) should result in fewer complaints (CRB 1) over the course of therapy. Therapist Two's OT percentage in response (Figure ) to CRB 1 increased from 11.36% in Session 4 to 25.00% in session 8. That is, over the course of the follow-up sessions Therapist Two's adherence to treatment protocols improved in response to client complaining (CRB 1). As Therapist Two improved in OT response to CRB 1, the percent of Complaining (CRB 1) decreased.

Couple Two's CRB 2 (attempting solutions) percentage began at 29.72% in Session 4 and trended up, ending in Session 8 at 66.87% (Figure 10). In Therapy Task 4 (Table 1) the expected response by the therapist to clients attempting solutions (CRB 2) is to reinforce the clients (TIB 3). The desired result of reinforcing the clients is to increase the amount of solutions seeking (CRB 2) behavior. Therapist Two's OT percentage in response (Figure 7) to CRB 2 remained level across the follow-up sessions, beginning at 12.16% in Session 4 and ending at 12.50% in Session 8. Therapist Two also recorded a drop in OT response to CRB 2 in session 7 to 4.03%. This drop corresponds with the drop in Session 7 to Couple Two's percentage of CRB 2. Therapist Two's OT response to CRB 2's may be sufficient adherence to the treatment protocol to influence the desired

Figure 8. Percentage of Couple Two's Clinically Relevant Behaviors Emitted in the Follow-Up Sessions.



Note: CRB 1=complaining; CRB 2=attempting solutions; CRB 3= recognizing relationship contingencies.

increase in attempted solutions (CRB 2) by the clients over the course of the follow-up sessions. The synchronized drop in Session 7 of both client performance of CRB 2 and Therapist Two's OT percent response may speak to the bidirectional nature of therapist/client interactions.

Couple Two's CRB 3 (recognizing relationship contingencies) percentage began at 22.09% in Session 4, and fell to 0.00% in Session 5 (Figure 8). Over the course of the remaining sessions (6-8) Couple Two's CRB 3 percentage showed an increasing trend ending at 16.72%. In Therapy Task 4 (Table 1) the expected therapist response to clients' recognizing relational contingencies (CRB3) was to reinforce (TIB3) that behavior. As with CRB 2, the desired outcome of the therapist's TIB 3 (reinforce) is to increase the number of CRB 3s emitted. As can be seen in Figure 7 Therapist Two's OT percentage (adherence) response to the clients' CRB 3s varied across the follow-up sessions roughly paralleling the clients' responses. In Session 4 Therapist Two responded to 12.55% of the clients' CRB 3s as expected. The OT response to CRB 3 fell to zero for Session 5 when the clients performed no CRB 3s, and remained at zero for Session 6 when the clients did perform some CRB 3s. In Sessions 7 and 8 Therapist Two's OT percentage for CRB 3 was 20.63% and 20.37% respectively. It may be that the therapist's low adherence to the treatment protocols in Sessions 5 and 6 influenced the clients CRB3 responses.

In turning to the couple's assessment data we see that Couple One's OQ-45 baseline scores were 43 and 48 (Table 6), for wife and husband. Across the follow-up sessions the Couples' OQ-45 scores varied, but never crossed the cut-off into the psychologically distressed range (Table 9; Figure 9).

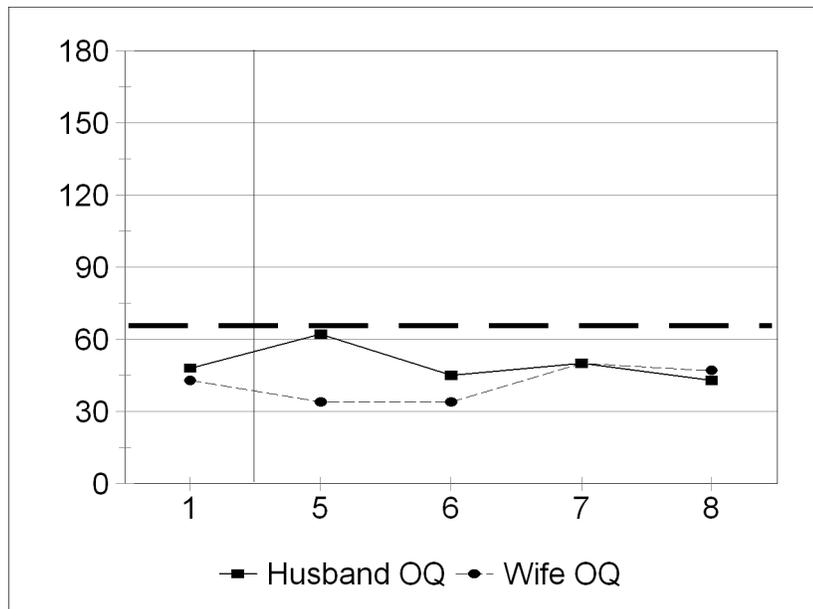
Table 9. Couple Two's Outcome Assessment Scores for Follow-Up Sessions.

	Session 4		Session 5		Session 6	
	OQ-45	RDAS	OQ-45	RDAS	OQ-45	RDAS
Husband	m	53	62	53	45	62
Wife	m	50	34	50	34	56

	Session 7		Session 8	
	OQ-45	RDAS	OQ-45	RDAS
Husband	50	60	43	59
Wife	50	52	47	51

Note: m=missing data

Figure 9. Couple Two Outcome-Questionnaire 45 Data for Follow-up Sessions



Note:

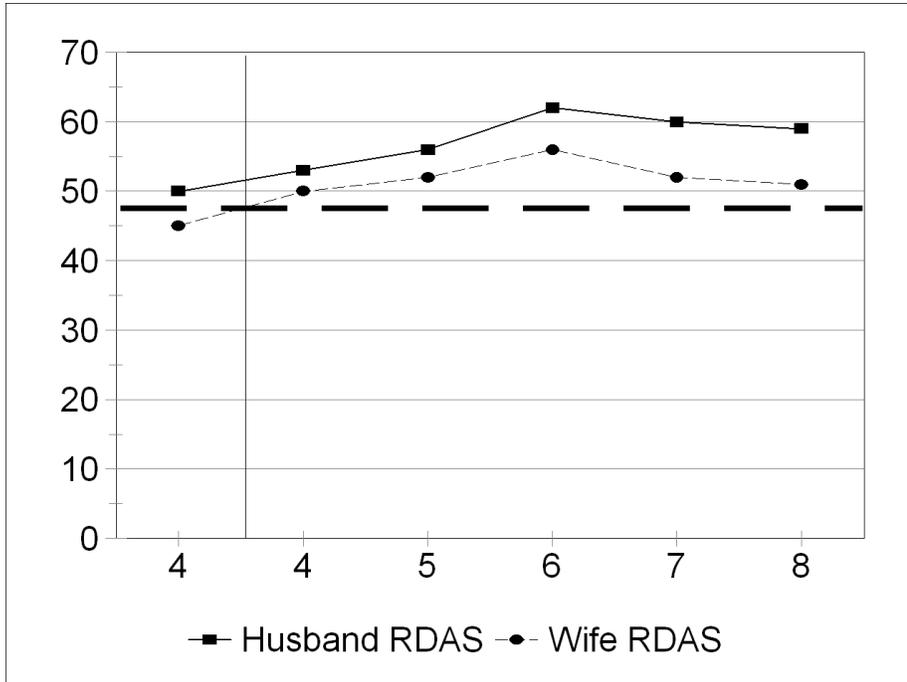
Dashed line=cut-off between distressed and non-distressed populations

Couple Two's baseline RDAS scores were 45 and 50 for wife and husband, respectively. By Session 4 the scores increased to 50 and 53, respectively (Table 9; Figure 10) and remained above the clinical cut-off across the follow-up sessions. Both spouses experience a reliable change ( $>5$ ) by Session 6, but only the husband's change remains reliable through the end of the follow-up sessions. The husband's final RDAS scores also falls outside the band of uncertainty surrounding the cut-off score, indicating that his score falls in the non-distressed range with a p value less than 0.05. The wife's final RDAS scores fall within this band of uncertainty, meaning that determining which population she belongs to cannot be done.

Next we consider the possible relationship between Couple Two's outcome scores and Therapist Two's On-Target responses to the clients' Clinically Relevant Behaviors (CRB). As with Therapist One above, it is important to note that the OQ-45 and RDAS scores are assumed to lag from the previous session. In other words, the scores reported for each session should reflect the effects of the therapists OT behaviors in response to the clients' CRB percentages from the previous session, and the events of the clients' subsequent week. For example, the OQ-45 and RDAS scores reported in Session 5 represent each individuals perception about their psychological and marital distress for the previous week, which is assumed to have been influenced by events in Session 4. Therefore, the Therapist's behaviors in Session 4 are compared to the outcome scores collected in Session 5.

As can be seen in Table 9 and Figure 7, in Session 4 the supervisor observed that Therapist Two's OT percentage response was 11.36% for client complaining (CRB

Figure 10. Couple Two Revised Dyadic Adjustment Scale Data for Follow-up Sessions



Note: Dashed line = cut-off between adjusted and un-adjusted populations

1), 12.16% for attempted solutions (CRB 2), and 14.55% for recognizing their relationship contingencies (CRB 3). This was followed, in Session 5, by the clients' outcome assessment reports of OQ-45 scores of 34 and 62 for the wife and husband respectively, both in the non-clinical range (Table 9). The clients' RDAS scores were 50 and 53 for wife and husband, both scores were above the cutoff of 48 but the both scores were still in the area of uncertainty for marital distress (Figure 10).

In Session 5 the supervisor observed that Therapist Two's OT response to client's complaining (CRB 1) decreased to zero (Figure 8). Therapist Two's OT response to CRB2 continued at 12.96%. As the client's were not observed to perform any CRB 3s (recognizing relationship contingencies) during Session 5 no OT score could be calculated. Therapist Two's adherence to the treatment protocol in Session 5 was low for CRB1 and 2. However, the couples' OQ-45 scores remained in the non-clinical range and they reported increased RDAS scores which took them both into the range of the maritally non-distressed, though not outside the band of uncertainty.

In Session 6 the supervisor observed that Therapist Two's OT response to client complaining (CRB 1) increased to 20.00%, OT responses to clients attempting solutions (CRB 2) remained level at 12.33%, Therapist Two's OT response to the couple's recognizing relationship contingencies (CRB 3) was 0.00%. Correspondingly, the lagged scores from Session 7 show the clients continued to report OQ-45 scores in the non-clinical range and in the maritally non-distressed range with both scoring outside the band of uncertainty. Therapist Two's adherence to the treatment protocol, while low for CRB1, 2 and 3 in Session 6, nonetheless it appears adequate to maintain Couple Two's

outcome scores in the non-clinical and not maritally distressed ranges.

As can be seen in Table 6, in Session 7 the supervisor observed that Therapist Two's OT responses to client complaining (CRB 1) to be 11.11%, while the therapist's OT responses to attempted solutions (CRB 2) decreased to 4.03% from the 12.33 % in the previous session. Therapist Two's OT response to clients' recognition of relationship contingencies (CRB 3) increased to 20.63% from zero in Session 6. The corresponding clients' self-reported outcome scores from session 8 show Couple Two's OQ-45 scores remain in the non-clinical range. The couple's RDAS scores remain level in the marital non-distressed range although the wife's score returned to the uncertainty range. Therapist Two's low overall adherence to the treatment, as measured by the therapist's OT responses, does not appear to be having an adverse effect on the clients' self-reported perceptions of their psychological and marital distress.

#### Summary and Conclusions for Study Two

In Study Two a functional analysis of Therapist Two's responses to three forms of supervision feedback—radio transmitted or Bug-in-the-ear (BITE); computer-assisted (CA); or phone-in—was performed and CA was found to be most effective. The functional analysis was performed in Session 3 and Therapist Two subsequently received BITE supervision in the next five sessions.

For Therapist Two CA feedback appeared to maintain the Total OT percentage over the course of the follow-up sessions. However, this OT percentage was in the low adherence range. CA feedback appeared to improve Therapist Two's responses to client complaints (CRB 1) and recognition of relationship contingencies (CRB 3) moving the

OT percentages from the low to moderate range. These changes in therapist behavior are in the desired direction. CA supervision maintained the level of OT percentage for client attempted solutions (CRB 2) in the low range, contrary to predictions. Therapist Two's low overall adherence to the treatment, as measured by the therapist's OT responses, does not appear to be having an adverse effect on the clients' self-reported perceptions of their psychological distress. However, in terms of marital distress effect on the wife is uncertain, while the husband shows reliable, clinical improvement.

Over the course of the follow-up sessions Couple Two decreased their complaining behaviors (CRB1) and increased their observed use of solution attempts (CRB2s: Figure 8) as predicted. However, CRB 3 scores were variable and ended below where they started counter to what was predicted. These changes somewhat support the effectiveness of the CA supervision feedback for Therapist Two in eliciting or supporting the therapist's OT responses. However, the low levels of OT percentage speak to the need to improve the feedback to this therapist. Perhaps therapist OT responses to CRB1 and 2, of 10 to 20 percent were adequate to maintain client progress.

### Study Three

Prior to beginning the study, Couple Three completed the Standard Assessment Battery (SAB) described in the measurement section above. Table 10 presents the Standard Assessment Battery (SAB) scores for Couple Three. Couple Three's SAB scores were: Marital Status Inventory (MSI: Weiss & Cerrato, 1980) 0 for the wife and 4 for the husband; Couple Conflict Tactics Scale 2 (CTS2: Strauss, Hamby, McCoy, & Sugarman, 1996) 62 (Negotiation), 16 (Psychological Aggression), 2 (Physical Assault), 0 (Sexual Coercion), 0 (Injury) for the wife, and 54 (Negotiation), 2 (Psychological Aggression), 0 (Physical Assault), 0 (Sexual Coercion), 0 (Injury) for the husband. Brief Screen for Depression (BSD: Hakstian & McLean, 1989) 19 for the wife and 20 for the husband. Couple Three's initial OQ-45 (Lambert, et al. 1997) scores were 68 for the wife and 67 for the husband. Their initial RDAS (Busby 1995) scores were 41, and 41 for wife and husband respectively. Taken together the SAB scores suggest that the couple were both psychologically distressed. Both appear to perceive the marital relationship as moderately to highly distressed.

Table 10. Pre-treatment Standard Assessment Battery Scores for Couple Three

	OQ-45	RDAS	B S D	M S I	CTS 2 Negotiation	CTS 2 Psycho- logical Aggression	CTS 2 Physical Assault	CTS 2 Sexual Coer- cion	CTS2 Injury
Husband	67	41	20	4	54	2	0	0	0
Wife	68	41	19	0	62	16	2	0	0

Phase One: Results of the Functional Analysis of Multiple Forms of Supervision

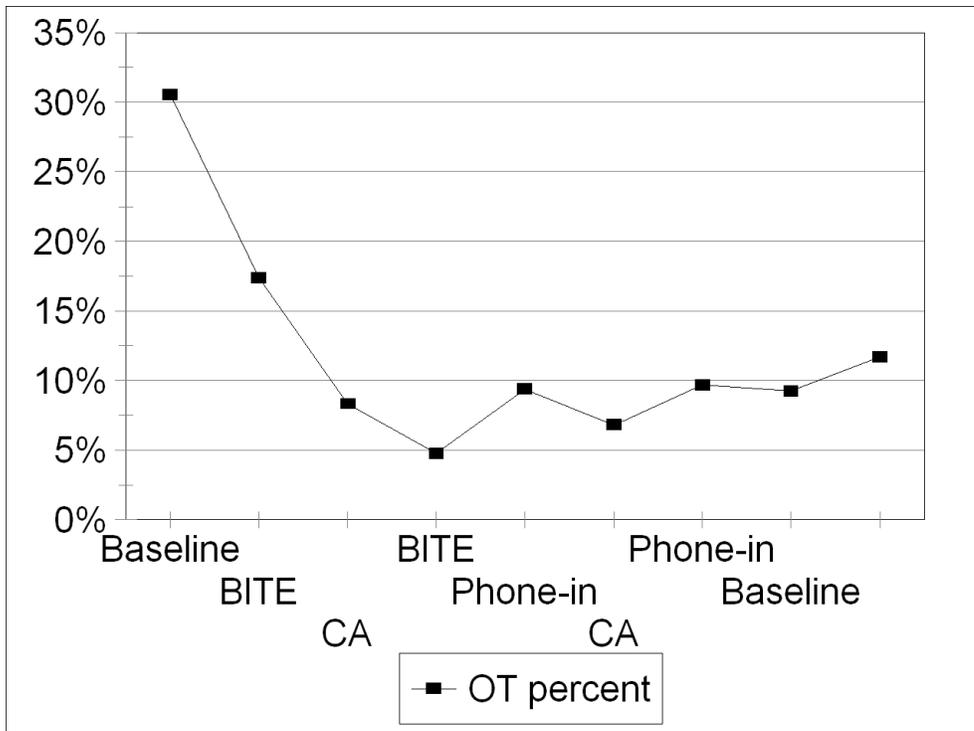
Feedback for Therapist Three. When the Total percentage for each form of supervision was tabulated for Therapist Three the combined radio transmitted (BITE) segments are seen to have the highest average OT percentage(11.4%: Table 11 and Figure 11). The Total OT percentage for Phone-in segments was 9.5%. The Total OT percentage for CA was lowest for Therapist Three with an average percentage of 7.6%.

Table 11. Analysis of Therapist Three’s Responses to Three Types of Supervisory Feedback in a Therapy Session.

Phase	Total	OT	Percent
Baseline	36	11	30.6%
BITE	46	8	17.4%
CA	48	4	8.3%
BITE	42	2	4.8%
Phone-in	32	3	9.4%
CA	44	3	6.8%
Phone-in	31	3	9.7%
Baseline	54	5	9.3%

Feedback Type	Total	OT	Percent
Baseline A	36	11	30.6%
BITE	88	10	11.4%
CA	92	7	7.6%
Phone-in	63	6	9.5%
Baseline B	54	5	9.3%

Figure 11. Therapist Three's Total On-Target Percentage During An Alternating Treatment Session Using Three Different Types of Supervision Feedback



Note: BITE = Bug-in-the-ear radio transmitter supervision; CA = Computer-assisted supervision; Phone-in = Intercom phoned-in supervision. Rate is therapist Total OT percentages for each segment. Each data point represents 10 minutes and an average of 42 data points.

Phase Two: Analysis of the Effects of Bug-in-the-ear Supervision Feedback for Therapist Three. The most effective supervision feedback type for Therapist Three was found to be radio transmitted, or Bug-in-the-ear (BITE) supervision. BITE supervision was provided to Therapist Three for 5 follow-up sessions following the Alternating feedback (AF) session.

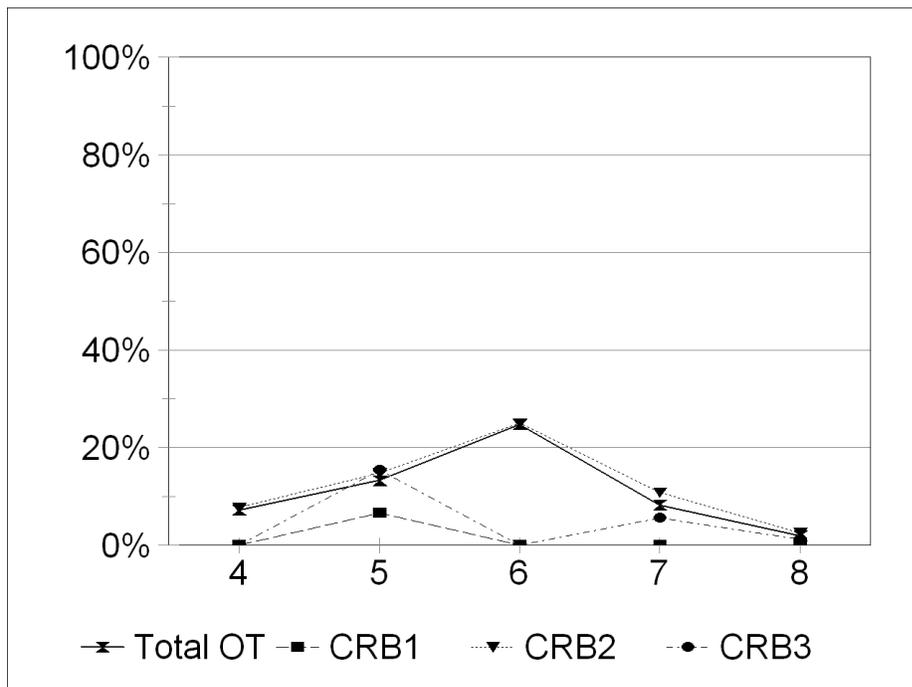
During the follow-up sessions Therapist Three's Total OT percentage trended up from 7.14% (low adherence) in Session 4 to 24.80% (moderate adherence) in Session 6, and then trended down to 1.89% (low adherence) in Session 8 (Figure 12). Therapist Three's OT percentage for the client's CRB 1 (complaining) was level at 0.00% for the five follow-up sessions with the exception of Session 5 in which the therapist's adherence to the treatment protocol reached 6.67%, still in the low range for adherence. Therapist Three's OT percentage for the client's CRB 2 (attempting solutions) was 7.70% (low adherence) for Session 4, trended up to 25.00% (high adherence) by Session 6, and then trended down to 2.54% by Session 8. Therapist Three's OT percentage for the clients' CRB 3 (recognizing relationship contingencies) was level at or near zero, except in Session 5 in which the OT percent reached the moderate adherence range at 15.38% .

Table 12. Raw Data from Follow-up Sessions with Couple Three.

Session	CRB1	CRB1 OT	CRB2	CRB2 OT	CRB3	CRB3 OT
1	0	0	26	2	2	0
2	30	2	54	8	52	8
3	0	0	124	31	1	0
4	1	0	74	8	71	4
5	12	0	118	3	82	1
Total	43	2	396	52	208	13

Note: Data in columns CRB1, CRB2, and CRB3, are counts of clients behaviors in each session. Data in columns CRB1 OT, CRB2 OT, and CRB3 OT are counts of therapist's OT responses.

Figure 12. Therapist Three On-Target Percentage over the Course of Follow-up Sessions



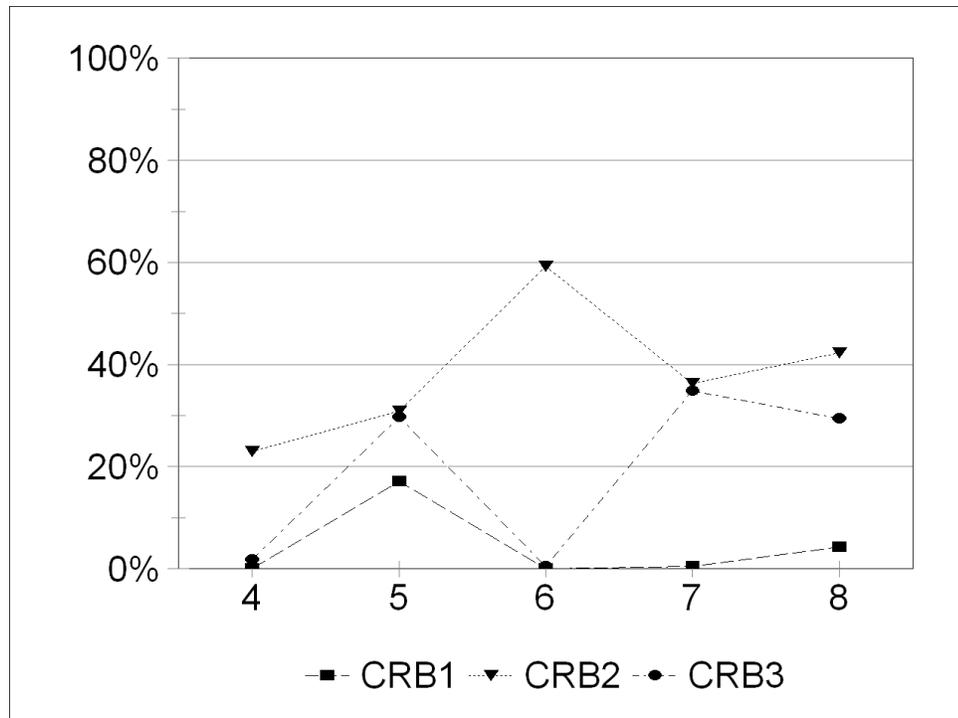
Note: CRB 1=complaining; CRB 2=attempting solutions; CRB 3= recognizing relationship contingencies. Total OT=Average therapist OT response to CRB 1, 2 and 3.

### Phase Three: The Effect of Therapist One's Adherence on Couple One's

Outcomes. As can be seen in Figure 1 Couple Three's CRB 1 (complaining) percentage was variable, starting at zero for Session 4, increased to 17.14% for Session 5, returned to zero for Session 6, and increased to 4.30% by Session 8. In Therapy Task 4 (Table 1) the expected response by the therapist to client complaining (CRB 1) is to structure the session (TIB 2) to attempt to return the focus to finding solutions (CRB 2) and recognizing relationship contingencies (CRB 3). The result of structuring the session (TIB 2) should result in fewer complaints (CRB 1) over the course of therapy. Therapist Three's OT percentage in response to CRB 1 (Figure 12) was at zero for all the sessions except Session 5, when it increased to 6.67%, still in the low adherence range. For Sessions 4 and 6, when the clients were emitting no complaining behavior (CRB 1) no OT responses are expected. However, even when very few complaints (CRB 1) were emitted in Sessions 7 and 8, Therapist Three's OT response remained at zero. Only in Session 5, when the clients increased their complaining behavior (CRB 1) to 17.14% did Therapist Three respond with structuring (TIB 2), and then only for 6.67% of the instances of CRB 1, remaining in the low adherence range.

Couple Three's CRB 2 (attempting solutions) percentage showed an upward trend across the follow-up sessions as predicted, beginning in Session 4 at 23.01% and increasing to 42.29% by Session 8. In Therapy Task 4 (Table 1) the expected response by the therapist to clients attempting solutions (CRB 2) is to reinforce the clients (TIB 3). The desired result of reinforcing the clients is to increase the amount of solutions seeking (CRB 2) behavior. Therapist Three's OT response (Figure 12) to the clients' CRB 2s

Figure 13. Percentage of Couple Three's Clinically Relevant Behaviors Emitted in the Follow-Up Sessions.



Note: CRB 1=complaining; CRB 2=attempting solutions; CRB 3= recognizing relationship contingencies.

trended up from 7.70% (low adherence) in Session 4 to 25.00% (high adherence) in Session 6 and this increasing adherence to the protocol may have reinforced the clients' increased use of CRB2s. However, this claim is offset by the fact that the therapist's OT responses trended down from Session 6 to Sessions 8 reaching 2.54%. The increases from Sessions 4 to 6 in both percent of CRB 2 emitted by the clients, and Therapist Three's increased OT response are indicative of desired changes for both the therapist and client. The coinciding declines in CRB percent and OT response in Sessions 7 and 8, appear to confirm the power of reinforcement, in changing client behavior. Specifically, when Therapist Three reinforced the clients for attempting solutions (CRB 2), the number of attempted solutions rose; when Therapist Three reduced the amount of reinforcement for attempting solutions (CRB 2), the clients responded with fewer of these behaviors. It is noteworthy that overall the clients increased the number of attempted solutions (CRB 2) across all sessions.

Couple Three's CRB 3 (recognizing relationship contingencies) percentage showed considerable variation although overall the trend was up slightly across follow-up sessions, from 1.77% in Session 4 to 29.39% in Session 8. In Therapy Task 4 (Table 1) the expected therapist response to clients' recognizing relational contingencies (CRB3) was to reinforce (TIB3) that behavior. As with CRB 2, the desired outcome of the therapist's TIB 3 (reinforce) is to increase the number of CRB 3s emitted. As can be seen in Figure 12 Therapist Three's OT percentage response to the Clients' CRB 3 varied across the follow-up sessions, but adherence remained low. Therapist Three OT percent for CRB 3s began at zero in Session 4, increased to the moderate adherence range

reaching 15.38% in Session 5, decreased to zero in Session 6, and remained low for Sessions 7 and 8, tallying at 5.63% and 1.22% respectively. Once again the therapist OT response mirrors the clients' percent of behavior emitted; both increase in Session 5, and then return at or near zero. However, the clients return to high levels of CRB 3 percentage in Sessions 7 and 8, although Therapist Three's OT response percentage is very low.

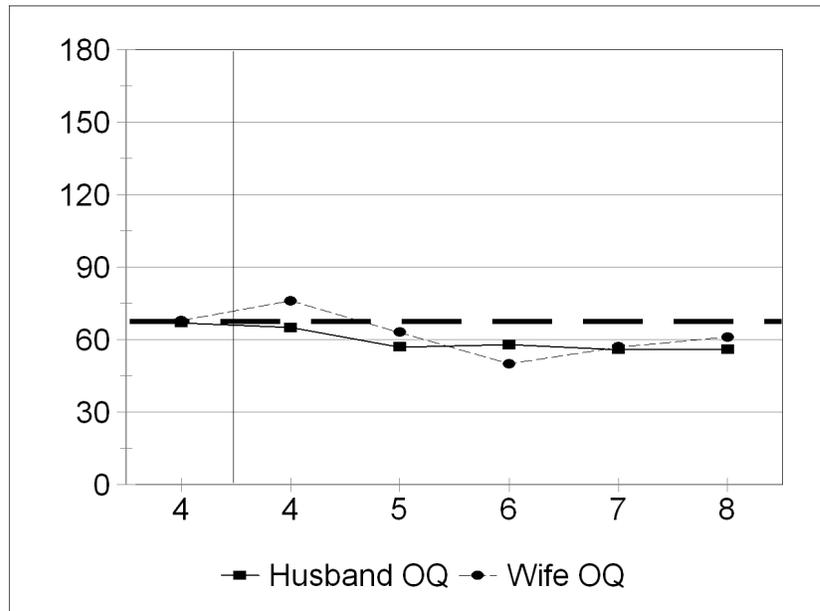
In turning to the Couple's outcome assessment scores we see that Couple Three's OQ-45 baseline scores for the OQ-45 were 68 and 67 (Table 10) for wife and husband, respectively, which are both in the clinical range (greater than 63). By Session 4 the clients' OQ-45 scores remained in the distressed range scoring 76 and 65, for wife and husband respectively (Table 13; Figure 14). They then followed a slight downward trend in Session 5 to at or below the cutoff line 63 for the wife and 57 for the husband. Although this was not a significant decrease, the husband's score moved below clinical cut-off and the wife's was right at clinical cut-off. By Session 6 the wife's OQ-45 score moved below clinical cut-off to 50 while the husband's score remained flat but in the non-clinical range, scoring 58. In Sessions 7 and 8 all scores remained below the cut-off, indicating that the clients had moved to the non-clinical population with scores for the wife of 57 and 61, and scores of 56 and 56 for the husband.

Table 13. Couple Two's Outcome Assessment Scores for Follow-Up Sessions.

	Session 4		Session 5		Session 6	
	OQ-45	RDAS	OQ-45	RDAS	OQ-45	RDAS
Husband	65	41	57	40	58	41
Wife	76	34	63	35	50	42

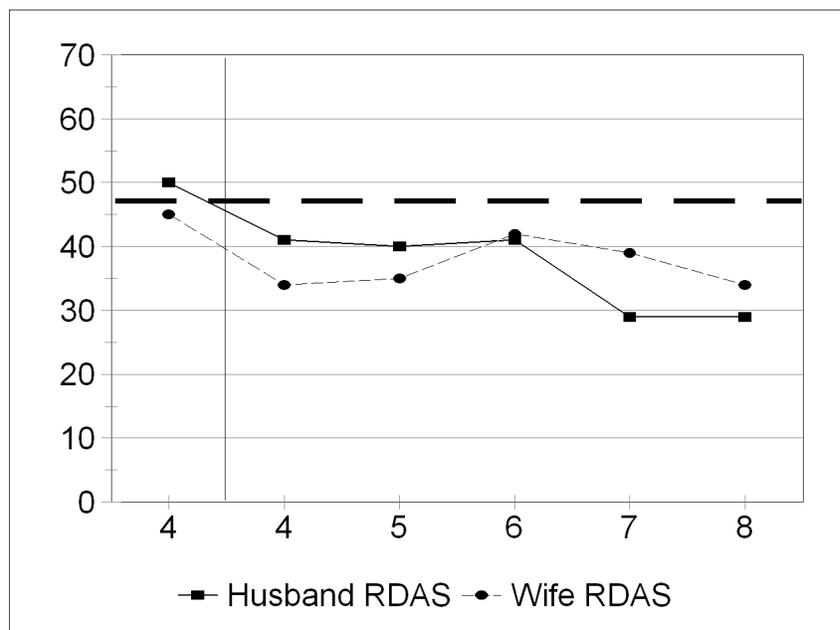
	Session 7		Session 8	
	OQ-45	RDAS	OQ-45	RDAS
Husband	56	29	56	29
Wife	57	39	61	34

Figure 14. Couple Three Outcome-Questionnaire 45 Data for Follow-up Sessions



Note: Dashed line = cut-off between distressed and non-distressed populations

Figure 15. Couple Three Revised Dyadic Adjustment Scale Data for Follow-up Sessions



Note: Dashed line=cut-off between adjusted and un-adjusted populations

Couple Three's baseline RDAS scores were 41 for both spouses (Table 10). By Session 4 the RDAS scores were 34 and 41 for wife and husband respectively (Table 13; Figure 15). For the follow-up sessions neither spouse crossed into the non-distressed range (Greater than 48). The husband's scores trended down slightly to 29 by Session 8. The wife's scores trended upward for Sessions 4, 5 and 6 ending at 42, with a Reliable Change Index (RCI) score of 7. For Sessions 7 and 8 the wife's scores trended down to 39 and 34 respectively, with an RCI score of 8.

Next we consider the possible relationship between Couple Three's outcome scores and Therapist Three's OT responses to the clients' CRBs. As with Therapist One and Two it is important to note that the OQ-45 and RDAS scores are assumed to lag from the previous session. In other words, the scores reported for each session actually represent the perceptions of the clients previous week as influenced by the previous session (Table 8). For example, the OQ-45 and RDAS scores reported in Session 5 represent each individual's perception about their psychological and marital distress for the previous week, which is assumed to have been influenced by events in Session 4. Therefore, the Therapist's behaviors in Session 4 are compared to the outcome scores collected in Session 5.

As can be seen in Figure 12, in Session 4 the supervisor observed that Therapist Three's OT percentage response to the clients' complaining (CRB 1), attempting solutions (CRB 2), and recognizing relationship contingencies (CRB 3) were low, and the OT percentage response to client off-task/listening to therapist (CRB 4) was high. This was followed, in Session 5 with the clients reporting OQ-45 scores that were in the non-

clinical range (Figure 14) for the husband (57), but still in the clinical range for the wife (63). There was little change in Couple Three's RDAS scores in Session 5. Both remained in the maritally distressed range.

As can be seen in Figure 12, in Session 5 the supervisor observed the Therapist Three's OT percentage responses to the clients' complaining (CRB 1), attempted solutions (CRB 2), and recognizing relationship contingencies (CRB 3) remained low while Therapist Three's OT response to the clients off-task/listening to the therapist (CRB 4) remained high. This was followed, in Session 6, by the wife continuing to report a decrease in perception of psychological distress reaching a clinically significant change into the non-clinical range. The husband's OQ-45 scores remained level in the non-clinical range (Figure 14). The wife's RDAS scores increased reliably in Session 6 but remained in the marital distressed range, while the husband's RDAS scores remained flat also in the marital distressed range (Figure 15).

As can be seen in Figure 12, in Session 6 the supervisor observed that Therapist Three's OT response to client complaining (CRB 1) could not be recorded since the clients emitted no complaining behavior (CRB 1). Therapist Three's OT response to client attempted solutions (CRB 2) increased, while OT response to recognizing relationship contingencies (CRB 3) decreased. Once again Therapist Three's OT response to client off-task/listening to therapist (CRB 4) increased. This is followed, In Session 7, with both the husband and wife reporting OQ-45 scores remaining level and in the non-clinical range (Figure 14). Both the husband and the wife report RDAS scores which remained in the marital distressed range (Figure 15). Therapist Three's improved

OT response to attempted solutions (CRB 2) and the lack of client complaining (CRB 2) appear to have maintained the clients' perceptions of individual psychological distress in the non-clinical range. However, the husband's perception of marital distress worsens after Session 6.

As can be seen in Figure 12, in Session 7 the supervisor observed that Therapist Three's OT response to client complaining (CRB 1), attempted solutions (CRB 2), recognizing relationship contingencies (CRB 3) remained low. In Session 8 Couple Three reported OQ-45 scores remaining in the non-distressed range (Figure 14) and their RDAS scores remained in the marital distressed range (Figure 15). As Therapist Three worsened in all responses, except to CRB 3, the wife worsened in her perception of the relationship. However, both spouses continued to remain non-distressed psychologically. For this couple it appears that perceptions of individual psychological distress and marital distress are unrelated.

### Summary and Conclusion for Study Three

In Study Three a functional analysis of Therapist Three's responses to three forms of supervision feedback—radio transmitted or Bug-in-the-ear (BITE); computer-assisted (CA); or phone-in—was performed and BITE was found to be most effective. The functional analysis was performed in Session 4 and Therapist Three subsequently received BITE supervision in the next four sessions.

During Phase Two of the study, BITE supervision appears not to have increased Therapist Three's adherence, as measured by Total OT percentage, across the course of the follow-up sessions. In examining Therapist Three's OT response to each CRB, it can be

concluded that BITE supervision did not serve to improve adherence across follow-up sessions. This ran counter to the predicted changes.

During Phase Three of the study of the effect Therapist Three's adherence on client behavior did not create the predicted changes. In spite of low levels of adherence, Couple Three's complaining (CRB 1) remained relatively low. Attempting solutions (CRB 2) and recognizing relationship contingencies (CRB 3) both increase, although with high variability. These changes would not be predicted given Therapist Three's low levels of adherence to the treatment protocol. As predicted, when therapists have a low level of adherence, assessment data shows a deterioration in both spouse's perceptions of marital satisfaction, across sessions. However, the couple's perceptions of individual psychological distress, also run counter to predictions, moving to and remaining in, the non-clinical range. For Therapist Three the use of BITE as the most effective form of supervision is inconclusive.

## Chapter 5: Discussion

The purpose of this research was three fold. First, to perform a functional analysis of three of the most common types of MFT supervision feedback forms on individual therapists' responses; namely phone-in, radio transmitted or Bug-In-the-Ear (BITE), and computer-assisted (CA) feedback. Second, each study determined the effect of the use of each therapist's most effective form of supervision on therapist adherence. Therapist adherence to a treatment protocol (Gottman, 1999) was measured by On-Target (OT) percentage. Third, each study determined the effect of the therapists' OT percentages and in-session behavior on clients' behaviors and on perceptions of marital distress and psychological states.

### Phase One

In the first phase of the study it was predicted that using an alternating treatment session, each therapist's most effective form of supervision could be discovered. As predicted, the study was able to determine a most effective form of supervision for each therapist. BITE supervision was found to be the most effective form of supervision for Therapists One and Three (Tables 2 and 4; Figures 1 and 3). For Therapist Two, CA supervision was found to be the most effective form of supervision (Table 3; Figure 2).

Phone-in feedback was found to be the least effective form of supervision for Therapists One and Two and was only minimally effective for Therapist Three (Figures 1, 2 and 3). For none of the therapists was phone-in found to be the best form for supervision feedback, in spite of indications by Therapists Two and Three, as written on their consent forms, that the phone-in was their preferred method of feedback. This result fits with

findings that phone-in feedback decreases therapist-supervisor collaboration (Mauzey & Erdman, 1997). However, others have found positive outcomes with phone-in supervision (Bistline, Matthews, & Frieden, 1985; Fenell, Hovestadt, & Harvey, 1986; Frankel & Piercy, 1990; Kivlighan, Agelone, & Swafford, 1991; Moorhouse & Carr, 2002).

The BITE and CA forms of supervision feedback appear to be somewhat more powerful agents for changing therapist behavior. This may be due to several factors. First the supervisor could intervene with little interruption to the session. The therapist could respond to the interventions with little loss of continuity. This may have allowed the therapist to remain more present and responsive to the clients. Secondly, the BITE and CA feedback were much more timely. The supervisor was able to intervene in the session without waiting for the therapist to stop the session to answer the phone. This meant that the supervisor could direct change, or reinforce therapist behavior without expecting the therapist to connect the feedback to behaviors in the past. Finally, the CA and BITE systems allowed the supervisor the freedom to reinforce the therapist.

Whereas the supervisor may have been reluctant to interrupt the session with a phone-in to praise the therapist, the supervisor using the BITE or CA forms of feedback could reinforce as easily as they could correct the therapist. This study offers some support to the view that supervisory feedback via BITE or CA was superior to phone-in feedback.

Phase One demonstrated the effectiveness of functional analysis of supervisory interventions. The nature of alternating designs allows for the investigation of the function of supervision feedback in changing therapist behavior. By comparing therapist

OT percentage over the course of a session in which different forms of feedback are used with careful control, a supervisor can see how their interventions affect the therapist's behavior. However, a point of major concern is the size of differences in the studies. In this research, no numerical guidelines were set to determine size of effect needed to determine difference. The criteria for determining the most effective form of supervision, was simply a higher average percentage. The small differences between phases may have been due to the low Adjusted OT scores. In all three studies one form of supervision met the criteria to be established as the therapist's most effective form of supervision.

Another point of concern in the Phase One data was the apparently precipitous drop in Therapist Three's Total OT percentage from a high baseline percentage of 30.3% (Figure 11) to 11.40% in the first segment. This drop was unexpected as the introduction of feedback appeared to improve Total OT percentage in the other two therapists. It could be that for Therapist Three the use of any form supervisory feedback was punishing, and had the opposite effect than intended. On the other hand, it could be that these clients needed considerable structuring by the therapist to get therapy started in this early treatment session. Further research using post-session interviews may provide supervisors with information about the therapist's perceptions of their responses to the clients' behaviors in-session.

## Phase Two

As noted above, for Therapist One and Therapist Three BITE supervision was used over the course of the follow-up sessions. For both Therapist One and Therapist Three BITE supervision did not create sustained changes in overall adherence, or in

improving adherence responses to individual CRBs.

As noted above, for Therapist Two Computer Assisted (CA) supervision was used over the course of five follow-up sessions. CA feedback appeared to maintain the Total OT percentage over the course of the follow-up sessions in the low range. In examining responses to specific CRBs, Therapist Two showed improvement in adherence in response to client complaining (CRB 1) and recognizing relationship contingencies (CRB 3). In both of these categories Therapist Two moved from low to moderate adherence.

Overall, neither BITE supervision, nor CA supervision produced all the predicted changes in therapist adherence. At best, BITE supervision proved to create high variability in adherence for Therapist One. However, BITE proved to be iatrogenic for Therapist Three's adherence. CA supervision produced the best results for adherence, although these results were mixed.

### Phase Three

Over the course of the follow-up sessions Couple One did not experience predicted improvements. Couple One also showed slight deterioration in perceptions of psychological distress (Figure 6), and in perceptions of marital distress (Figure 7). The apparent inability of BITE supervision to create sustained improvement in Therapist One's adherence seems to have played out in the worsening of Couple One's in-session behavior—as measured by CRB percent—and in outcome assessments.

In response to Therapist Two's in-session behavior Couple Two's in-session behavior improved moderately. Couple Two's outcome assessments also demonstrate moderate improvement. CA supervision appears to have been helpful in improving

Therapist Two's behavior sufficiently to create improvements for Couple Two.

Not surprisingly, Couple Three demonstrated few changes in percentages of CRBs. Couple Three's outcome assessments also demonstrate deterioration in perceptions of marital distress, accompanied by insignificant changes in reported psychological symptoms. This seems to support the view that for Therapist Three none of the feedback forms were indicated, as the alternating feedback session indicates. It is a shortcoming of this research that no protocols were prepared for the eventuality that no direct feedback may have been better for some therapists.

### Limitations

As with all small n studies, the generalizability of this research is limited. This research was conducted with first year Master's Students; therefore, findings may be applied to neophyte therapists in their first semesters of clinical practicum. The use of neophytes may also explain the low levels of treatment adherence obtained. Therapists in training programs are subject to many influences and time constraints, and low adherence to treatment protocol may have been due to lack of control of outside influences. This group was a convenience sample, based on the assignment to a certain practicum class, again limiting generalizability of the findings.

In designing the research, it was believed that the number of recorded observation points (10 per minute) would provide a large enough data sample to see significant differences in therapist response in the alternating feedback sessions. While the differences were arguably large enough for Therapist One, the interpretation was less distinct for Therapist Two and Three. Combined with the low levels of adherence

recorded, the numerical differences between OT responses to the feedback modes is small. In the future, establishing a significant difference score will help in determining the most effective form of supervision.

The lack of protocol for dealing with a therapist who shows greatest adherence with no feedback, was a shortcoming of this research. The researchers were unprepared for this contingency and asked the therapist to continue utilizing BITE, which was the most effective of the three forms of feedback. However, as the therapist did not show improvement over the course of the follow-up sessions, it is evident that moving to a no feedback condition may have been a better option.

When using the BITE and phone-in systems the supervisors verbalized the CRB codes. However, feedback given using phone-in and BITE outside of this research does not generally rely on the use of behavior codes. The use of uniform feedback is different from normal BITE and phone-in feedback. This research focused on differences in mode of feedback, but research comparing the actual use of the different forms of feedback, may be instructive.

The differences in the power of each feedback mode were also a concern. While CA feedback is continuous, BITE and phone-in feedback are harder to ignore. The CA system as it exists now does not include a measure of therapist's attention to feedback. When BITE and phone-in feedback are used, the supervisor is relatively sure that the message is received. With CA feedback no such assurance exists.

## Chapter 6: Conclusion

It has long been a tenet of MFT supervision that the use of feedback during live supervision should improve therapist performance. However, little research has been conducted to verify this belief. This research indicates that while supervision does have an impact on therapist in-session behavior, each individual therapist has a unique response to that feedback. The findings of this research indicate that neophyte therapists struggle to adhere to treatment protocols. Supervisors of master's level practicum students would be advised to investigate how each therapist responds to supervision and to find the mode that creates greatest adherence. Supervisors would also be advised to not rely on one method of feedback to supervise each student. BITE and CA feedback alone will not create the necessary change.

In conducting research on the effects of supervision the use of greater control may also be necessary. This may be accomplished by using therapists who have graduated, and are working towards licensure. When working with these therapists, finding those who have bought-in to the therapy model studied would be important as they are more likely to adhere to the treatment protocol. Another possibility is a change in training programs to focus on teaching best practice models and using adherence measures to grade students. In this way training in MFT would follow the field as it moves towards utilizing scientifically validated therapy (Denton, Walsh, & Daniel, 2002; Pinsoff & Wynne, 2000; Wampold, 2001).

For practitioners in the field, this study demonstrates that client behavior does not improve without therapist intervention. Even when client behavior in session appears to

be improving, marital distress may increase. This is especially true when therapist adherence does not improve. This study further demonstrates that when the therapists did not intervene appropriately the clients either worsened, or at best, stayed the same. When the therapists made even small improvements client behavior improved. Improving adherence to treatment protocols will always serve the best interest of the client.

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## APPENDIX A

### **Consent To Be a Research Subject**

We would like you to participate as a research subject in a study titled “The Effects of Direct Supervision on Therapist Behavior: a Functional Analysis.” The purpose of this study is to (a) determine which type of feedback to therapists is best at improving their behavior in session, and (b) determining how the feedback given effects clients.

In this study we are seeking couples over 21 years of age who are living together. The couples who participate in this study must agree to take several assessment tests prior to and following therapy. They will also be required to answer two weekly questionnaires. This data will be used to ensure that the couples are receiving the best treatment possible. If either of the members of the couple are clinically depressed they will not be allowed to continue in the study. Couples whose relationships are too deteriorated will be excluded. Also couples who exhibit psychotic symptoms, are currently having alcohol or drug abuse problems, or if they meet the criteria for domestic violence will not be allowed to participate in the study. Couples who do not meet the criteria will be offered other forms of therapy.

If you decide to participate in this study, and you meet our criteria, you will be asked to meet with an intern therapist for at least 7 sessions. The first two sessions will be assessment sessions and the next 5 will be treatment sessions. All sessions will be observed by an experienced supervisor. This therapy will be provided to you free of charge. This is a value of \$105 at the standard Comprehensive Clinic fee, or about \$560 if you went to a private therapist.

During this study your therapist will be receive feedback about their performance. This feedback is designed to help your therapist improve in their abilities as a therapist. The feedback will come in one of three ways. Your therapist will wear an earpiece through which the supervisor can talk to them. There will a phone in the room, and the supervisor may call the therapist with feedback. There will also be a computer monitor in the room. This will be behind you and will be used to show numeric codes to your therapist.

The risks in this study are those normally encountered in marital therapy. During the course of therapy you may find some discomfort in dealing with the emotion generated when you discuss marital problems with your spouse. You may find the information revealed by your spouse to be discomfoting. These discomforts should remit as therapy progresses and about 75% of the couples who complete the program find the treatment to be helpful.

Your participation in this study is completely voluntary and you are free to refuse to participate and/or withdraw from treatment at any time with no penalty. However, you should be aware that marital problems do no generally get better on their own. There are alternative treatments available, and if you wish you can request a different therapist, or referral to a private therapist in the community.

All information about you and your partner will be strictly confidential. All identifying information will be removed and replaced with control numbers. Your

participation in this study will not be revealed without your written consent.

We will be happy to answer your questions. If you have questions later please contact us. If you have questions about your rights as a research participant you may contact Dr. Shane S. Schulthies , Chair of the Institutional Review Board, 120B RB, Brigham Young University, Provo, Utah 84602, phone (801) 422-5490.

Shawn L. Thurber, MS  
Marriage and Family Therapy Program

D. Eugene Mead, Ed. D.  
Marriage and Family Therapy  
Program

Brigham Young University  
Phone: 422-3888

Brigham Young University  
Phone: 422-6512

I have read, understood and received a copy of the above consent, and desire of my own free will and volition to participate in this study and accept the benefits and risks relating to the study.

Signature \_\_\_\_\_

Date \_\_\_\_\_

Investigator \_\_\_\_\_

Date \_\_\_\_\_

APPENDIX B

**Consent To Be a Research Subject-Therapist**

We would like you to participate as a research subject in a study titled “The Effects of Direct Supervision on Therapist Behavior: a Functional Analysis.” The purpose of this study is to (a) determine which type of feedback to therapists is best at improving their behavior in session, and (b) determining how the feedback given effects clients.

If you decide to participate in this study you will be asked to treat one couple. During treatment you will be asked to receive feedback about your performance using three methods of direct supervision. We will use phone-ins to give feedback. We will also ask you to wear an earpiece connected to a walkie-talkie that we can transmit verbal messages to. We will also place a computer monitor behind your clients and use the CRB Tracker software to send you numeric codes about your performance. We will be coding all your sessions with the CRB Tracker to determine your rate of adherence to treatment protocols. This data will be shared with you after each session.

We know of no risks to you other than the risks normally encountered in delivering therapy. You may find the content and emotion in the therapy sessions discomfoting. However, there is nothing in this treatment program that will cause this discomfort to be any greater than you will encounter with other treatments you apply in the Brigham Young University marriage and family therapy program.

Your participation in this study is completely voluntary and you will be free to refuse to participate with no penalty. However, for the protection of the clients, if you begin treatment with a couple you will need to follow through until treatment is completed for that couple. You may stop participating in the study after completing treatment for any couple you accept as part of the study. Your refusal to participate or ending your participation after completing therapy with any couple will not influence your grade or standing in the practicum class in any way. All information identifying you and your clients will be removed and replaced with control numbers. Your identification will not be revealed without your written consent.

We will be happy to answer your questions. If you have questions later please contact us. If you have questions about your rights as a research participant you may contact Dr. Shane S. Schulthies , Chair of the Institutional Review Board, 120B RB, Brigham Young University, Provo, Utah 84602, phone (801) 422-5490.

Shawn L. Thurber, MS  
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Brigham Young University  
Phone: 422-3888

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Marriage and Family Therapy Program  
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Signature \_\_\_\_\_ Date \_\_\_\_\_  
Investigator \_\_\_\_\_ Date \_\_\_\_\_