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A WORKING MODEL OF
RELATIONSHIP ENHANCEMENT BETWEEN FATHER AND SON
(KOREAN IMMIGRANT)
-INTERPERSONAL PROBLEM-SOLVING SKILLS TRAINING-

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Do Young Lee

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RELATIONSHIP ENHANCEMENT BETWEEN FATHER AND SON
(KOREAN IMMIGRANT)
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By

Do Young Lee

A DISSERTATION

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ABSTRACT

A WORKING MODEL OF RELATIONSHIP ENHANCEMENT
BETWEEN FATHER AND SON (KOREAN IMMIGRANT)
-INTERPERSONAL PROBLEM-SOLVING SKILLS TRAINING-

By

Do Young Lee

The purpose of the study was to design and evaluate a model to enhance the relationship between immigrant Korean fathers and their adolescents in the United States. Two modes of skills training were employed: (a) social problem-solving skills (SPSS), and (b) interpersonal communication skills (ICS).

Four Korean immigrant fathers and their four Korean American sons who were living in New York City participated. An ABA single-subject quasi-experimental design was employed. Two pairs were assigned to SPSS and the other two to ICS. The four pairs received six sessions for baseline observation, 11 sessions for training, and six sessions for follow-up observation.

As a dependent measure, the Interaction Behavior Code (IBC) was used to code 10-minute segment videotape for 23 sessions. Two trained raters were employed to code the 25 negative communication responses and seven positive communication responses for fathers and sons separately, and

four overall evaluations for father and son together. The mean of the two raters' scores was used for data analysis.

The following three hypotheses were tested: (a) father's and son's negative responses would remain the same (no change) during the baseline phase, but during the training phase, those responses would be reduced significantly, and during the follow-up phase, the effect of intervention would continue, (b) in contrast, father's and son's positive responses would improve during the training and follow-up phases, and (c) overall evaluation of each pair's communication and problem-solving patterns would also improve during the training and follow-up phases.

Three different methods of data analysis were employed to assess the effectiveness of treatment: visual inspection, C statistic, and ITSACORR program. The results of statistical analysis were presented in the format of a "voting method," which was designed by this researcher.

According to this voting method, the first hypothesis was partially supported by three different methods of data analysis (37.5%). The second hypothesis was supported by two methods of statistical analysis (C statistic and ITSACORR), but it was not meaningful in terms of clinical or social validation. The last hypothesis was supported by three different methods of data analysis, but not fully supported. There was significant improvement based on overall impressions.

DEDICATION

This dissertation is dedicated to

my grandfather who was a lonely freedom fighter and

my mentor

my grandmother who was handicapped for many years

my father who was an innocent victim of Korean War

my mother who has sacrificed her whole life for

reconstructing my family

my former wife, Choon Hee Koh, who became an innocent victim

of military dictatorship

my wife, Hannah Lee, who has dedicated her life for endless

supporting six students

my brother and my sister-in-law who took care of my three

children when they lost their mother

my Korean church members and pastors who have supported me

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Dr. Kyung Lin Kim, who left this world earlier

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my five children, Ju Hee, Samuel, Seok Hee, Gun Woo, and

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to finish my work.

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Dr. Richard G. Johnson, committee member and my teacher, who gave me endless support even after retiring from the University.

Dr. Vincent Hoffman, committee member, who devoted your earlier years for the Korean people and guided me in working with my people.

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My teachers, professors, and colleagues in Korea, without your support I could not accomplish this academic career and way of living.

Dr. Madu Kulkarni, occupational therapist at Clinic of Michigan State University, and my long time friend, who willingly edited my paper work.

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CHAPTER 1

INTRODUCTION AND REVIEW OF THE LITERATURE

Purpose and Rationale

The purpose of this study was to design and evaluate a
model to enhance the relationship between immigrant Korean
fathers (the first generation) and their adolescents (the
second generation) in the metropolitan areas (e.g., New York
City, Los Angeles) of the United States. The main purpose
of the educational intervention was to help the Korean
fathers and sons be able to negotiate or resolve conflicts
in the process of transitions and acculturation.

This study focused on the situation-specific target
population. It focused on teaching them social problem-
solving skills, conflict negotiation, and basic
communication skills. The contrast of cultural differences,
Eastern/Korean vs. Western/American, was introduced to
increase understanding of the possible sources of conflict
from cultural differences. The mode of intervention was
educational, not therapeutic. The basic assumption of this
research was that through enhancing interpersonal

relationships and learning social problem-solving skills, the father-son's conflictual problems would be solved in the direction of mutually beneficial outcomes for the family and society.

Although many models have been drawn up and are suggested for use with United States families, they are not appropriate to Korean immigrants in the United States. Most of them are not designed to fit the cultural-social-ethnic context unique to Korean immigrants.

Many researchers have investigated the causes of these problems and suggested several procedures to handle them. The results of the applications have not been satisfactory for all involved.

The 1980s and 1990s have been characterized by high rates of unemployment. Because most recent retrenchments have been in the manufacturing sector where male workers predominate, most of the job loss has been among men (McLoyd, 1989). Moreover, structural changes in the economy have hit socially disadvantaged groups especially hard. According to Conger, Conger, Elder, Lorenz, Simons, and Whitbeck (1992), economic hard times can have severe adverse consequences for families, including increased risk of marital dissolution, family disorganization, physical abuse, and child neglect. These investigators suggested that parental behaviors induced by economic hardships increased emotional distress leading to disruptions in both marital

and parental behavior and maladjustment in adolescent males. When economic conditions worsened to the point that parents were able to perceive deterioration in their financial situation, many became depressed, demoralized, pessimistic about the future, and generally less stable emotionally. These kinds of negative moods are positively related to irritable or hostile behavior with family members and also to withdrawal from, and reduced effort in, socially skilled behaviors such as effective parenting practices. The negative mood exacerbated spousal conflict and reduced the level of investment in skilled parenting.

Patterson, DeBaryshe, and Ramsey(1989) and McLoyd (1989) suggested that stressful family circumstances have their greatest impact on children and adolescents through the disruption of parental behavior. In addition, marital conflict was directly associated with conduct problems, especially for boys.

The father-son relationship is especially important in resolving many of today's social problems, such as violence, racial tension, and gang warfare. In 1986, over two million adolescents were arrested for crimes such as theft, robbery, rape, drug abuse, and vandalism (Patterson et al., 1989).

Many of the fathers of Korean American families are surrounded by very stressful situations: outside of the home, employment problems abound, and within the home, conflictual father-adolescent relationships occur.

Socially disadvantaged groups, like Korean immigrant parents, have severe sociopsychological problems. Specifically, in cities such as Los Angeles and New York City, racial tensions have intensified between Korean merchants and the predominately Black communities in which they are often located. One of the causes of this tension is a lack of communication between these two ethnic groups, probably because of cultural differences and a language barrier. The Koreans are not well prepared to face racial prejudice when they come to the United States as immigrants. Ironically, this kind of communication barrier is also evidenced among Korean parents and their children in their homes.

Generally, most Korean immigrants have higher a level of education and social status in Korea than the average American has in the United States (Meisenheimer II, 1992), but new Korean immigrants usually must engage in lower level jobs. Some of them start their own businesses but have to locate in poor neighborhoods, such as urban ghettos where they become easy targets of anger and crime. As a reaction, this leads to another problem situation where some Korean adolescents become involved in gangs. Gangs have rationalized their activities as a self-defensive maneuver. These gangs have become cults, and they have created critical social problems in metropolitan areas. They are armed with deadly weapons. Many Korean youths (usually

teenagers) have been involved in these groups, under the guise of self-defense. Many Korean parents feel trapped, helpless, and dismayed with these situations. Although many Korean churches exist, they have not tackled this social issue.

Abe and Zane (1990) observed that Asian immigrants faced language difficulties, unfamiliar role expectations, conflicts due to clashing value systems, intergenerational friction, and various other stresses inherent in attempting to reconcile two different cultural systems. At times, these stressors have led to psychological maladjustment and other mental health problems. Abe and Zane assessed levels of psychological maladjustment among AsianAmerican college students. They found that foreign-born Asian Americans continued to report greater levels of interpersonal distress compared with White Americans and American-born Asian American groups.

Richards (1991) pointed out that psychological separation and differentiation from parents was an important developmental task of late adolescence and early adulthood. This kind of separation would not be a main issue in Korean traditional families. Traditionally, interdependence has been highly valued and sustained in Korean society. By contrast, American society has invented and reinforced the Social Security system to protect the individuality and working rights of citizens as long as they live.

In Korean society, the family security system has been inherited from generation to generation. Thus, the relationship among grandparents-parents-offsprings (especially the eldest son) has reinforced interdependence very well. For Korean immigrants, however, acculturation means that this tradition into question. The offspring of immigrants do not value the relationship: they have become "Americanized," so to speak. Father-son conflicts are created through this process. The generation gap becomes too wide to cross.

Pedersen (1991) wrote that there are three phases of acculturation: contact, conflict, and adaptation. He described this process as a period of "culture shock" that encompassed a U-shaped curve of acculturation over time. The three phases progressed from initial excitement and optimism in the course of contact with another culture (it could be described as realizing the "American dream"), to feelings of failure and depression (conflict and trauma), and then recovery to a new level of excitement and optimism (adaptation). Members of the younger generation, especially those under 20, seemed to experience less trauma than their parents. Learned helplessness was recognized among older people and among youths. On the other hand, the opposite process, such as "aggression" or "anger" toward the older generation, was observed.

Abramson, Seligman and Teasdale's (1978) learned

helplessness model, based on their research of animals, can explained how the "culture shock" causes this symptom. In the researchers' laboratory, experimental animals (e.g., rats and dogs) that had received an inescapable shock, developed the state of "learned helplessness." This sometimes led to depression.

Abramson, Metalsky, and Alloy (1989) revised the conception and called it hopelessness depression. In their revision, they emphasized that hopelessness is a hypothesized proximal sufficient cause. Korean parents are fighting an already-lost battle: the breakdown of the family security system and kinship ties.

In summary, most of the fathers of Korean American families in the United States have been surrounded by very stressful situations: from outside the family, job/business situations and a hostile surrounding community; and from within the family, conflictual father-child relationships. There are no available organizations to consult with about these problems. They usually end up dealing with punishment-oriented law enforcement institutions (e.g., police departments, courts, juvenile correction offices). Community-based resources and support systems are not in existence in the Korean American community.

Adolescence is a period in which many parent-child conflicts arise as teenagers increasingly assert their independence from their families (Robin, 1981). From a

social learning perspective, parent-adolescent conflict can be viewed as the result of skill deficits and inappropriate attitudinal responses that lead to reciprocally punishing transactions. This perspective can be applied to Korean families. Behavioral misconduct and antisocial behavior have been very well scrutinized through social-learning paradigms. According to Kazdin (1985), social-learning treatments included such procedures as parent-management training, cognitive-based therapy, and behavioral family therapy. Several treatments have been implemented to alter antisocial behaviors, including diverse forms of individual and group therapy. One of the most promising approaches was parent management training, which has been shown to produce therapeutic change in children with aggressive and other antisocial behaviors (Kazdin, 1987).

Most parent management training programs have been developed for mothers and their children. Most participants in the studies have been mothers. The research subjects in Kazdin's study (1987) consisted of mostly boys (45 out of 56). The boys were admitted for acute disorders, including highly aggressive and destructive behavior. Most of them were referred by authorities and significant others, not on their own initiative. In many clinical cases, parents or guardians of the adolescents were either not available or not willing to participate in the treatments. Other treatment options were cognitive-behavioral treatments that

trained the child to use problem-solving skills in situa-
tions where interpersonal conflict and antisocial behavior
emerged (Kazdin, 1987).

Some researchers have advocated social-skill training
(e.g., Upper and Ross, 1985), while others have advocated
interpersonal cognitive problem-solving skills training.
These two approaches overlap in their definition of skill
training. The connotation of social skill training is
similar to interpersonal relationship skill training (e.g.,
teaching basic communication skills). The basic idea of
cognitive problem-solving skill training can be traced down
to the root of Dewey's scientific thought process.
According to Dewey (1933), there were five phases, or
aspects, of reflective thought:

(1) suggestions, in which the mind leaps forward
to a possible solution; (2) an intellectualization of
the difficulty or perplexity that has been felt
(directly experienced) into a problem to be solved, a
question for which the answer must be sought; (3) the
use of one suggestion after another as a leading idea,
or hypothesis, to initiate and guide observation and
other operations in collection of factual material;
(4) the mental elaboration of the idea or supposition
as an idea or supposition (reasoning, in the sense in
which reasoning is a part, not the whole, of

inference); and (5) testing the hypothesis by overt or imaginative action. (p. 107).

In the work of Patterson and his colleagues (1989), a model of social learning family intervention was developed that focused on mother-child interactions, and the mother was thought to be a victim of the so-called "coercive process." The main cause of a child's behavioral misconduct was strongly associated with the child management skill deficit of the mother. The central assumption of this model was that conduct disorder was acquired and maintained through social learning processes in the family.

In these models, the role of fathers was not clearly defined in the treatment. Also these models did not clarify the role of multicultural and developmental perspectives.

Definitions

The following are definitions of terms that are used extensively in this research:

Antisocial behaviors refer to conduct disorders, delinquency, and substance abuse among adolescents. More concrete definitions of this term will be presented in the literature review section later in this chapter.

Social problem-solving skills refer to the cognitive-behavioral process by which an individual attempts to identify, discover, or invent effective or adaptive means of

coping with problems encountered in everyday living (adopted
from D'Zurilla and Nezu, 1987).

Problem refers to a life situation that demands a
response for effective or adaptive functioning but for which
no effective or adaptive response is immediately apparent or
available to the individual confronted with the situation.

An effective solution is defined as a coping response
or response pattern that alters a problematic situation, or
one's personal reaction to it, such that it no longer is
perceived as a problem. This occurs by maximizing other
benefits and minimizing associated costs. In this view, the
effectiveness of a solution (i.e., social competence)
depends on the particular goals and evaluative standards of
the problem-solver or significant others who are responsible
for judging the problem-solver's performance.

Solution implementation refers to the performance of
the solution response(s) itself(themselves) in the actual
problematic situation. The reported solution and its
implementation are the products or outcome of the process of
discovery. It is important to distinguish between them for
counseling practice, given that different treatment
strategies could be used for a person who may be good at
discovering an effective solution but poor in carrying it
out. Here, solution implementation is distinguished from
the problem-solving process (the process of discovery).

Coping is defined as attempts to manage psychological distress (i.e., demands that are appraised as taxing or exceeding the resources of the person); but excluded from this definition are automatic adaptive behaviors and thoughts that do not require effort (see Lazarus and Folkman, 1984).

Social skills are defined as the specific abilities that enable a person to perform competently at particular social tasks (McFall, 1982). Such tasks include those that are required for adaptive functioning or social competence, ranging from relatively minor tasks, such as "taking out the garbage," to highly significant tasks, such as "obtaining a new job." Thus, the concept of social skills is a broad concept that includes all problem-solving and coping activities, plus all the routine, overlearned, effortless, or automatic adaptive behaviors that enable a person to deal competently with the demands of everyday living. Included in this concept are not only cognitive and motor skills but also physiological skills (i.e., all sensory processes and aspects of autonomic regulation and control).

In short, social skills are specific cognitive, motor, and physiological responses and processes that enable a person to perform a task competently.

Social competence is a general, evaluative term that refers to the quality or adequacy of a person's overall performance of a particular social task, as judged by the

individual or by significant others. Measures of social
skills should focus on the specific abilities that
contribute to task performance, whereas measures of social
competence should focus on the overall task performance
itself.

Review of the Literature

Even though the model in this study was to be confined to
the training of interpersonal communication skills and social
problem-solving skills between Korean fathers and their
adolescent sons, the literature reviewed were not limited to
these two areas of research. Some ideas from the socio-
psycho-physical developmental perspective were needed to
understand the middle-aged fathers and the growing
adolescent sons.

Developmental Perspectives

Ginsberg (1977) concluded that adolescence was a very
difficult period of development, both for the adolescent
male and his family. At least four major transitional
problems occurred that needed to be resolved during
adolescence:

> (a) a shift in ways of relating to parents, (b) the
> need to establish a personal sexual identity, (c) the
> need for adopting a suitable system of values, and (d)

a choice of a life work.

These changes and achievements take place within the context of the family and, in turn, have a major impact on family functioning. In fact, when major difficulties and conflict arise, one usually can look to the family for the etiology of the crisis and/or its resolution. Even when the adolescent leaves his family, he carries within him the relationship patterns and predispositions that he developed within the family. This approach does not discount the strong influence of his peer group, but even the nature of his relationship with his peer group is to a large extent an outgrowth or reaction to his relationship with his parents and family. (pp. 227-228)

While adolescents experienced these difficulties and problems of mastery, their parents may also have reached a problematic stage of life, the so-called mid-life transition. Also at this stage, parents often began to see more clearly the limitations of their lives, work, and marriage. Thus, not only did adolescents and their parents suffer difficulties arising from within themselves, but they also had to deal with difficulties arising out of the internal conflicts and frustrations of the others in their families. Unless mutually satisfactory adjustments were made, conflicts escalated and the emotional growth of the

individuals and the unity of the family, were threatened.

According to Hamachek (1992), Erikson gave more pains-
taking attention to the first five stages among his eight
developmental stages, hence, understanding the early years
was important. Hamachek stated that most adolescents
belonged to the stage of "identity versus identity
confusion" (12 to 20 years). Each stage represented a
"psychological crisis" or turning point when both potential
and vulnerability were greatly increased, a time when things
may go either well or not well depending on one's life
experiences. The ratio between the positive (healthy) and
negative (unhealthy) qualities associated with each stages
was very important to understand an individual's self.
Hamachek (1992) observed that it was desirable that there be
more positive ego qualities than negative ego qualities.
But he advised that we should not overlook the possible
value to be found in negative ego qualities. He gave these
examples:

> A certain amount of mistrust helps people to be
> less gullible and more cautious; a certain readiness
> to feel shame and doubt helps people behave
> appropriately and pursue assertively goals that are
> important to them; the capacity to feel guilt helps
> people make correct moral judgments and behave
> responsibly toward others; knowing what it is like to
> feel inferior helps people stay motivated to do their

best; and a certain degree of identity confusion helps people sharpen their self-perceptions and make new adjustments in light of new experiences and changing life circumstances (p.9).

It has been presumed that the nature of parent-adolescent attachments is critical in the formation of identity. Lopez, Watkins Jr., Manus, and Hunton-Shoup (1992) explored a multivariate model to explain how the adolescent develops the interactional, affective, and problem-solving competencies that individually and collectively promote adaptive identity formation. They assumed that the development of a clear and stable identity was formed by the experience of both autonomy and connectedness in one's significant relationships and attachments. Thus, during late adolescence, the quality of the parent-adolescent relationship was a primary context for identity development. When these relationships operated to permit and encourage both self-expressive and mutuality exchanges between participants, they provided the adolescent with the dual experience of individuality and connectedness. Interpersonal conditions presumably set the stage for the adolescent's identity development by encouraging self-appraisal, as well as perspective-taking competencies.

Richards (1991) pointed out that psychological separation and differentiation from parents was an important

developmental task of adolescence and early adulthood.
Richards believed the following four dimensions are
important: (a) functional separation, (b) attitudinal
separation, (c) emotional separation, and (d) conflictual
separation. The late adolescent's successful separation-
individuation should ultimately enhanced and deepened the
experience of connectedness with parents.

Lopez et al. (1992) observed that a clear index of
appropriate psychological separation was the level of
conflictual independence in the parent-adolescent
relationship; that is, the extent to which this relationship
was reportedly free from enduring conflict, anger, guilt,
and mistrust. A high level of parent-adolescent conflictual
independence suggested that the relationship was not
inordinately stressed by the developmental task of
separation-individuation and that a functional balance of
individuality and connectedness had likely been achieved.
On the other hand, parent-adolescent relationships that were
characterized by conflictual dependence indicated the
dominant presence of emotionally reactive interactions.
This suggested that the family context had not yet achieved
the level of differentiation that was necessary to support
the adolescent's psychological development.

Ivey (1991) showed how to integrate the cognitive
developmental perspectives into counseling practice. The
counselor's main task was to facilitate client progression

over the life span --to help individuals and families learn
from the culture, learn how to act within that culture, and,
when necessary, change that culture. Becoming one with a
culture required developing maturity and mutual respect.
Changes and life transitions can presented difficulties for
individuals and their families.

According to Ivey life changes represented our
developmental movement over the life span and could be times
of celebration--marks of achievement, of growing up. These
changes could also be times of separation, which brought
sadness because past relationships are changing. As our
children matured, we mourn the loss of the child as we
celebrated the birth of an adult. If attachment and trust
had not been solidly developed, life transitions became
especially difficult.

Twin developmental tasks--separation and attachment,
autonomy and connection--guide the developmental process.
Family theory is concerned with issues of enmeshment/
involvement and disengagement/individuation. Ivey
emphasized that, as helping professionals, we seek to assist
individuals and families to develop and find a balance
between these tasks. In this effort, we need to acknowledge
that each client has widely varying patterns of coping with
these issues. Some families and cultures stress
individuality and autonomy, whereas others seek a more
relational, connected orientation.

A variety of exercises should help make the abstract concepts more immediately meaningful and concrete. Clearly, much of counseling and therapy is about human development. Yet, developmental theory tends to be separated from interviewing practices.

Ivey (1991) has devoted his efforts to combining the developmental perspectives into counseling practice and showed many concrete examples of applications. Ivey also emphasized Sue's (1990) minority identity developmental theory, which focused on the cultural context in the development of identity. Sue's theory provided clear examples of how individuals of minority groups view the world.

Ivey's developmental counseling and therapy (DCT) began with the observation that Piagetian theories of child development and cognition also applied to adolescent and adult development. Children go through identifiable processes of growth, as do adolescents and adults. When we face a new developmental transition (for example, the birth of a child, a divorce, the loss of a loved one), we often "lose" our adult selves and return to cognitions and feelings similar to those of children. There is no definable end to development except death. DCT offers specific methods for facilitating change and developmental transitions for clients (for a complete theoretical exposition, see Ivey, 1991).

According to Ivey (1991), our first task as a professional helper is to understand how the client makes sense of the world. By understanding the client's frame of reference, we can better plan interventions to facilitate change and life-span development within the appropriate cultural framework. Empathy is a word we use when we talk about understanding the world as others experience it. DCT offered techniques that can facilitate a more complete sense of empathy with the client.

Our understanding of the client's world is shaped by our theoretical orientation (Rogerian, behavioral, psychodynamic, family systems). Ivey suggested that imposing our theoretical orientation on the client might be helpful, since it could provide the client with a new or expanded frame of reference for viewing the world. The drawback is that we start with our theory rather than with the client. Furthermore, even the most humanistic theory might limit the client's expression of self. Fortunately, it is not that easy to impose our ideas on clients, particularly those of subcultures. Research shows that 50 percent of Third World or minority students did not return for a second counseling interview (Sue, 1981). We need to understand the client's way of making the world meaningful. In addition to combining the developmental theories into counseling practice, Ivey also emphasized that assessing the cognitive-developmental level of a client was the most

important and basic dimension of this developmental
framework.

Cultural Context in Counseling

Levine and Moreland (1991) analyzed the role of shared
cognition in work groups. According to this approach we
could put the family in a work group without losing any
meaning. Their definition of a work group was: three or
more persons who interacted regularly to perform a joint
task, who shared a common frame of reference, who had
affective ties with one another, and whose behaviors and
outcomes were interdependent. For the purpose of this
study, this definition had been modified slightly. The
number of members should be changed from three or more to
two or more. In this approach, Levine and Moreland focused
on one of the defining characteristics of groups--the
existence of a common frame of reference. This common frame
of reference was often been described of as the group's
culture.

Among many who have defined group culture, these
authors emphasized two related perspectives. First, culture
was often viewed as a set of thoughts that were shared among
group members. These thoughts guided group members' actions
and provided a common interpretive framework for their
experiences. Second, culture was often viewed as a set of
customs that embodied the thoughts that group members

shared. These customs served to remind group members that their experiences could (and should) be interpreted in common ways.

Biglan, Glasgow, and Singer (1990) pointed out the need for a behavioral science of larger social units, i. e., childrearing practice and cultural practices. They cited research from Patterson, DeBaryshe, and Ramsey (1989) who pointed out "the beneficial effects of four types of parenting practices on outcomes for children: (a) monitoring their children's behavior, (b) use of consistent and non-coercive discipline practices, (c) skill in discussing problems with their children, and (d) positive support for the child's prosocial behavior. The absence of these parenting practices is associated with a higher risk of antisocial behavior, poor performance in school, and social rejection by peers" (206).

Biglan et al. (1990) adopted the definition of cultural practices from Glenn (1988) who stated that it "may be defined as the interlocking behaviors of two or more people. Examples of cultural practices include: (a) teenagers having babies in inner cities, (b) parents spanking their children, (c) communities voting taxes to pay for schools, and (d) communities' use of electrical power" (206). A cultural practice can be studied in terms of its incidence and prevalence. The incidence of a practice was the frequency with which it occurred in a defined population during a

given time period. The prevalence of a practice was the proportion of a defined population that engaged in the practice at a given time.

For practical purposes, "it is very useful to consider the prevalence of day care for children aged 3 to 5 who are at risk for school failure as a cultural practice for the purpose of identifying governmental, business, and family factors which might be used to increase the availability of day care" (p. 200).

This example showed how the larger context affected behavior problems. They brought a concept of the meta-contingency--the relationship between a cultural practice and its outcome, i.e., the survival value of a practice depended on its outcome. The concept of meta-contingency underscored the importance of understanding the outcomes of a cultural practice and attempting to arrange outcomes that would contribute to the survival of practices we wished to encourage.

Physio-psychological Perspective

Buchanan, Eccles, and Becker (1992) reviewed the literature on hormone changes in adolescence and their effects on mood and behavior. They said that from a physiological standpoint, hormones acted on the brain to affect behavior in two basic ways; these were organizational effects and activational effects. With

respect to organizational effects, sex hormones can influence personality and behavior through direct effects on the course of early brain development. These effects were permanent and did not depend on subsequent hormonal actions. As for activational effects, hormones could activate specific behaviors through their contemporaneous impact on both peripheral and neural-based processes. These effects tended to be immediate or only slightly delayed. For example, studies of humans have indicated that violent criminals and repeat offenders had higher concentrations of testosterone than less violent prisoners. Men with extremely low concentrations of testosterone were typically more passive and dependent than men with more average concentrations. According to several reports, most acts of deviant behavior increased beginning in late childhood or early adolescence and peaked in middle-to-late adolescence, after which they began to decline. Substance use (which did not decline until early adulthood) and violent crimes (which peaked in early adulthood) were exceptions.

In summary, all adolescents do not exhibit aggressive or delinquent behavior, even though all experience increases in levels of hormones. Factors associated with changing roles, socio-cultural expectations, and the timing of puberty explain much of the delinquency that occurs. Among boys, however, the activation effects of androgens may lead to more aggressive or rebellious behavior, especially if the

higher concentrations occur in combination with environmental situations conducive to aggressive response. When adolescent boys are provoked, testosterone may affect aggressive response by lowering tolerance to frustration. Among people generally, whether adolescent or adult, those who already have problems with rebelliousness and antisocial behavior seem to be affected by testosterone in the degree and direction of that behavior.

Social Learning Perspectives

Parent Management Training Program (PMT)

Patterson et al. (1989) observed that families of antisocial children were characterized by harsh and inconsistent discipline, little positive parental involvement with the child, and poor monitoring and supervision of the child's activities. Patterson et al. referred to two theories to explain these developments: control theory which are originated in the field of sociology, and social interaction theory. The former theory viewed harsh discipline and lack of supervision as evidence of disrupted parent-child bonding. Poor bonding led to a failure to identify with parental and societal values regarding conformity and work. These omissions left the child lacking in internal control. The correlational research showed that youths who had negative attitudes toward school, work, and authority tended to be more

antisocial.

The social interactional perspective takes the view that family members directly train the child to perform antisocial behaviors. That is, parents tend to be incontingent in their use of both positive reinforcers for prosocial behaviors and effective punishment for deviant behaviors. The effect of these inept parenting practices is to permit dozens of daily interactions with family members in which coercive child behaviors are reinforced. The coercive behaviors are directly reinforced by family members. The most important set of contingencies for coercive behavior consists of escape-conditioning contingencies. The child uses aversive behaviors to terminate aversive intrusions by other family members. This perspective could be extended to explain the harshness of gangsters around urban areas.

Patterson (1964, 1986, 1990, 1991) developed a theoretical framework and provided supporting research to explain specific interaction patterns, including parental discipline practices, that led to the development of antisocial behavior in the home.

Patterson referred to his view as coercion theory. Coercion was defined as a type of interpersonal interaction in which the deviant behavior of one person (e.g., the child) was supported or directly reinforced by the other person (e.g., the parent). The notion of coercion was meant

to explain a particular type of interaction pattern, often referred to as a reinforcement trap. Deviant behavior performed by a child and directed toward a parent--usually the mother--was reinforced when the parent gave in or complied. The trap was that the parent yielded to end the child's aversive behavior in the short run, and inadvertently increased the likelihood that the behavior would recur in the future.

Essentially, Patterson's coercion theory was based on the view that aversive behaviors on the part of children or parents were maintained by the operation of reinforcement contingencies. For example, the child might yell, argue, or physically threaten the parent to obtain a special privilege. The parent, when exposed to the highly aversive (coercive) behavior, might yield or comply with the request in an effort to terminate the aversive behavior. Giving in or yielding on the part of the parent served to reinforce the child for the aversive behavior.

From the standpoint of the child, positive reinforcement, compliance on the part of the parent, was provided for aversive behavior. Thus, the aversive behavior was likely to increase in the future. From the standpoint of the parent, negative reinforcement was operative. The aversive behavior of the child was terminated when the parent complied with the request. Termination of the aversive event increased the likelihood that the parent

would comply in the future. The fact that aversive behavior increased in the long run had little or no impact on the parent because of the immediate effects that compliance had on terminating the child's aversive behavior. However, the sequences leading to severely disruptive behavior were more complex. To begin with, aversive behaviors were not simply discrete acts where single responses were followed by single consequences. Behaviors occurred in sequences or complex interchanges. Extending the case slightly, one could identify antecedent events that may prompted (serve as a cue for) coercive behavior and again look at the reinforcement contingencies that maintained the sequence.

A critical feature of coercion theory pertains to the course of coercive interchanges between parent and child. To begin with, coercive behavior on the part of one person tends to be followed by coercive behavior on the part of the other person. Thus, sarcasm, shouting, adamant statements, or threats on the part of the child or parent are likely to be reciprocated by the person to whom they were directed. As an aversive interchange continues, there is also an increase in the intensity of the aversive behavior. Yelling may increase in pitch or give way to threats, throwing objects, and physical aggression against the child or parent.

As the aversive behaviors intensify, one person eventually terminates the exchange in some way. The person

who terminates the exchange has then inadvertently but directly reinforced high-intensity coercive behavior. In the future, the likelihood of high-intensity coercive behavior is increased; as noted, compliance on the part of the person who submitted initially is likely to increase in the future, as well.

In the usual interchange among aggressive children, it is typically the child who elicits submission on the part of the mother. Aggressive children tend to escalate the intensity of these coercive behaviors relatively quickly and are likely to succeed in obtaining a particular end or in terminating the aversive interaction. The escalation of coercive exchanges and the reinforcement for high-intensity behavior explain how the child's behavior develops. In effect, aggressive children participate in a long and intensive "training" program in the home in which their behavior is carefully shaped. It is the task of parent management training (PMT) to interrupt coercive interchanges and to redirect sources of influence on the child to support prosocial behavior (condensed from Kazdin, 1985, pp. 165-166).

In summary, the principle mechanism in Patterson's coercion theory is negative reinforcement. However, Robinson (1985) reviewed some research evidence and speculated about the results of the studies. For example, Patterson's results were reported to be statistically

significant, but it was still questionable whether the research hypotheses were sufficiently supported (p. 602). Robinson suggested that weak support for coercion theory raised the possibility, that additional variables, causally related to the developmental level and maintenance of a conduct disorder, may have been omitted. He suggested that one such variable might be cognition (e.g., attributions of causality).

Kazdin, Esveldt-Dawson, French, and Unis (1987) suggested other treatment options in the case of certain condition they noted that, unfortunately, PMT was not a viable option for many clinical cases when there was severe family dysfunction, parental psychopathology, and socioeconomic disadvantage, or when there was no available parent who could participate. In these cases, one of the possible and promising approaches was cognitive-behavioral treatment (CBT) which trained the child to use problem-solving skills in situations where interpersonal conflict and antisocial behavior emerged. The main focus was given to deficits in interpersonal cognitive problem-solving skills (e.g., generating solutions to problems), in levels of cognitive development (e.g., moral reasoning), and in maladaptive cognitive strategies (e.g., impulsivity, attributional set) among aggressive youths.

Social Skills/Social Problem-Solving Skills Training

D'Zurilla and Nezu (1982) viewed social problem solving (SPS) as a special form of social learning. SPS referred to the process whereby an individual identified or discovered effective means of coping with problematic situations encountered in day-to-day living. More specifically, it was a process that (a) made available a variety of potentially effective response alternatives for dealing with a problematic situation, and (b) increased the probability of selecting the most effective response from among these various alternatives.

In a subsequent study, D'Zurilla and Nezu (1987) emphasized the role of discovery and creativity in problem solving. "The process of discovery, via brainstorming techniques, is an important means by which individuals are able to cope effectively with novel problems in living. Furthermore, creativity can also enhance a person's effectiveness in coping with familiar problems" (p. 465).

They further noted that it is very important to make distinctions among problem solving, solution implementation, coping, social skills, and social competence.

According to D'Zurilla and Nezu (1987), an effective solution referred to a coping response or response pattern that altered a problematic situation or one's personal reactions to it, such that it was no longer perceived as a problem, while maximizing other benefits and minimizing

associated costs. In this view, the effectiveness of a solution (i.e., social competence) depended on the particular goals and evaluative standards of the problem solvers or significant others who were responsible for judging the problem-solver's performance.

Solution implementation referred to the performance of the solution response(s) itself(themselves) in the actual problematic situation. It was the process of discovery (not pattern matching). The reported solution and its implementation were the product or outcome of this discovery process. This distinction was important for research because it avoided a confounding between measures of the problem-solving process (i.e., problem-solving skills or abilities) and measures of outcome (i.e., performance or effectiveness). It was important for counseling practice, given that different treatment strategies would be used for a person who may be good at discovering an effective solution but poor in carrying it out.

Hansen, Watson-Perczel, and Christopher (1989) discussed the issues in social-skills training within the context of the developmental stage of adolescence. They included: (a) assessment and programming of generalization and maintenance, (b) methods of social validation, (c) compliance and resistance, (d) confidentiality, (e) practicality; and (f) termination.

Hansen et al. review of 29 articles written between

1976 and 1989 and future directions and suggestions for both research and clinical implementation (1989). In general, these investigations provided support for the effectiveness of the social-interaction interventions with adolescents. Unfortunately, investigations often had not adequately addressed important issues, such as generalization and social validation.

McFall (1982) reviewed two models of the concept of social skills: a trait model and a molecular-behavioral model. He suggested an alternative concept of social skills, the social competence model.

According to McFall competence and skills were not interchangeable concepts. He said that competence should be used as a general evaluative term referring to the quality or adequacy of a person's overall performance in a particular task. To be evaluated as competent, a performance did not need to be exceptional; it only needed to be adequate (p.12).

He refers to skills or the specific abilities required to perform competently at a task. Such skills might be innate or acquired through training and practice. Skills were specific and should be identified in the most specific terms possible. The definition implied that a person who performed a task necessarily had all of the required skills to do so. Thus the term skills referred to specific abilities (pp. 12-13).

McFall emphasizes that <u>social</u> is an adjective, that referred to the fact that our interest in a person's behavior was from a social perspective; the term merely indicates our frame of reference. It was intended simply as a reminder that we were most interested in pursuing the social implications of behavior (p. 13).

Within McFall's (1982) model, the relationship between competence and skills was critical; social skills could be defined and measured only within the framework provided by the more general concept of social competence. This conception contained a number of important components. These were: (a) competence was an <u>evaluation</u> of the performance by someone; (b) the fact that <u>someone</u> was making the evaluation meant that it was subject to error, bias, and judgmental influences; (c) since the evaluation always must be made with reference to some set of implicit or explicit <u>criteria</u>, the evaluation could not be understood or validated without knowing the criteria being employed; (d) evaluations of competence were always <u>task specific</u>; (e) characteristics of the <u>performer</u> might influence the competence judgments; differences in age, sex, experience, etc., could affect performance standards and expectations; and (f) If a performance is to be judged as competent, it carried the implicit notion that one expected a certain degree of <u>performance consistency within a task</u> (pp 13-14).

<u>The Task as a Unit</u>. McFall (1982) further stated that tasks
are hierarchically organized. One task unit, at a global
level, might be broken into sub-tasks. Each of these could
be subdivided further into component tasks. Structural
models of tasks and sub-tasks, along with specifications of
the relationships among the task units, have been proposed,
tested, and revised according to accepted scientific methods
and principles. In the end, the best structural model of a
task hierarchy was the one that worked best for describing,
predicting, and explaining behavior.

   <u>Task analysis</u>. According to McFall, the competence of
a person's behavior could be evaluated only with reference
to a particular task. For assessment of competence, one
should have considered the purpose, constraints, setting,
the rules governing task performance, the criteria for
distinguishing between successful and unsuccessful
performance, and how the task related to other aspects of
the person's life-system (p.16).

<u>Assessment of social competence</u>. McFall outlined three
major assessment types: (a) group-focused assessment which
was concerned with the general relationship between social
competence and other psychological variables; (b) person-
focused assessment which was concerned with evaluating the
specific social competencies of particular individuals; and

(c) predictability which focused on the application of the results to predict, such as future adjustment or task performance of individuals or groups.

The basic requirements for each case were similar: (a) identify the most relevant and critical life tasks for the person or group; (b) conduct a task analysis for each task; (c) obtain a representative sample of each individual's performance on each task; (d) establish task-specific criteria for evaluating competent performance; (e) evaluate the performance samples; and (f) summarize, integrate, and interpret the evaluation results (pp 18-19).

The evaluation of a person's task performance should be criterion-referenced, according to McFall. That is, the basic question was whether the person's performance was up to standard; we should be less concerned with determining how well the person performed relative to others. On some tasks, few persons would do well, and on other tasks, almost everyone should do well. In fact, most of the social tasks that have been studied in research thus far probably could be performed competently by the majority of people (p. 20).

In sum, McFall's main concern was whether the evaluation of the performance was meaningful in "real life."

The results from the evaluation of each person's task performances must be summarized and integrated in a way that converts them into manageable and useful information. Assuming that the assessment provided an accurate inventory

of the subject's competence at handling personally relevant
and critical tasks, the summary value would be interpreted
only as a crude estimate of the person's risk for
encountering difficulties in "real life" (p. 21).

McFall (1982) criticized that a single summary score
was a poor way to express the import of an inventory (p.
21). He suggested that the most informative and accurate
way to summarize inventory results was to use a profile
format with each item (task), or cluster of related items,
depicted separately. Such a format retained useful
performance information obscured by total scores and had
implications for designing intervention programs. The
performance profile could be used to guide subsequent
attempts to identify specific skills deficits that would
explain observed incompetencies (p. 22).

A system perspective. McFall (1982) brought our
attention from a trait model to a molar model. He said that
after identifying the social competence profile of an
individual or group, we needed a direction to go further.
From the integrative perspective of a systems approach,
social incompetence could be seen as the product of a
mismatch between a person's abilities and the task demands
imposed on the person. This discrepancy could be described,
alternatively, as being due either to a deficit in skills,
or to excessive performance demands. Psychological problems

grew out of this imbalance between abilities and demands in the person-environment system; therefore, the reduction of psychological problems, which involved establishing a balance in the system, could be achieved either through increasing the person's abilities or through decreasing the environmental task demands imposed on the person (p. 22).

He insisted that most of the current intervention research has focused on redressing system imbalances through skill-training programs aimed at increasing abilities. Investigators taking such an approach, therefore, had characterized psychological problems as being due to social skills deficits. In general, a system perspective helped us see that assessment and intervention efforts should not be directed exclusively toward persons, but should be broad enough to encompass the person-environment system as a whole. Thus, when a person's task performance was judged to be incompetent, one of the things to consider is an analysis of the specific abilities that would be required in order for the person to perform that task competently (p. 23).

In sum, McFall defined social skills as the specific abilities that enabled a person to perform competently at particular social tasks. Performance could be analyzed in terms of three relatively distinct systems: (a) physiological, (b) cognitive, and (c) overt motor behavior.

Interpersonal Relationship Perspective

Guzzeta (1976) found that training parents to be more empathic with their adolescents reduce the generation gap between parents and teenagers. Broome (1991) also recognized that empathy was important to both general communication competence and effective intercultural communication. Empathy is associated with many important aspect of communication behavior, e.g., formulating communicative intentions and goals, devising strategies to accomplish communicative purpose, and constructing messages consistent with communicative strategies. After reviewing the various concepts of empathy, Broome suggested the concept of relational empathy, which is more suitable to a discussion on intercultural communication. It emphasized a productive rather than reproductive approach to understanding. The relational view went beyond the individual to the creation of shared meaning during the interpersonal encounter. Understanding was not viewed as a "product," but as a "tensional event" occurring between the communicators. Building the shared meaning between communicators was emphasized. By establishing shared meaning, the communicators could create a "third culture." This third culture could only develop through interaction in which the participants were willing to open themselves to new meanings, to engage in genuine dialogue, and to constantly respond to the new demands emanating from the situation.

The emergence of this third culture was the essence of relational empathy. Broome emphasized that in order to develop this third culture, adolescents-parents both must (a) be willing to put forth the _effort_ necessary to work through difference, (b) demonstrate _commitment_ to the encounter necessary to overcome likely "breaking points," (c) be able to explore and negotiate alternative meanings for ideas and events, and (d) be willing to participate in the mutually creative exploration that occurs in the development of their "third culture." Instead of trying to understand the other as a separate objective entity, the focus was on co-creating with the other a shared reality. In situations where significant differences existed and must be confronted, relational empathy ws essential.

Communication competence is one of major concerns in everyday interpersonal relationships. Canary and Spitzberg (1987) pointed out two fundamental properties in competent communication--effectiveness and appropriateness. Effective communication accomplished the goals, objectives, or intended functions of the interactant, whereas appropriate communication avoided the violation of the situational or relational rules governing the communicative context. For example, a person could occasionally accomplish individual goals through deception and coercion. Canary and Spitzberg stressed while these might be very effective tactics in some situations, it was difficult to conceive of many instances

in which they would be judged appropriate by others.
Similarly, in any given encounter, there might have been
numerous responses that violated no rules, yet failed to
achieve the actor's goals (pp. 93-94).

According to Canary and Spitzberg, research in conflict
has uncovered three primary types of message strategies:
those consisting of <u>integrative</u> tactics, which were coopera-
tive and offered disclosure; <u>distributive</u> tactics, which
were competitive and antagonistic; and <u>avoidance</u> tactics,
which sought to diffuse discussion of the conflict.
Assessments of competence were related to these three
tactics: integrative tactics were perceived as the most
competent, distributive tactics were the least competent,
and avoidance tactics evinced modest negative competence.
But it was uncertain whether the findings regarding general
competence and conflict strategies held for appropriateness
and effectiveness in particular. They found that
interpersonal attraction, like communicator gender, and
conflict strategies could influence the perceptions of the
communicator's appropriateness and effectiveness.

According to Cahn (1990), communication conflict
behavior could be labeled as constructive and destructive.
His stance was that the more constructive communication
behaviors were candidates for producing perceived
understanding that acted as an intervening variable between
communication behaviors generally and relationship growth.

He have developed an interpersonal confrontation ritual that could produce perceived understanding: (a) <u>an announcement of problem step</u>, where one partner initiated the ritual by announcing the existence of a problem that might be worked out in communication; (b) <u>an acknowledgment step</u>, where the partner indicated willingness to discuss this problem thereby acknowledging its legitimacy. Although acknowledgment might be associated with perceived understanding, avoiding and ignoring the problem would probably produce feelings of misunderstanding; (c) <u>a negotiation step</u>, where the problem was stated and explored from several points of view. As the initiator of the ritual, a partner engaged in self-disclosure with an attitude of acceptance to both feedback and suggestions for change, whereas the other indicated cooperation by listening with nonjudgmental empathy; and (d) <u>a reaffirmation step</u>, where the uniqueness of each partner was affirmed and the solution was found to be consistent with some valued principle. Both parties clarified for each other and examined together the discrepant positions, personal needs, and individual interpretations, but also reaffirmed their intimate relationship to lessen the interpersonal threat posed by the differences (Cahn, 161-162).

Empirical Studies

Kazdin, Esveldt-Dawson, French, and Unis (1987) investigated the effectiveness of problem-solving skills training(PSST) and relationship therapy(RT) in the treatment of children hospitalized for antisocial behavior. The PSST condition led to significantly greater decreases in externalizing and aggressive behaviors and in overall behavioral problems at home and at school and to increases in prosocial behaviors and in overall adjustment than RT and contact-control conditions. These effects were evident immediately after treatment and at a one-year follow-up. The findings for RT showed no difference from the contact-control conditions. Kadzin et al. presented several possible explanations for the absence of difference between RT and contact-control conditions: (a) in treatment of antisocial youths, relationship factors may have been necessary but were insufficient to effect change; (b) the hospital setting may have, in some way, interfered with the efficacy of RT; (c) outcome measures may have been insensitive to the sorts of effects (e.g., changes in self-concept) that RT produces; and (d) the critical conditions of treatment (e.g., empathy, unconditional positive regard) may not have been sufficiently high to produce change.

They suggested that RT needed to be explored further, with improvements in design not evident in their study, before the impact could be evaluated definitively.

McNeil, Eyberg, Eisenstadt, Newcomb, and Funderburk
(1991) evaluated generalization of treatment effects from
the clinical setting to the school setting in ten 2- to 7-
year old children who were referred for severe conduct
problem behaviors occurring both at home and in the
classroom. They indicated that most behavioral PMT failed
to generalize to the school setting. Some other studies
targeting specific problematic behaviors in the home
actually resulted in an increase in problematic behaviors in
the school setting. In their study, parents were taught and
practiced specific skills of communication and behavior
management with their child using a bug-in-the-ear
microphone device. Parents were instructed in the use of
clear, positively stated, direct commands and consistent
consequences for behavior. Parents learned to establish and
enforce "house rules" and manage their child's behavior both
at home and in public places. The major goal of treatment
was to decrease problematic behaviors while increasing low-
rate prosocial behaviors. The results of this study
indicated that the successful treatment of home behavior
problems was associated with improvements in certain
behaviors in the school setting. Contrary to previous
investigations, this study provided evidence of clinically
significant improvement in classroom noncompliance and
disruptive behavior. However, unexpectedly, generalization
in the area of peer relationships was not found.

The Father's Role in Counseling

Lamb (1986) described fathers as the "forgotten contributors to child development" in 1975; since then, fathers have been "discovered" by social scientists and social services professionals. Unfortunately, their interest reflected not just a casual curiosity but rather an awareness that the father-child relationships of many of their clients have been characterized as problematic.

In the discussion of father involvement and responsibility in family therapy, Lamb (1986) quoted several important findings. The father's masculinity, nurturance, limit-setting, power, and participation in family decision-making were all found to be important factors in his son's sex-role development. However, fathers were mostly characterized as uninvolved, resistant, and absent from treatment. A growing acceptance of the need for the fathers' involvement and greater sensitivity to the problems of engaging fathers in the helping process has occurred. Family therapists have stressed the necessity of observing interactions directly among all family members.

Webster-Stratton (1985) emphasized that the father's involvement was an important factor in the maintenance of treatment effects. However, very little systematic research has been done comparing father-involved families with father-absent families in terms of long-term parent training effectiveness. In fact, the majority of parent training

studies have focused on mothers; fathers have been largely
ignored. Webster-Stratton indicated that the fathers and
mothers' boyfriends who were involved in parent-training
program for conduct-disordered children made significant
attitudinal improvements. Immediately after treatment, the
fathers perceived their children as having significantly
fewer and less intense behavioral problems. Moreover, these
positive attitudinal changes toward their children were
still intact one year later. In comparing the fathers' and
mothers' attitudes in two post-treatment assessments, this
study indicated that there were virtually no differences
between the fathers' and mothers' attitudes. In other words,
both fathers and mothers reported positive improvements in
their children's behaviors.

Webster-Stratton also found that, when mother and child
behavior changes were assessed in terms of treatment
effects, there were significant differences in treatment
outcome between father-involved and father-absent families.
At the one-year follow-up, significantly more of the mother-
child dyads who maintained behavioral improvements came from
father-involved families.

Phares and Compas (1992) reviewed recent studies on
parental effects on child and adolescent psychopathology.
They discussed conceptual and methodological issues. They
indicated two impetuses for studying fathers' contributions
to maladjustment and psychopathology in their children.

First, the increased knowledge about the role of fathers in
normal child development that is now available provided a
basis for the investigation of the role of parental factors
in deviant or dysfunctional developmental paths.
Secondly, the possibility of a sexist bias existed because
most of the studies tended to look for the mothers'
contributions to child and adolescent maladjustment, while
virtually ignoring similar contributions by fathers.

Of the 577 articles identified, 277 studies (48%)
involved mothers only, 151 studies (26%) involved both
fathers and mothers. These studies analyzed them separately
or, more frequently, involved "parents" and did not specify
parents' gender. Only eight studies (1 %) involved fathers
only.

In summary, Phares and Compas found the following
results from the research involving fathers of diagnosed or
clinically referred children.

Attention-Deficit Hyperactivity Disorder (ADHD)

Fathers of children with ADHD were found to differ from
fathers of normal control children on a variety of
characteristics, such as length of attention span, types of
behavioral interactions, perceptions of parenting behavior
and parental self-esteem, and expectations for future
complaints regarding child behavior.

In contrast, few differences were found in emotional functioning and psychopathological symptoms between fathers of ADHD children and fathers of normal control children. Although fathers of ADHD children reported significantly more consumption of drinks per week than did fathers of nonclinical children, fathers of ADHD children did not differ in the rates of alcoholism or antisocial personality disorder or in the level of depressive symptoms displayed when compared with fathers of normal control children. However, mothers of ADHD children did report significantly more depressive symptoms than mothers of normal control children.

Because the rate of morbidity between ADHD and conduct disorder has been found to be high, with estimates of overlap ranging from 41% to 75%, it has been focused on in comparisons of children diagnosed with ADHD alone.

Conduct Disorder

In only one study were fathers of children with conduct disorder (CD) investigated in comparison with fathers of normal control children. In a sample of primarily boys (89% of the CD sample), Reeves, Werry, Elkind, and Zametkin (1987) found that fathers of children in the CD group (89% of children also had an ADHD diagnosis) were more likely to be alcoholic or to have antisocial personality disorder, or both, than fathers of normal control children.

The majority of studies that included fathers of CD children compared these fathers with fathers of the other clinically referred or diagnosed children. Reeves et al. (1987) found that fathers of children with dual diagnoses of CD and ADHD were more likely to be alcoholic or to have antisocial personality disorder, or both, than fathers of ADHD children and anxious children. Fathers of CD/ADHD children were also more likely to have a history of aggression, arrest, and imprisonment than fathers of other clinically referred children. Fathers of children with CD alone showed higher rates of antisocial personality disorder and substance abuse, and mothers showed higher rates of antisocial personality disorder and depression than fathers and mothers of other clinically referred children (Lahey et al., 1988)

Overall, a strong link was found between children's (primarily boys') CD and paternal psychiatric disorders, and to a lesser extent, maternal psychiatric disorders, which included antisocial personality disorder, alcoholism, and substance abuse.

In summary, children's conduct disorders were found to be strongly linked to fathers' antisocial and aggressive behavior. This link appeared to be stronger between fathers and sons than between fathers and daughters, although this has not been directly compared in a single study.

Delinquency

A variety of paternal and maternal factors were found to be associated with adolescent delinquency, including lack of paternal and maternal supervision and discipline, as well as a history of parental criminality; inconsistent family communication patterns; high amounts of paternal and maternal defensive communication in a competitive context; conflictual, unaffectionate father-son relations; conflictual, unsupportive mother-son relations; poor relations with parents regarding paternal and maternal affection and autonomy; high levels of paternal social desirability and high levels of maternal social desirability and neuroticism; and high levels of paternal deviance, parental aggressiveness, parental conflict, and low levels of maternal self-confidence, maternal affection, and supervision.

In comparing a group of delinquents with a nondelinquent control group, families with delinquent children showed lower rates of facilitative information exchange, fathers of delinquents were more dominant over their wives, and delinquent adolescents were more dominant over their mothers.

Alcohol and Substance Abuse

A significant relationship was found between fathers' and mothers' level of scapegoating of their drug-abusing

adolescents or heroin-abusing adolescents. Adolescents' perceptions of paternal, but not maternal, ineffectiveness and inability to communicate was a major problem.

A Working Model of Parent-Adolescent
Relationship Enhancement

This model was based on the parent-adolescent relationship which was the vehicle for change in both parent and child through democratic interaction. As indicated by Ginsberg (1989), the essential premise of the model was creating a safe environment in which one's true self could emerge and real change could occur. By creating an environment of non-judgment and acceptance, parent and child were most able to understand themselves. The attempt to create such an environment in the Korean family was revolutionary, changing the authoritarian to the democratic egalitarian. The traditional concept of the father in Korea is the same as king and teacher(instructor), in terms of authority.

The basic communication skill training used in this model is a process-oriented approach. It was originally based on the work and theories of Egan (1990) and other humanistically and behaviorally oriented researchers. The fundamental premise was that:

all of an individual's behavior and experience arises
from an intrinsic drive or motivation for self-
realization, maturity, independence, and self-
direction.... all behavior and self-expression is
motivated by feeling. Therefore, an atmosphere in
which feelings are acknowledged without judgment and
with acceptance provides the best opportunity for self-
knowing....Through this process constructive self-
development, learning, and mastery occur." (Ginsberg,
1989, p.446)

The goal in this approach was that the parent and
adolescent would learn to trust each other and themselves
more. Their growing trust would lead to healing, changing,
and self-actualization. The methods of skill training were
borrowed from the behavioristic approach; that is, they were
highly structured, modeled (through role-playing), and used
reinforcement.

The social problem-solving approach in this model was
based on an outcome/goal-oriented one. Using the social
learning perspective, parent-adolescent conflict was viewed
as the result of skill deficits and inappropriate
attitudinal responses leading to reciprocally punishing
transactions (Robin, 1981, Robin & Foster, 1989).

This model was also based on the psycho-social-
cultural-developmental approach. Adolescents (teenagers)
are in the developmental stage of identity formation,

according to the Eriksonian point of view. They increasingly assert their independence from their parents and are more affiliated with friends. The Korean fathers in the United States are in the mid-life transition period. And their traditional value systems are no longer useful in teaching their teenagers and maintaining kinship ties in the family. For example, the family security system, which has strong survival value in Korea has shifted to the social security system of the United States. The older generation's value of interdependence is changed suddenly. The socioeconomic status they have achieved in Korea is not preserved in the United States. In this transition, their physical strengths become weaker. They are challenged from inside their family, from themselves, and from the community to which they happen to belong. It is highly probable that parent-adolescent conflicts can arise from many sources.

The model used many approaches to help parents and adolescents mutually understand and solve problems effectively in their stressful life situation.

Thus, this model adopted an educational approach that assumed family dysfunction or parent-adolescent conflict was due to "inadequate learning and habit formation" (Ginsberg, 1989), and misunderstanding of the other person's situation or perspective.

The first goal of the model was to bring the Korean father and son together to learn effective and efficient

ways of relating to each other. In so doing, it was hoped that their interactions would change from rigid and habitual patterns of relationship to more flexible ones. The second goal was for the father and son to apply their new skills to alter or reduce the inter-generational gap. In so doing, they would assume mutual responsibility for maintaining the family relationship and increase family cohesiveness and cooperation.

To accomplish these goals, the model employed two major components: (a) training basic communication skills, and (b) training social problem-solving skills.

The counselor assessed the level of cognitive-behavioral functioning through use of the interview process during the baseline assessment phase (about 10 minutes, six sessions per week). Behavioral assessment was done for 10 minutes at the beginning of every session to evaluate the progress of interventions. The implementation of intervention was adjusted according to their level of functioning, e.g., sensory-motor level, concrete level, formal level, informal level. The counselor will: (a) explained the rationale for using the skills to begin the process of attitude change (instruction), (b) demonstrated the skills (modeling), (c) coached the participants as they practiced the skills (rehearsals/role play), and (d) provided feedback.

Guerny (1977) describes two specific types of basic communication skills--expressive mode and mode-switching skills. The expressive mode of communication skill is designed to enabled the individual to express emotions, thoughts, and desires clearly and honestly without generating unnecessary hostility and defensiveness in the recipient of the communication.

Broome's (1991) "relational empathy" was translated into concrete behaviors. Basic communication skills consisted of: (a) reflective listening; (b) reporting one's own perceptions, feelings, and thoughts without hurting the other; (c) giving and receiving feedback; and (d) confronting or asserting in interpersonal situations.

The key element of mode-switching skills was to know when, and how, to move from one of the basic modes (expressive mode) to the other in order to enhance mutual understanding, problem solving, and conflict resolution.

Defining ill-defined interpersonal problems in terms of manageable forms, generating possible alternative solutions (brainstorming), trying the one of the alternatives in the experimental settings, and seeing what happens (feedback) were discussed during the intervention sessions.

The principles of reinforcement were also discussed, including rewards and punishment, time-out, token economy (point system), and cost of response.

One problem that contributes to youths' delinquency is

their inappropriate behavior in conflict situations with authority figures and/or peers. Conflict situations are interpersonal situations in which the youth and authority figure possess opposing desires. Many adolescents and parents make inappropriate and ineffective responses to conflict situations (such as criticizing, defending, yelling, fighting, withdrawing prematurely, displaying tantrums or destructive behavior) that they bring into broken relationships and/or their contact with unfortunate agencies. Negotiation or skill in compromise needs to be learned in this type of family situation. A specific situation may require all of the previously mentioned communication and problem-solving skills and some already learned skills to resolve the conflict. How to transform the problem behaviors into negotiable behaviors is an important issue. A typical phenomenon in conflictual situations is that the participants usually have a strong tendency to mix the issue with emotions or prejudice (cynicism, criticism, humiliation, etc.). How to distinguish the issue from the emotions is the most controversial issue in the intimate relationship.

Basic procedures were taught by the researcher during the intervention sessions: (a) identification of an issue (entering into reality), (b) defining the issue, (c) generating the possible solutions/options, and (d) exiting (complying or negotiating). Compliant behavior refers to

the agreement by one person to the original position of the other. Negotiation refers to an agreement to a suggested option that is not merely the original position of either person. Such agreement can take the form of a compromise, a deal, or a new alternative.

To stimulate mutual understanding of Eastern/Korean and Western/American cultural values, the researcher made a contrast chart from a personal survey and the experience of the researcher in both societies, 32 years in Korea and 16 years in the United States, (see Table 1). It gives a number of clues for the cultural conflicts that can occur in the Korean-American family. In recent years, Korean society which has been strongly influenced by the United States since World War II, has become westernized because of industrialization.

Finally, assessment of skill acquisition was tested through the Interaction Behavior Code (Prinz & Kent, 1980) by two independent raters.

According to White, Rusch, Kazdin, and Hartman (1989), the discovery of generalizable, effective treatments included two steps: The first involved assessing the treatment's effects through the repeated observation and recording of the behavior of a single individual's responses to changes in experimental baseline and treatment conditions, as in applied behavioral analysis. The second step involved evaluating the generality of single-case findings

to a larger number of cases. This step required the identification and examinations of variables that moderate a treatments effect, such as subject, therapist, contextual, and methodological characteristics.

Table 1. Cultural Value System (Contrast)

Eastern/Korean	Western/American
Family Security System	Social Security System
Interdependence/attachment	Independent/separateness
Minimized privacy/openness "We-ness", "Our"/Our family "Uri Manura=Our wife" "Our children"	Maximized/privacy/closedness "I-ness," "My"/My family "My wife" "My kids"
Self-effacing	Proudness/self-esteem
Shame/Moral-oriented "My conscience said so." "It's immoral."	Guilty/Legal-oriented "It is O.K by law." "It's illegal."
Relationship is more important (Time is relative)	Time is urgent/Punctuality (Calculated relationship)
Seniority system (Responsibility/Authority)	Merit system (Cost-Benefit/Accountability)
Chronology/Chronomy Old-experience respected	Efficiency/Economy New-fresh experience respected
Quality production	Mass-quantity production
Family face is important	Individuality
Tradition (past)-oriented "There and Then" focused	Progression (future)-oriented "Here and Now" focused
Pro-thought	Pro-action
Absolute obedience (Authoritarian)	Logic, reasonable persuasion (Democratic)
Origin, "Same stock", (Conformity)	Originality, Creativity, (Utility)
Savings/Preservation	Spending/Consumption
Pain-tolerance oriented	Pleasure (fun) oriented
Appropriateness/fitness	Effectiveness/efficiency
Motive	Result

Research Questions

The general purpose of this study was to design preventive procedures and to evaluate the effectiveness of treatment with the antisocial problems among Korean adolescents. The main purpose of the treatment was to help the Korean fathers to be able to negotiate their way through transitions and tragedies and to cope with and even thrive on life's hardships. In order to maximize the treatment effect in interpersonal problem-solving, two intervention modes have been reviewed: one was the expressive mode, the other was mode-switching skills. The former mode enables the individual to express his emotions, thoughts, and desires clearly and honestly without generating unnecessary hostility and defensiveness in the recipient of the communication.

The second set of social skills or behaviors is called mode-switching skills. The key element of mode-switching is knowing when, and how, to move from one of the basic modes (expressive mode) to the other in order to enhance mutual understanding, problem solving, and conflict resolution.

Traditionally, intervention procedures have been divided between these two distinctive modes, such that one mode or the other has been emphasized. Communication skills training has exclusively emphasized the expressive mode; and social problem-solving skills training has focused on mode-switching skills only. The proponents of each have implied

that by emphasizing their procedure, the other would be followed naturally or automatically after or during the treatment. On the one hand, for example, Rogerians have believed that if the relationship improved through therapeutic experiences (counseling), the problem (e.g., conflict situation) would be solved naturally or automatically without further direct intervention.

One the other hand, cognitive-behaviorally oriented counselors have focused on teaching very specific problem-solving skills without emphasizing the interpersonal, expressive mode. They have usually assumed that the expressive mode will be followed naturally or automatically, as long as the learners have learned the specific skills properly.

The research questions in this study, as implied in the working model and through the literature review, were whether the two modes of skills could be combined to maximize the effect of the treatment in the situation-specific context, the Korean-American immigrant family. More specifically, the treatment was applied to help the Korean-American immigrant fathers to handle the conflictual situation with their sons more reasonably and appropriately. In order to maximize the effectiveness of treatment, the counselor needed to understand the various developmental and social issues surrounding the problem, and could utilize these resources in the counseling sessions toward mutual

understanding and benefit to the family and society.

The questions were:

1. Will the interpersonal communication skill training alone improve/or solve the conflictual problems/situations?

2. Will the social problem-solving skill training alone improve/or solve the conflictual problems/situations?

CHAPTER 2

METHOD

Design and Procedures

Participants

Selection

Four Korean American father-and-son pairs who were living in New York City were recruited by personal contact with the researcher. Three of the fathers were immigrants from Korea who had lived in the city for 17 years. The average age of the four fathers was 42. Three of the sons were American-born, and their average age was 14 years old. One father was a Korean immigrant who had lived in the city for 10 years. His son was born in Korea and came to the United States at age two. The son was 13 years old. All consented to participate in the experiment of interpersonal communication or social problem-solving skills training until it was finished.

Fathers' Occupations

Two of the fathers were business men, the third was the

minister of a Korean church, and the fourth was a graduate
student. They all graduated from college in Korea.

Family Structure

All of the fathers reported their marriages were
intact, with no reported marital discord. One family had,
in addition to the parents, two sons, one daughter, and a
grandmother living at home. The second family had a son
and a daughter. The third family had two sons and a
daughter. The last family had a son only.

Counselor

The researcher himself was a counselor for these four
pairs of clients. He has two master's degrees; one, which
he earned in Korea, is in educational psychology and the
other, which he earned at Michigan State University, is in
school and agency counseling. At the time of this research
he was in a Ph.D. counseling program. He was trained as a
group counselor by Dr. Hyung D. Lee and Dr. Chang J. Byun in
Korea for two years and served as a counselor at the
University of Korea for three years before he came to the
United States in 1979.

Procedure

Treatment Conditions and Independent Variables

The purpose of the intervention was to teach each

father and son to relate effectively and appropriately and to solve their interpersonal problems effectively. The independent variables used with this study were: (a) learning basic interpersonal communication skills, and (b) learning social problem-solving skills in the context of home-based intervention.

In accordance with the experimental design, there were two treatment modes: two of four pairs received basic communication skills training, and the other two pairs received training in social problem-solving skills.

The basic communication skills training included the following skill components: (a) attentive listening and relational empathy, (b) reporting one's own feelings, (c) self-disclosing, (d) paraphrasing, and (e) giving and receiving feedback.

The social problem-solving skills training consisted of the following skill components: (a) defining an issue or interpersonal problem in terms of a goal or an objective, (b) generating possible alternatives (brain storming), (c) selecting the best possible solution, (d) planning a strategy to meet the goal or objective, (e) implementing in reality (doing homework), and (f) evaluating the results and feedback.

Both training pairs received the same topic of contrasting cultural value systems during a treatment session.

Instrumentation

Interviews, video recordings, a questionnaire, and direct observation by the counselor were used to assess the effect of treatment.

Questionnaire

Robin's Issues Checklist was given to each father and son to select the hottest issue for the purpose of discussion during baseline observation, intervention, and follow-up phases. It consisted of 44 issues. The issues (topics) that father and son have talked about during the last four weeks were marked (Yes/No). They then marked how many times and how hot the discussion was (Calm/A little angry/Angry).

Video Recordings

All sessions were recorded by video camera for the purpose of analysis by two independent raters. The equipment used was a SONY CCD-TR101 video camera.

Direct Observation

Observational assessment of father-son interaction relied on approximately 10-minute videotape samples of father-son communication about a conflict. The interactions were coded using an observation coding system, the Interaction Behavior Code (IBC) (Prinz and Kent, 1978).

<u>Raters</u>

Two raters were selected and trained by an expert trainer who was majoring in communication at Michigan State University. The trainer had experience as a rater for nonverbal communication. The two raters also attended the same university (master's level). They were trained for two hours to code a sample videotape using the IBC coding system. Interrater agreement was estimated using the Spearman-Brown formula, which is presented in the following section on validity and reliability. After training, the two raters had an agreement range of .85 to .90. Foster and Robin (1989) reported that agreement figures ranged from .83 to .97 among four raters with as little as two hours of training in their study.

<center><u>Validity and Reliability</u></center>

According to Kazdin (1978), one of the main problems in most single-case experimental designs was interobserver agreement; i.e., the reliability of the two observers (raters). In the majority of cases, overt client behavior was assessed daily over the course of baseline and intervention conditions. Observers recorded whether behavior had occurred, based on their judgment and the definition of the response as originally specified (p. 636).

According to the manual of the IBC, it was designed to assess global impressions of parent-adolescent problem-

solving communication behavior. There were 25 negative and seven positive behaviors in the coding system. The negative items were: negative exaggeration, yelling, ridicule, making fun of, using big words, repeating one's opinion with insistence, threatening, name calling, interrupting with criticism, giving short unhelpful responses, asking accusatory questions, making demands, arguing over small points (quibbling), talking very little, talking very much, disregarding the other person's points, mind reading, quick negative judgment of other's suggestions, abrupt change of subject, anger, demanding, sarcasm, acquiescence, silence and ignoring other personal attack, and criticism. The positive behaviors noted in the IBC were: stating the other's opinion (paraphrasing), making suggestions (offering solutions), joking (good natured), praising, asking what the other person would like, compromise, and willingness to listen.

Finally, four overall impressions were rated on four- or five-point interval Likert-type scales: (a) outcome (degree of resolution of the problem), (b) putting each other down (degree of belittlement and criticism), (c) friendliness, and (d) effectiveness of problem solving. All items were explained right after each item.

In the IBC, the mean of the two raters' scores was used for analysis. The Spearman-Brown formula was employed to estimate the reliability of the two raters. The formula was

Reliability of n raters = n (Xr)/1 + (n - 1) (Xr)

where n referred to the number of raters, and Xr referred to
the average pairwise correlation, computed across all
possible pairs of raters.

Table 2 shows the estimate of the reliability of the
two raters across all segments of the coding system for this
study. Only the fathers' responses were reliable to
interpret the data. The rest of the sons responses had very
low reliability, because of rare responses comparing with
the fathers' response. Their scores had very limited
variability. The range of the sons' mean responses across
four pairs was 2.5. The range of the fathers' mean
responses across four pairs was 5.6. It is noteworthy that
positive responses of the father-and-son pairs were very
low. The average range of responses was 0 to 2 among seven
items of the coding system, which was not noticeable most of
the time.

Table 2.

The Estimated Reliability between Two Raters

	Father		Son	
Pair	Negative Behavior	Positive Behavior	Negative Behavior	Positive Behavior
A	.82	.70	.86	.91
B	.96	.70	.77	.84
C	.87	.65	.74	.73
D	.68	.81	.56	.68

Pair	#33	#34	#35	#36
A	.71	.82	.61	.71
B	.94	.80	.68	.80
C	.68	.57	.75	.63
D	.71	.52	.58	.56

Note: Item #33--Outcome, degree of resolution of
      the problems being discussed.

Item #34--Putting each other down, degree of
      belittlement and criticism.

Item #35--Friendliness, saying nice things
      to each other.

Item #36--Effectiveness of problem solving.

Hypotheses

In this study the effect of two different approaches of interpersonal communication skills training were assessed in an effort to develop a working model for Korean immigrant families in the United States. It was assumed that there was no difference between the two modes of skill training.

It was more reasonable to compare the results of treatment with the baseline performance of each pair. The sensitivity of measuring tools was critical to detect the different effects of each intervention. The research aimed to present ceiling or floor effects of measurement before starting the experiment.

The researcher hypothesized that, when comparing the effects of treatment with the baseline performance, all subject pairs would show statistically significant difference from the baseline.

1. More specifically, fathers' and sons' negative communication responses would remain the same (no change) during the baseline phase, but during the training (intervention) phase, those responses would be reduced significantly; and during the follow-up phase, the effect of intervention would continue (at the same level as the training phase).

2. In contrast, fathers' and sons' positive communication responses would improve during the training and follow-up phases.

3. Overall evaluation of each pair's communication and problem-solving patterns would also improve during the training and follow-up phases.

Design

This study employed a single case (N = 1), A-B-A design cross two groups (two pairs belong to each group). After baseline measures (pretest) were recorded for six issues for three days, training for either interpersonal communication skills or social problem-solving skills occurred in each pair's home for four weeks (40 minutes per session, followed by 10 minutes of issue discussion). Follow-up (posttest) sessions were the same as the baseline observation (see Table 3).

Dependent Variables.

The three dependent variables were: (a) positive communication responses, (b) negative communication responses, and (c) overall evaluations (see more details in the section on validity and reliability). Each of these three variables were assessed through the use of three different methods of analysis: (a) visual inspection, (b) C statistic, and (c) interrupted time series analysis (ITSA) (see more details in the section on data analysis).

Table 3.

Experimental Design

Pairs	Baseline	Treatment				Follow-up
A B	NT*	CS**	CS	CS	CS	NT
C D	NT*	PSK***	PSK	PSK	PSK	NT
	T TH S	T TH S	T TH S	T TH S	T TH S	T TH S

Note   T, Th, S = Weekly schedule

     *   NT =   No treatment (observation only)

     **   CS =   Communication skill training

     ***PSK =   Problem-solving skill training

A method of collecting the data for all three dependent variables was direct observation using videotapes. After reviewing each 10 minutes of videotape (total 23 segments per pair), two raters independently rated the interaction behaviors according to the manual of the Interaction Behavior Code (IBC).

The purpose of the study was to teach the father and son to interrelate and solve conflicts effectively and appropriately in vivo. As suggested by Hollon and Kendall (1981), in vivo assessment techniques were employed to measure the impact of the treatment and to provide feedback about the intervention procedure.

This procedure is different from traditional indirect observations that rely heavily on after-treatment session(s), such as self-report or a significant other's report. In vivo observations can be obtained by means of self-monitoring or reliance on external observers (and observational systems). In either situation, the subject pairs must at least be knowledgeable about the assessment procedure in order to complete the monitoring task. Thus, assessment is necessarily obtrusive. Hollon and Kendall indicated that, clearly, the obtrusiveness of monitoring plays a critical role. There are two important concerns in in vivo assessment: the accuracy of assessment and the reactivity effects it has on monitored target behavior. It is important to distinguish between inter-observer agreement

and inter-observer accuracy. Two observers may agree, yet both be incorrect. Reactivity is the tendency of a phenomenon to change as a consequence of obtrusive monitoring. In a sense, reactivity can be seen as a threat to the external validity of an observation; while the phenomenon may have been accurately observed, its occurrence is in part determined by a special circumstance, obtrusive monitoring that is unlikely to be present in most situations (see more details in Hollon and Kendall data).

Data Analysis

Generally speaking, there are two methods of data analysis; (a) a primarily descriptive method, including visual inspection, and (b) a secondary method, including statistical inference (i.e., C statistic, interrupted time-series analysis, and effect size). In this study, two methods were reviewed thoroughly and applied to assessing the effect of treatment.

Visual Inspection

According to Tawney and Gast (1984), visual analysis of graphic data, in contrast to the statistical analysis of data, represented the most frequently used data analysis strategy employed by applied behavioral analysts. Ottenbacher (1990) quoted the definition of visual inspection from Kazdin (1982): "Visual inspection refers to

reaching a judgment about the reliability or consistency of intervention effects by visually examining graphed data."

Parsonson and Baer (1978) emphasized graphics as a form of data analysis. "Eyeballing" graphs (Gottman & Glass, 1978) as a method of data analysis offered many flexible benefits to the experimenter (counselor). The basic two properties of data that needed to be analyzed critically when conducting a visual (and/or statistical) analysis were level and trend (Tawney & Gast, 1984, p.159). The term level referred to the magnitude of the data as indicated by the ordinate scale value. When inspecting data, there were two aspects of level that were important: level stability and level change. Level stability referred to the amount of variability, or range in data point values, in a data series. When the range of values was small (low variability), data were said to be stable. Generally, if 80%-90% of the data points of a condition fell within a 15% range of the mean level of all data point values of a condition, the researcher would consider the data stable (Tawney & Gast, 1984, p.161).

Tawney and Gast noted that a second aspect of level of interest to the researcher was the amount of change in level within the same condition or phase. The absolute level change within a condition was computed by (a) identifying the ordinate values of the first and last data points of a condition, (b) subtracting the smallest from the largest,

and (c) noting whether the change in level within the condition is in a therapeutic (improving) or contratherapeutic (decaying) direction, as indicated by the intervention objective. This information was important when determining whether it was appropriate to move to the next planned condition in the design sequence (p.163).

Tawney and Gast also advised the researcher to consider the level change between adjacent conditions. To compute the absolute change in level between two adjacent conditions, Tawney and Gast suggested that a researcher: (a) identify the ordinate values of the last data point of the first condition and the first data point value of the second condition, (b) subtract the smallest value from the largest, and (c) note whether the change in level is in an improving or decaying direction. This information would indicate the immediate strength or impact an intervention had on the target behavior. When a large change in level occurred immediately after the introduction of a new condition, the level change was considered abrupt, which was indicative of a "powerful" or effective intervention (p.162).

White, Rusch, Kazdin, and Hartman (1989) discussed slope or trend as it pertained to the tendency of a subject's performance to increase or decrease systematically over time. White et al, stated that determining the direction of a trend and trend stability were also important, much like evaluating level stability. Stability

referred to the absence of trend and relatively small variability in a given level of performance. Trends and extensive variability during any of the phases, particularly during the baseline phase, could interfere with evaluating the treatment (Kazdin, 1978). If the same trend were found in the baseline phase and intervention phase, it would be difficult to compare the intervention phase results with the baseline phase results. To make the visual inspection easier, two lines were introduced for each phase; one line from the split-middle (semiaverage) method and the other from the least square method (Parsonson & Baer, 1978).

Tawney and Gast (1984) evaluated trend stability by determining how many of the data points of a condition fell within a predetermined range along the trend line. Generally, if 80%-90% of the data points fell within 15% of the range of the mean, the trend was considered stable (pp.164-165). Treatment was evaluated ultimately by comparing performance across baseline and intervention phases (Kazdin, 1978).

In sum, the criteria used in visual inspection were: (a) level change between two adjacent phases, (b) slope (trend) changes within a phase (condition), and (c) stability within a phase. As a guideline, a regression line for each phase was drawn from the screen image of computer monitor using the ITSACORR program. The other two lines (one from the semiaveraged method and the other from GLS)

were omitted by the researcher, because those lines would give misleading information.

Statistical Analysis

Many data points are needed to properly use the time-series analysis, yet many worthy studies cannot be designed, for practical purposes, to include a sufficient number of data points. Traditionally, the number of data points recommended is at least 50. But in reality, most counseling relationships do not continue long enough to gather this many data points. Various kinds of statistical procedures for small data points (i.e., 6 or 8 data points per phase) have been developed. In a small sample of data points, the autocorrelation between two data points in a series becomes a serious problem. Most researchers have been concerned about the treatment effects in terms of change in slope (trend), change in level (conditions of treatment and phases), and combined total effect.

Effect size. White, Rusch, Kazdin, and Hartman (1989) and Center, Skiba, and Casey (1985-1986) suggested a procedure to evaluate effect size that has been employed in the meta-analysis approach. According to White et al. (1989), the presence of a trend posed serious problems for estimating the components of the subject's average performance. For example, if the trend in baseline simply

carried over into intervention, then it was unclear (a) what score to use to indicate performance during those two phases, (b) how to assess reliability within each phase, and (c) how to determine if, and to what degree, a treatment effect existed. White et al. recommended an effect size equation that corrected for the presence of trend. The equation is:

$$d = \frac{\text{Mean } X_e - \text{Mean } X_c}{SD'}$$

where the mean X_e is the predicted level of the target measure on the last day of the treatment phase estimated from the within phase regression of the dependent measure on the day of observation, and X_c is the predicted level of the target measure on the last day of control phase estimated from the within phase regression of the target measure on the day of observation. SD' is the square root of the pooled within-phase standard deviation, multiplied by the square root of the coefficient of alienation, assuming linearity and homogeneity of the trend across phases.

Center, Skiba, and Casey (1985) and Scruggs, Mastropieri, and Casto (1987) used the meta-analysis procedure with a piecewise regression approach for the single-subject design. They showed very strong evidence from the use of a small number of data points (five data points in the baseline) without sacrificing the statistical power, i. e., in terms of Type I error (an erroneous

inference of a significant difference between phases).
However, they warned that the question of sample size
clearly remains an issue. They recommended that the
responsible practitioners of this methodology should collect
enough data over time to ensure an adequate number of
observations for statistical procedures, just as
investigators using group designs need to ensure an adequate
sample size.

   C statistic. Tryon (1982) and Decarlo and Tryon (1993)
recommended the so-called C statistic that was originally
developed by Young (1941). C statistic, a simplified time-
series analysis for evaluating treatment interventions, was
introduced by Tryon (1982). He suggested that using
statistical judgments is better than visual judgments. It
is desirable to use time-series statistics to analyze
behavioral data, because more confidence can be placed in
data interpretations when statistical and visual analyses
agree than when they disagree (p. 423).

   Tryon's method is simple, and it can be used on small
data sets to evaluate the effects of treatment
interventions. A merit of this approach is that it can be
used to decide when responses have stabilized; i.e., when a
new phase of the experiment might begin. He introduced the
C statistic to test whether or not the time series contains
any trends, i.e., any systematic departures from random

variation.

An initial use of the $\underline{C}$ statistic is to evaluate the baseline data. Two outcomes are possible. Evidence of a trend will either be found or not. It is preferable that the baseline data not contain any statistically significant trends, because this allows a more powerful application of the $\underline{C}$ statistic by appending the first treatment series to the first baseline series and testing the aggregate series with the $\underline{C}$ statistic. A significant result is evidence that the treatment series has a different trend from the baseline series. He suggested the use of several methods when the initial baseline is found to contain a trend (see more details, Tryon, 1982; DeCarlo & Tryon, 1993).

To calculate the $\underline{C}$ statistic, Tyron (1982) said that two measures were required. The first measure was the variance of the time series, which showed that the variance increased in direct proportion to changes or trends in the mean value of the series. The second was the mean square successive difference (MSSD) statistic. The consecutive differences among data points were calculated, squared, and then averaged. This statistic is independent of changes in the mean value of the time series; i.e., it is independent of the stationarity of the series. Finally, the standard error of the $\underline{C}$ statistic is calculated and the $\underline{C}$ statistic is transformed to the $\underline{Z}$ statistic which is normally distributed for time series containing 25 or more values

(see Appendix J). It is remarkable that the $\underline{C}$ statistic is useful for time series containing just eight values. Tryon presented the formula and the 5% and 1% critical values for samples of sizes eight to 25 (see more details in Tryon, 1982).

There are, of course, limitations in using this kind of simple statistical method, as indicated by Crosbie (1989). According to Crosbie, the $\underline{C}$ statistic assessed serial dependency, not slope. The statistic was not designed to measure slope and therefore should not be used for this purpose. Stability of response referred not only to the absence of slope (often associated with positive autocorrelation), but also to the absence of extreme variability characteristic of negative autocorrelation.

Tryon's use of $\underline{C}$ accepted as stable any data without a statistically significant positive lag-1 autocorrelation. Thus, even extremely variable data with a statistically significant negative lag-1 autocorrelation would be considered stable. For most behavior analysts, this situation would be intolerable. Also the $\underline{C}$ statistic, to assess treatment effects, cannot control the rate of Type I error when the data have a slope or nonzero lag-1 autocorrelation (Crosbie, 1983, p.323).

Crosbie summarized Tryon's procedures for data analysis as follows: (a) perform the $\underline{C}$ test for the baseline phase; (b) if it was nonsignificant, append the intervention phase

series to the baseline series; or (c) if it was significant, subtract from each intervention score the corresponding baseline score (or corresponding point on the baseline trend line), then perform the $\underline{C}$ test on the modified intervention series. If the final $\underline{C}$ was significant, it was assumed that the intervention scores were significantly different from the baseline scores (Crosbie, 1989).

Even though there was strong objection from Crosbie (1989, 1993), DeCarlo and Tryon (1993) confirmed the the $\underline{C}$ statistic procedure is very closely related to the $\underline{d}$-statistic of the widely used Durbin-Watson test. They also examined the so-called modified autocorrelation estimators that were thoroughly tested by Huitema and McKean (1993, 1994). According to DeCarlo and Tryon (1993), there are two basic approaches to estimating and testing autocorrelation. One approach is based on the cross-product of successive observations: r1 and r1+ are examples. The second approach is based on the squared differences between successive observations; the $\underline{C}$ statistic is an example. An understanding of this procedure is important for future studies of small sample autocorrelation estimators.

Interrupted time-series analysis (ITSACORR). Crosbie (1993) developed a new computer program for an interrupted time-series analysis procedure (ITSACORR) to assess change

with typical brief single-subject data. He performed data analysis with real data, as reported in the <u>Journal of Applied Behavior Analysis</u>. In the difficult situation of visual inference, ITSACORR was able to discriminate between a statistically significant change and no change.

While searching for several statistical analysis procedures, this researcher found that educational and psychological statisticians have not concerned themselves very much with the practical application of the time-series method. For example, mathematical statisticians (i.e., Young, 1941) have already investigated this kind of problem five decades ago, but behavioral or social scientists have only started to have concerns about these issues in the past 15 years. This researcher also found that strong disagreement exists about which method is the most practical. For example, Huitema (personal communication, 1995) strongly recommended not using the ITSACORR program (Crosbie, 1993) for statistical analysis. Crosbie (1989, 1993) insisted that the C test (Tryon, 1982) is <u>invalid</u> with autocorrelation data. A main issue revolving around small sample interrupted time-series is how to control the autocorrelation by statistical procedures.

Huitema and McKean (1991) have investigated some problems concerning sample size recommendations contained in current applied time-series textbooks and suggested useful procedures. They examined five well-known estimators of

first-order autocorrelations and showed that the
conventional estimators performed poorly for small sample
sizes (less than 50 observations). They proposed a modified
estimator. In the case of very small sample size (4, 5, 6,
7, 8, 9, 10), McKean and Huitema (1993) evaluated a kind of
nonparametric procedure, that is, the Spearman
autocorrelation estimator. They found that the results for
the small-sample properties of Spearman autocorrelation
estimator were very similar to the aforementioned parametric
estimator. The differences in the performance of the two
estimators was small; the Spearman was slightly more biased,
had slightly higher error variance, and consequently had
higher mean-square error. They warned that neither the
Spearman nor the conventional parametric estimator (and
tests) should be used with the small samples sometimes
recommended in the behavioral and social science literature.
They believed that a satisfactory small-sample testing
approach could be found, but no known point estimator of p1
had been demonstrated to be satisfactory in the small $\underline{n}$
case. At the time of their writing they were evaluating the
performance of several reduced-bias estimators for use in
this situation (McKean & Huitema, 1993).

Huitema and McKean (1994a) suggested two alternatives
for reduced-bias autocorrelation estimators to reduce the
bias of r_1 (the conventional estimator) ; r_{F1} and r_{F2}.
Huitema and McKean (1994b) developed a procedure to test the

hypothesis of no lag-1 autocorrelation (null hypothesis)
using the aforementioned two estimators. They also compared
the power of the test with the conventional Bartlett test.
The results showed that while z_{F1} is far better than
Barlett's test, t_{F2} was the method of choice. This test
yielded accurate results regarding the probability of Type I

error even for the smallest sample size investigated (N =
6). The power of t_{F2} was the highest among the tests
evaluated in their study. The main differences between the
z+, which they recommended before to test the null
hypothesis (H: p = 0), and t_{F2} tests were that the latter
yielded somewhat more exact p values and had slightly higher
power against intermediate and high values of p_1. A minor
disadvantage of t_{F2} was that it was somewhat more complex to
compute than z+ (Huitema & McKean, 1994b, pp. 331-336).

In summary, visual inspection is very confusing,
unreliable, and has a high risk of producing a Type I error,
as indicated by many studies (Park, Marascuilo, and Gaylord-
Ross, 1990; Ottenbacher, 1990; Parsonson and Baer, 1992). A
person's first method of data analysis is the method of
"eyeballing." Whether the interpretation about the data is
valid or invalid, reliable or unreliable is a secondary
matter requiring the precision of statistical tests. These
data should be presented in the form of charts, tables, or
graphics. Procedures of statistical analysis also have as

much probability of producing a Type I error as do visual inspections. There are many assumptions, but the violations of independence and normality are major problems in using statistical procedures. As was pointed out by White (1987), for example, when researchers employed meta analytical method, effect size, to analyze their data, especially with small data points, they could lose a good deal of information while assimilating the data into the model. The most troublesome issue is how to control autocorrelations through the use of statistical methods.

In this section the two distinctive methods of data analysis have been described. They are: (a) a descriptive method for seeking primary evidence (visual inspection), and (b) an inferential method for integrating the data to assess the effect of treatment and generalize them to future study (C statistic, interrupted time-series analysis, and effect size).

CHAPTER 3

RESULTS

Descriptive Data and Visual Inspection

Pair A and Pair B received social problem-solving skills training after the baseline observations, and Pair C and Pair D received basic interpersonal communication skills training. Two observers independently rated the 10-minute videotaped materials for each session using the Interaction Behavior Code (IBC) sheet. Means of composite scores from the two raters are presented in graphs in the usual manner of psychological reports. The four pairs' negative communication responses unanimously showed the same pattern, in the direction of downward trend, and all the sons' response scores were lower than the fathers'. The fathers' scores were typically higher than their paired sons' (see Appendix A and B).

Description of Data

Tables 4 to 7 present the mean scores from the two raters based upon the rating assigned on the IBC. Table 4 shows the four pairs of fathers' and sons' negative communication

responses for 23 sessions. Sessions one to six comprised the baseline phase, sessions seven to 17 intervention sessions, and sessions 18 to 23 the follow-up sessions. (This format will be the same in the following tables and graphic formats). The raw scores of the two raters, mean, median, and standard deviation for four pairs and three phases are presented in the appendices. Table 5 shows mean scores of the four pairs of fathers' and sons' positive communication responses across the three phases (23 sessions). Table 6 and Table 7 show the mean scores of the overall evaluation for the four pairs together. Item #33 uses a five-point Likert-type scale, the other three items (#34, #35, and #36) use a four-point Likert-type scale.

Graphic formats have been generated from the above tables for the purpose of visual inspection. Only the first graphic of the fathers' negative communication responses is presented with various kinds of detailed regression lines. This will be explained and discussed in the following chapter. To avoid confusion, the rest of the graphic figures are presented in a simple form with the regression line for each phase. This line is drawn from the ITSACORR program. As indicated in the section on data analysis in Chapter 2, there is a high probability of producing the Type I error if we do not seriously consider the concept of autocorrelation (i.e., unbiased autocorrelation estimators),

Table 4

Father's and Son's Negative Communication Responses

(Mean composite scores of two raters)

Sessions	Pair A		Pair B		Pair C		Pair D	
	Father	Son	Father	Son	Father	Son	Father	Son
1	9.50	2	3.50	4	4.25	2.25	4.25	1
2	3.25	.5	4.00	2	6.00	3.5	5.75	0
3	4.75	2	2.25	1.5	6.50	2.25	4.50	2
4	4.50	0	7.75	3.25	4.75	2	3.75	.5
5	5.75	2.5	3.00	1	6.75	3.25	4.50	.5
6	5.00	3	8.00	2	4.25	2.5	3.25	1
7	2.25	1.5	0	1	5.00	2	3.75	.5
8	3.75	2.5	.50	1	2.75	1.75	2.50	2.25
9	5.25	1	1.50	.5	4.00	2	3.75	2.25
10	1.75	1.25	7.75	2	3.50	1.25	4.00	1.5
11	2.50	2.5	.50	1.5	1.75	2.25	2.50	1
12	4.00	2.5	0	0	3.75	3.5	2.75	1.25
13	1.00	0	3.50	1.25	3.50	1	3.50	2.5
14	1.50	0	0	1	1.50	.5	1.50	1
15	4.25	1.5	4.75	3	3.50	.75	1.00	.5
16	1.75	3	6.25	3	3.00	2.75	2.75	1
17	1.50	0	5.75	5.25	3.75	.75	.75	.5
18	1.00	0	0	1.25	3.50	.5	2.75	.75
19	2.25	.75	2.50	1	4.00	1.5	1.50	1
20	4.50	.75	2.25	1.5	1.50	1	4.00	2
21	2.75	.5	1.75	1.75	1.00	0	2.00	1.5
22	5.25	2.5	.25	0	3.50	.5	2.75	2
23	2.75	1	1.75	.5	2.00	.5	2.25	1.5

Note. Baseline phase =   1 - 6 sessions

Treatment phase =   7 - 17 sessions

Follow-up phase = 18 - 23 sessions

Maximum possible scores = 27

Table 5

Father's and Son's Positive Communication Responses

(Mean composite scores of two raters)

Sessions	Pair A		Pair B		Pair C		Pair D	
	Father	Son	Father	Son	Father	Son	Father	Son
1	3.75	3.50	2.50	0.25	3.50	0.75	1.50	0.50
2	3.50	0.25	2.00	1.00	1.50	0.75	2.00	0.25
3	2.00	1.00	1.00	1.00	1.50	1.00	1.00	0
4	0.75	1.00	0	0	2.50	1.00	0.25	0.25
5	1.00	1.00	3.00	0.75	1.50	1.00	3.75	0.25
6	0.25	0.50	2.00	0.75	1.50	0	1.00	0
7	1.75	0	1.00	1.00	1.75	0	1.00	0.25
8	0.75	0.25	0.50	0.50	1.00	0	2.00	0.75
9	1.00	0.25	1.75	1.00	1.50	0	1.00	0.75
10	0.50	0.25	2.50	2.00	1.00	0	1.75	0.75
11	1.50	1.00	2.00	0.50	1.50	0	1.25	1.00
12	1.50	1.00	1.00	2.00	1.25	0	1.25	1.00
13	0.50	1.00	2.00	1.00	1.50	1.00	0.25	1.00
14	0.50	1.00	0.50	1.00	3.50	1.00	0.75	0.75
15	1.25	1.00	2.00	1.00	1.50	1.00	1.00	1.00
16	0.25	1.25	0.50	1.00	1.00	1.00	2.00	1.00
17	1.25	1.00	1.75	1.00	1.00	1.00	1.00	0.75
18	2.50	1.00	1.50	1.00	1.50	0.50	1.00	0.25
19	1.50	1.00	1.50	1.00	2.50	0.75	0.25	0.50
20	1.00	1.00	1.50	0	1.50	1.00	1.00	0.25
21	2.00	1.50	0	0	3.50	1.00	1.00	0
22	1.25	1.50	0.25	1.00	2.00	1.00	1.00	0
23	0.50	0	1.75	0.50	1.50	1.00	0.50	0.50

Note. Baseline phase = 1 - 6 sessions

Treatment phase = 7 - 17 sessions

Follow-up phase = 18 - 23 sessions

Maximum possible scores = 7

Table 6

Pairs A and B: Overall Evaluation of Communication

Effectiveness

(Mean scores of two raters on Likert-type scale)

	#33		#34		#35		#36	
Sessions	A	B	A	B	A	B	A	B
1	3.0	2.5	1.0	1.5	2.0	2.5	4.0	2.5
2	2.5	5.0	2.0	2.0	2.5	3.0	3.5	3.5
3	3.5	4.5	2.5	2.0	2.5	2.5	3.0	4.0
4	4.0	2.0	2.0	3.5	1.5	2.0	3.5	3.0
5	2.5	2.0	2.5	2.0	2.5	3.5	3.0	3.0
6	4.0	3.5	2.5	2.5	2.0	2.0	3.5	3.0
7	3.5	4.0	1.5	1.5	3.0	3.5	2.5	4.0
8	4.0	5.0	1.0	1.0	2.0	2.0	3.5	4.0
9	4.0	5.0	2.0	2.0	2.0	2.0	4.0	4.0
10	4.5	2.0	1.0	3.0	3.0	3.0	3.5	2.5
11	3.5	2.0	1.0	2.5	3.5	3.5	3.0	2.5
12	4.0	5.0	1.0	2.0	3.0	3.0	3.5	3.5
13	3.5	3.0	1.0	3.0	3.5	2.0	3.0	2.5
14	2.0	4.0	1.0	2.5	3.5	2.5	2.0	3.5
15	4.0	3.0	1.0	3.0	2.5	2.5	4.0	3.0
16	4.0	1.5	1.5	2.0	2.5	3.0	4.0	2.0
17	2.5	3.0	1.0	2.0	3.0	3.0	2.5	3.0
18	2.0	3.5	1.0	1.5	3.0	2.5	2.0	3.0
19	2.0	2.0	1.0	1.0	3.5	3.0	2.0	2.0
20	2.5	4.0	1.5	3.0	2.5	3.0	3.0	3.0
21	3.0	2.0	1.5	1.0	3.0	3.5	3.0	2.0
22	2.0	3.0	1.5	3.0	3.0	3.0	2.5	3.0
23	1.5	1.0	1.0	1.0	3.5	3.5	1.5	2.0

Note.   Item #33.   Outcome
                         1 = clear resolution,   5 = no resolution
         Item #34.   Putting each other down
                         1 = none,   4 = a lot
         Item #35.   Friendliness
                         1 = none   4 = a lot
         Item #36.   Effectiveness of problem-solving
                         1 = very effective, 4 = very ineffective

Table 7

Pairs C and D: Overall Evaluation of Pairs' Communication

Effectiveness

(Mean scores of two raters on Likert-type scale)

	#33		#34		#35		#36	
Sessions	C	D	C	D	C	D	C	D
1	2.0	2.5	1.5	3.0	3.0	2.5	2.0	3.0
2	3.0	3.0	2.5	1.5	2.5	2.5	3.0	3.5
3	1.5	2.0	2.0	2.0	3.0	3.5	2.0	2.5
4	1.5	4.0	1.5	1.5	3.0	2.5	1.5	3.5
5	2.5	2.0	2.5	2.0	3.0	3.0	3.0	3.0
6	2.0	1.5	2.0	1.5	3.0	3.5	2.5	2.5
7	1.5	1.5	2.0	3.0	3.0	3.5	2.0	3.0
8	1.5	2.5	2.0	2.0	3.5	2.5	1.5	3.0
9	2.0	2.5	2.0	1.5	3.0	2.5	2.5	2.5
10	3.0	2.5	2.5	2.0	3.0	2.5	3.0	3.0
11	3.0	3.0	2.5	2.5	2.0	3.0	2.5	3.0
12	2.5	3.0	2.0	2.0	3.0	3.0	2.0	3.0
13	2.0	4.0	2.0	1.0	3.0	3.5	2.0	3.5
14	1.5	3.0	1.0	1.0	3.0	2.5	2.0	4.0
15	2.0	4.5	2.0	1.0	3.0	2.5	2.0	4.0
16	2.5	4.0	2.5	1.0	3.0	3.0	2.5	4.0
17	1.5	3.5	1.5	1.0	3.5	3.0	2.0	3.5
18	1.5	2.5	1.5	2.0	3.0	3.0	1.5	3.5
19	1.0	3.5	1.5	1.0	4.0	2.0	1.0	4.0
20	1.0	2.0	1.0	1.5	4.0	3.0	1.0	3.5
21	1.0	4.0	1.0	3.0	3.5	2.5	1.0	3.5
22	1.0	3.5	1.5	2.0	3.0	3.0	1.5	3.5
23	1.5	3.0	1.0	1.5	3.0	3.5	1.5	3.5

Note. Item #33. Outcome
            1 = clear resolution, 5 = no resolution
        Item #34. Putting each other down
            1 = none,   4 = a lot
        Item #35. Friendliness
            1 = none   4 = a lot
        Item #36. Effectiveness of problem-solving
            1 = very effective, 4 = very ineffective

especially in the case of small samples (i.e., data points numbers less than 50). The regression lines from the ITSACORR program are different from the general least squares (GLS) method because it has been adjusted by autocorrelation estimators. If the researcher employed the procedure that is formulated from an unbiased autocorrelation estimator, he/she could accomplish more reliable and unbiased results, that is, reducing the Type I error.

In the following sections, the researcher will present the demographic data, followed by short explanations. Much more attention will be paid to the statistical analyses for the purpose of testing the research hypotheses. In accordance with the purpose of this study, the results of treatment data from the four pairs will be presented in two separate parts(modes); (a) one set of treatment resulted from those who received the social problem-solving skills training (pairs A and B), and (b) the other set of treatment data resulted from those who received interpersonal communication skills training (pairs C and D). However, as stated in Chapter 2, it is impossible to compare the effect of two modes of treatment directly through this kind of single subject design. It is only suggested that if the researcher could derive the effect sizes from the regression model properly, then it is possible to compare the effects between two modes.

Table 24 summarizes the effectiveness of treatment using three different methods of data analysis for social problem-solving skills training. In the following sections, only the data which revealed visually and statistically significant effect were presented.

Visual Inspection

As mentioned in the section on data analysis (Chapter 2), the criteria used in visual inspection were: (a) level change between two adjacent phases, (b) slope (trend) changes within a phase (condition), and (c) stability within a phase. As a guideline, a regression line for each phase was drawn from the screen image of the computer monitor using the ITSACORR program. The other two lines (one from the semiaveraged method and the other from the GLS) were omitted by the researcher, because those lines would give misleading information.

Pair A: Father's and Son's Negative Communication Responses

Figure 1 shows a slightly decelerating trend with highly unstable variability within the condition of the baseline phase (mean 5.46, median 4.88, SD 2.14). It is noteworthy that the former statement is misleading, if the line of six data points were not adjusted by an autocorrelation estimator from the ITSACORR program. The

Table 24

Summary of Effectiveness of Treatment Using Various Kinds of

Method.   (Social Problem-Solving Skills Training)

Pair	Method	Negative Response		Positive Response		Overall Evaluation				Y/N
		Dad	Son	Dad	Son	#33	#34	#35	#36	
A	VI	Y	N	N	N	N	Y	Y	Y	4/4
	C	Y	N	N	N	Y(F)	Y .	Y	Y(F)	5/3
	ITSA	N	Y(m)	N	Y(m)	Y(m)	Y(m)	N	N	4/4
B	VI	Y	Y	N	N	N	N	Y(F)	N	3/5
	C	N	Y	N	Y	Y	N	Y(F)	Y(F)	5/3
	ITSA	Y	N	N	N	N	N	N	N	1/7

Note.   Methods: VI = Visual Inspection

   Visual inspection should be done first
     before the other two results are filled
     in this format in order to avoid the
     influence from the other two results.

   C = the C statistic

   ITSA = ITSACORR Analysis

Voting: Y = A significant treatment effect was
           found at alpha level of .05 or .01.

   N = Not significant effect was found

   (m) = moderate significant effect was
           found at alpha level of .10

   (F) = Follow-up

   Y/N = The ratio of Y or N (Voting rate

direction of the line was the opposite of a line derived

using the ordinary GLS method (see Appendix L), i.e., the

line was actually accelerating. The line derived from the

semiaveraged method also gives a wrong information. During

the intervention phase, there was an unstable decelerating

trend and an abrupt change in level between conditions

(baseline and intervention phases). There was a difference

of 2.5 points between the last data point of the baseline

phase and the first data point of the intervention phase.

Of course, some data overlapped between the baseline and

intervention phases. There appeared to be a treatment

effect during the intervention phase. However, during the

follow-up phase (no treatment condition, NT, in the

experimental design), there was an accelerating trend with

high instability within the condition.

Figure 1 also shows Son A's negative communication

responses. No changes in the slope and level across the

three phases were observed. It is noticeable in all the

figures of the four pairs, that the communication revealed a

typical pattern of father-and-son dyads in traditional

Korean/Eastern families. In traditional Korean families,

the father holds an authoritarian view, where he dominates

the dialogue, with very little input from the son. The

son's communication pattern is very passive and submissive

(nonassertive). This pattern seems to have held in the

present case. The son had a rare chance to talk with his

father. There is no treatment effect during the
intervention phase.

Pair A: Father's and Son's Positive Communication Responses

Seven positive-response were imbedded in the coding
system. Very few of them were noticed by the two raters.
This would indicate that the father provided few positive
responses. The average score for this father was 1.5
throughout all of the sessions. During the intervention
phase, the average scores were lower than baseline and
follow-up sessions (.99 for the intervention, 1.88 for the
baseline, and 1.46 for the follow-up phase).

Table 5 and Figure 2 reveal the average responses for
both Father A and Son A.

Pair A: Overall Evaluation

Figure 3 (item #33 of the IBC), which sums up the
outcome, shows an overall evaluation for this father-and-son
pair. Scores were derived from a five-point Likert-type
scale. Score 5 stands for "no resolution" and score 1 for
"clear resolution." There were no slope or level changes
during the baseline and intervention phases, but a declining
trend with a slight instability appeared during the follow-
up phase. This would indicate there was no clear resolution
of the problem.

Figure 4 (item #34), which deals with putting each other down, shows that there was an accelerating trend during the baseline phase. During the intervention phase, an abrupt level change and stable, no trend change were noticed. Item #34 has a four-point Likert-type scale. Score 4 indicates "a lot" and 1 indicates "none." There was significant treatment effect, and this effect remained stable during the follow-up phase.

Figure 5 (item #35), which is concerned with friendliness, shows an accelerating trend change during the treatment and follow-up phases. Item #35 has a four-point Likert-type scale. Score 4 represents "a lot" and 1 indicates "none."

Figure 6 (item #36), which covers effectiveness, reveals that there were no trend or level changes during baseline and treatment phases. But during the follow-up phase, treatment effect was noticed. Item #36 also has a four-point Likert-type scale; score 4 indicates "very ineffective" and score 1 indicates "very effective."
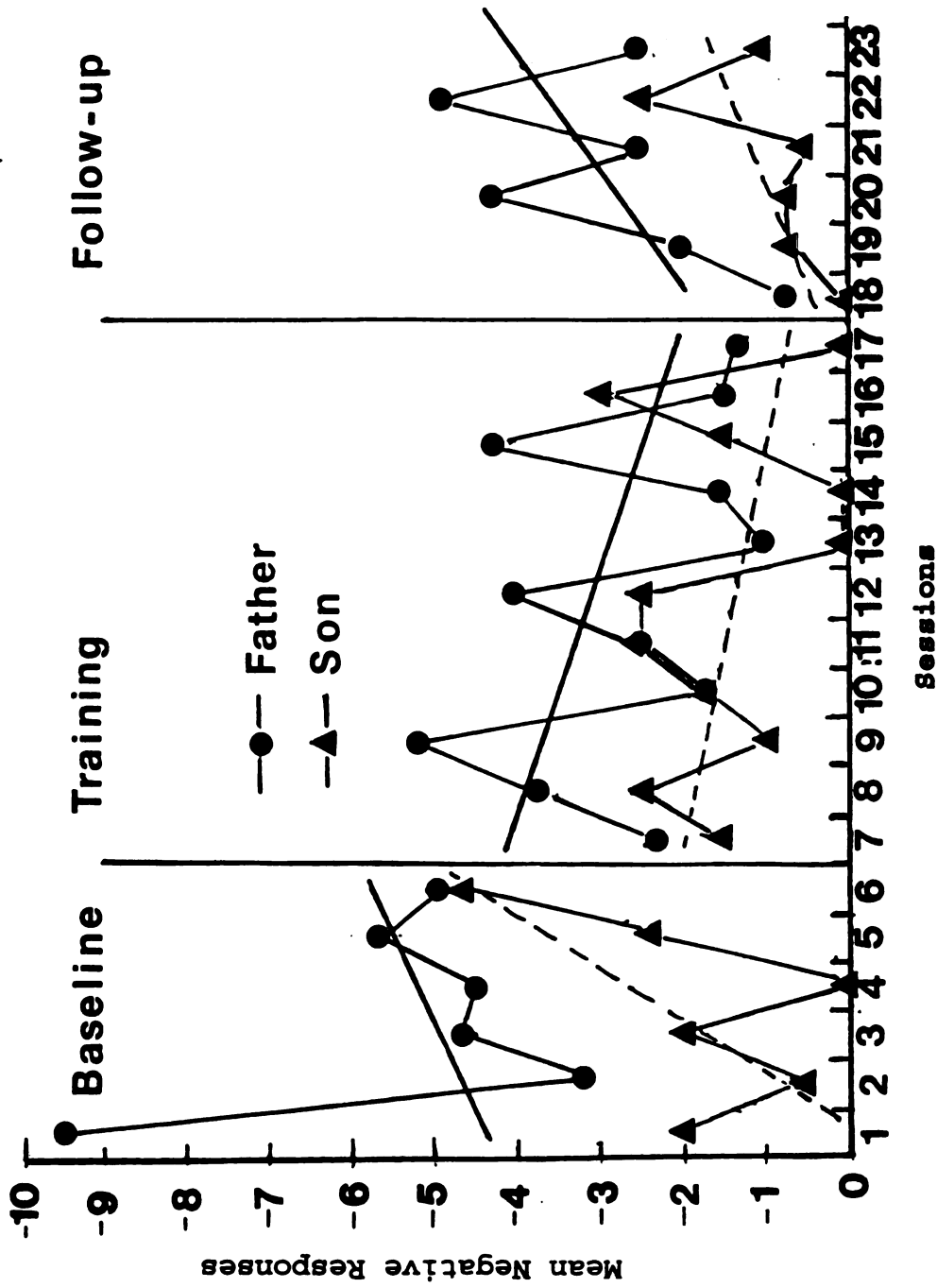
Figure 1. Father A and Son A's negative communication responses. The scores are mean scores from two independent raters. The possible maximum score is 25. Three separate regression lines across the three phases are indirectly drawn from the screen image of the computer monitor obtained by the ITSACORR program.
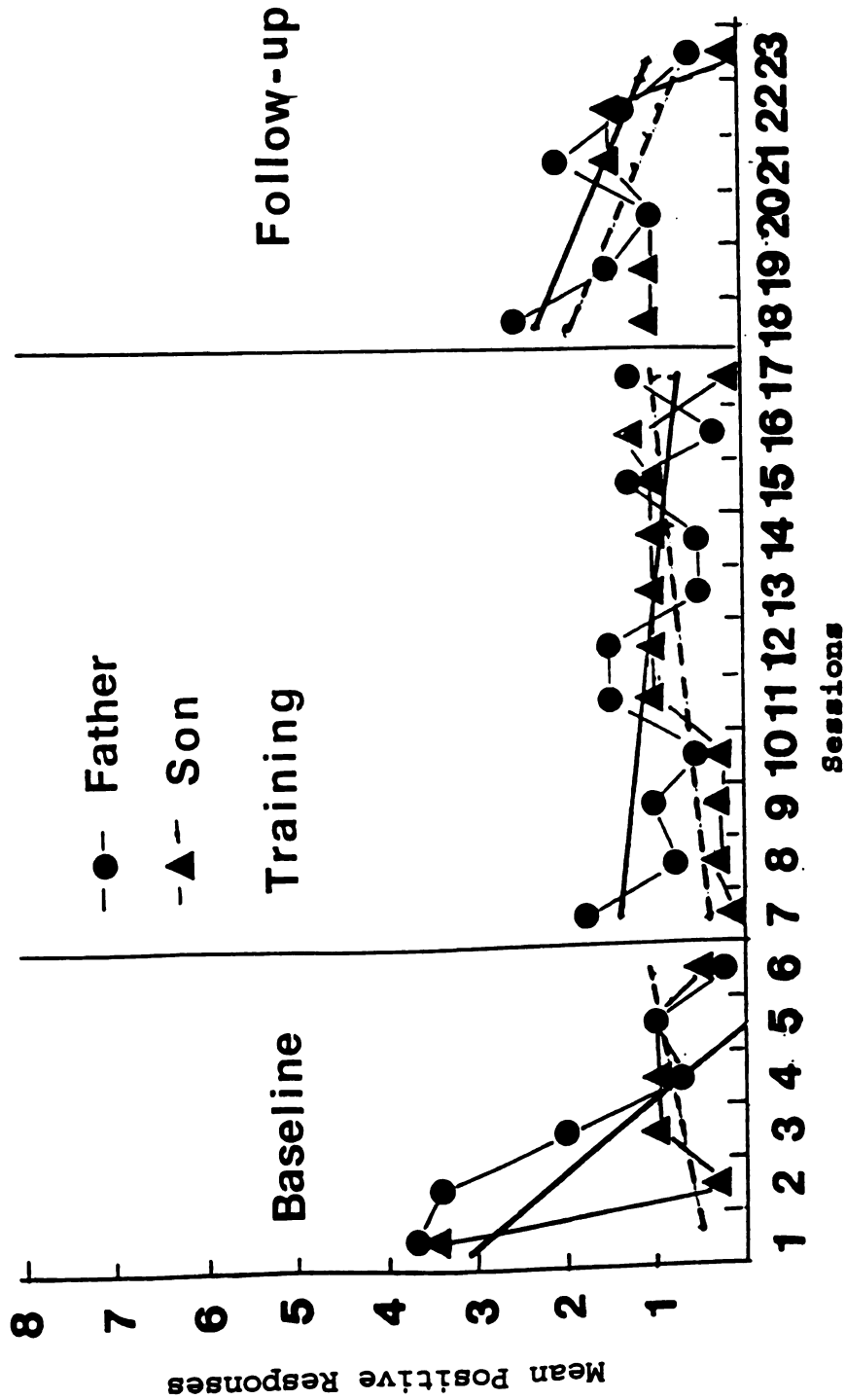
Figure 2. Father A and Son A's positive communication responses. The scores are mean scores from two independent raters. The possible maximum score is 7. Three separate regression lines across the three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by ITSACORR program.
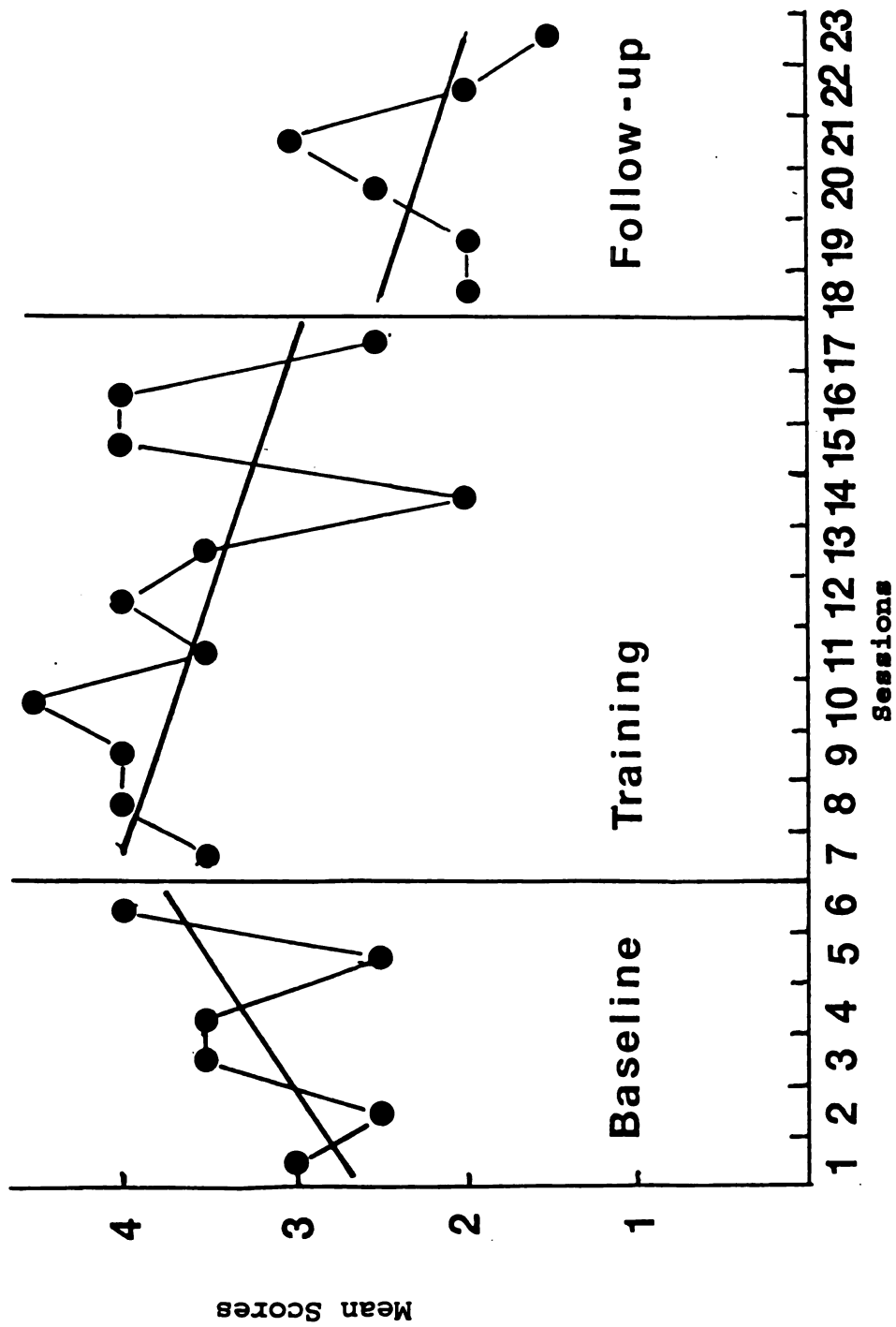
Figure 3. Pair A. Item #33, outcome--degree of resolution of the program being discussed. Five-point Likert-type scale (1 = clear resolution, 5 = no resolution) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.
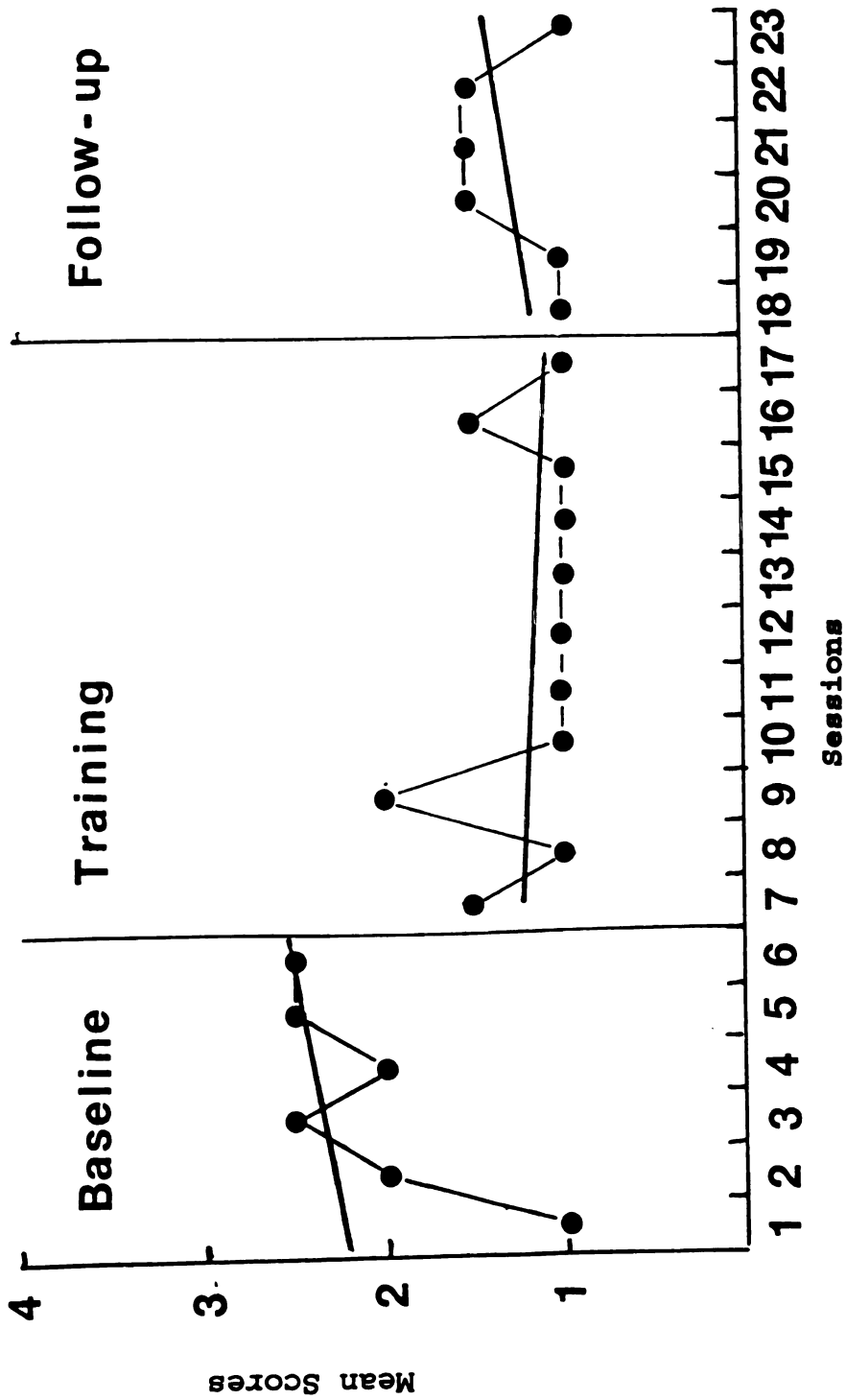
Figure 4. Pair A. Item #34, putting each other down--degree of belittlement and criticism, taking into account both members. Four-point Likert-type scale (1 = none, 4 = a lot) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of computer monitor exhibition obtained by the ITSACORR program.
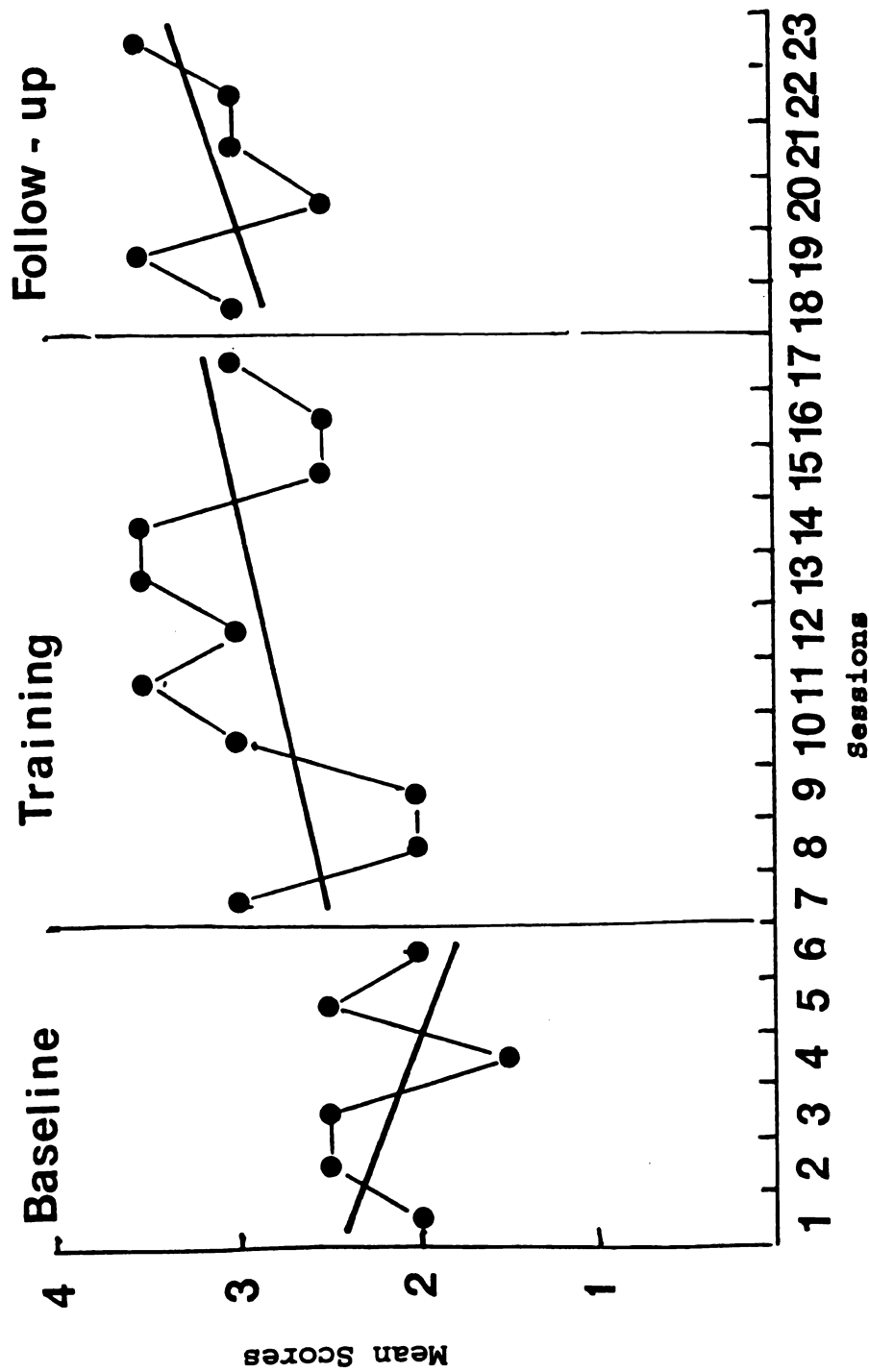
Figure 5. Pair A. Item #35, friendliness--saying nice things to each other, keeping the discussion pleasant for both members. Four-point Likert-type scale (1 = none, 4 = a lot) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of computer monitor exhibition obtained by the ITSACORR program.
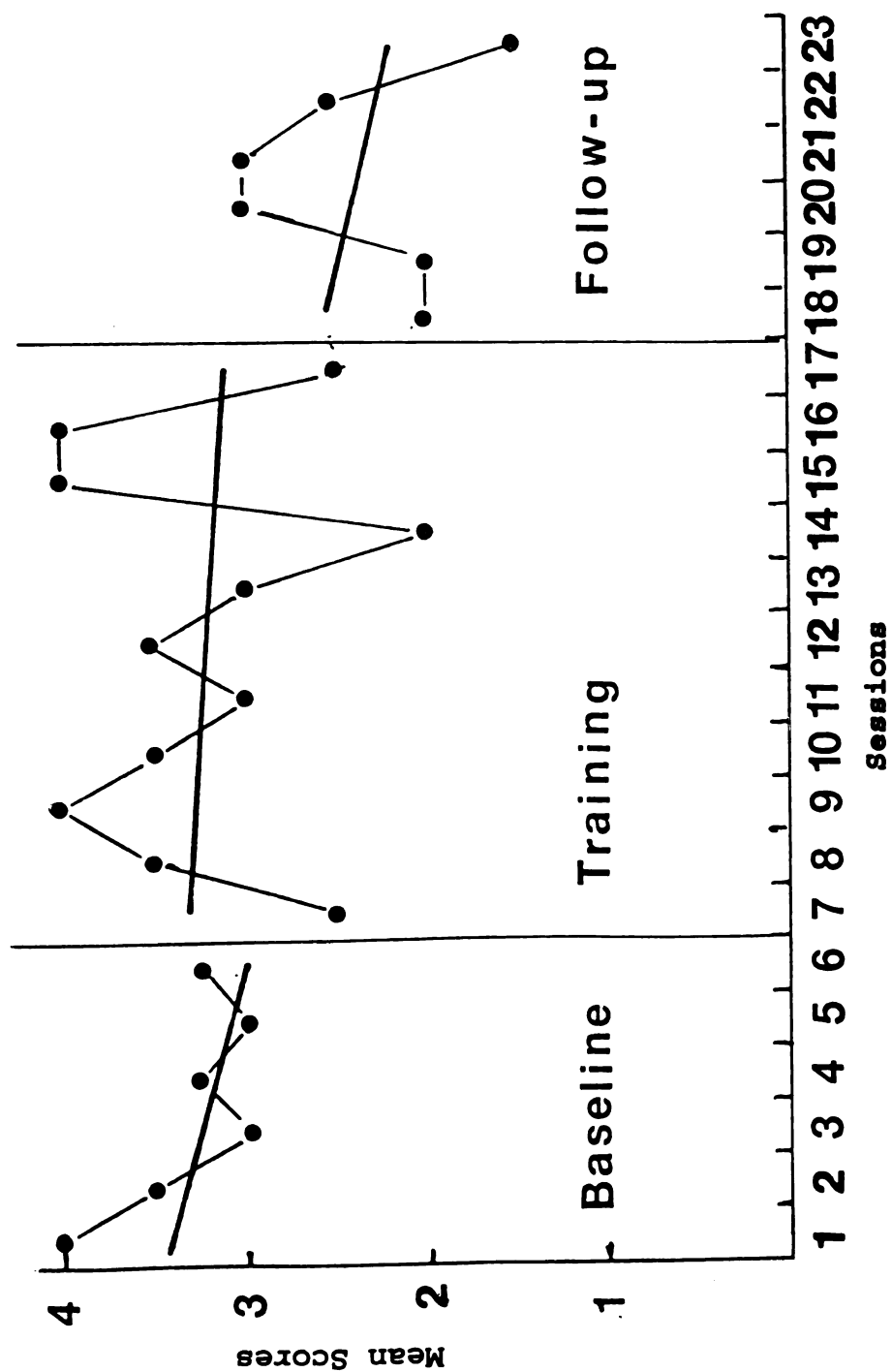
Figure 6. Pair A. Item #36, effectiveness--how effective were the two at solving problems that came up? Four-point Likert-type scale (1 = very effective, 4 = very ineffective) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.

As reiterated previously, the "eyeballing"-test is unreliable without the support of evidence derived from statistical analysis. In the following section, two statistics were employed to assess the treatment effect: $\underline{C}$ statistic and interrupted time series analysis. The effect size for each treatment can be derived from the regression model of time-series. The procedure of estimating effect size was not used for the purpose of this study, because the researcher needed more information about the utility of the effect size. Not enough is currently known about the statistical properties of the effect size, and further investigation is necessary (personal communication with Crosbie, 1995).

Statistical Analysis

Results of C Statistic

For evaluating treatment effect with a short interrupted time series, Tryon (1982) and DeCarlo and Tryon (1993) recommended the $\underline{C}$ statistic, which was originally developed by Young (1941). They suggested that statistical judgments were better than visual judgments.

Pair A: Father's and Son's Negative Communication Responses

The $\underline{C}$ statistics for father's and son's negative communication responses were calculated for each phase for

all occasions in order to evaluate the effect of intervention (see the calculation procedures in Appendix I). For Father A, Table 8 showed a marginally significant treatment effect during the training phase (Z = 1.55 p< .10), but no significant changes were observed during either the baseline or the follow-up phases (Z = .15, Z = .19, respectively).

No significant effect was found for Son A during the treatment and follow-up phases (see the Table 9).

Pair A: Overall Evaluation

The results of the C statistic for overall evaluation showed significant treatment effects across all items (#33, #34, #35, and #36). The results of the C statistic for item #33, outcome, (Pair A in Table 13 and Figure 3) revealed a significant treatment effect during the second part of the training and follow-up phases (PT + F, Z = 2.20, p < .05).

For item #34, putting each other down, (Pair A in Table 14 and Figure 4), a significant change during the treatment phase (B + T, Z = 2.35, p < .01) was found. It is noticeable that if there is stability within a condition (that is, low standard deviation or variance), there would be high probability of a significant effect. It is also true that if researchers increase the data points to 50 or more, then a small change within a condition would produce a statistically significant treatment effect, but this does

not guarantee a clinically or socially valid effect.

For item #35 (Pair A in Table 15 and Figure 5;), which relates to friendliness, a significant treatment effect during the treatment phase (B + T, Z = 1.87, p < .05) was found. To compare this with the phenomena of item #34 and #35, the visual inspection method clearly indicated how the variability (stability across data points) is related with the $\underline{C}$ and transformed Z score (note that the Z score is a kind of absolute standard of measurement, a critical value for testing of significance level). The Z score for item #34 is 2.35 and for item #35 is 1.87.

A significant treatment effect was found after intervention (PT + F, Z = 1.64, p < .05) for item #36 (Pair A in Table 16 and Figure 6). It is to be noted here that visual inspection of item #36 indicated that there was no treatment effect during the intervention phase.

Table 8

Summary of the Results of $\underline{C}$ Statistic for Evaluating
Fathers' Negative Communication Responses.

Pair	Phase	SUM D^2	2*SS(X)	Sc	C	Z	Results
	Baseline	43.5	45.85	.34	.05	.15	n.s.
A	B + T	93.75	144.74	.23	.35	1.55	n.s.
	PT + F	45.56	47.21	.19	.04	.19	n.s.
	Baseline	74.38	57.42	.34	-.30	-.87	n.s.
B	B + T	281.06	260.75	.23	-.08	-.34	n.s.
	PT + F	93.69	111.12	.19	.83	.16	n.s.
	Baseline	16.63	12.92	.34	-.29	-.85	n.s.
C	B + T	37.75	68.47	.23	.45	1.96*	P<.05
	PT + F	21.94	24.88	.19	.12	.64	n.s.
	Baseline	6.5	7.5	.34	.13	.39	n.s.
D	B + T	23.88	55.47	.23	.57	2.47*	p<.01
	PT + F	28.5	21.29	.19	.34	-1.78*	p<.05

Note. B = Baseline phase,   T = Treatment phase

PT = Part of Treatment Phase, F = Follow-up

* = Significant level at p < .05 or p <. 01

n.s. = not significant

Table 9

Summary of the Results of $\underline{C}$ Statistic for Evaluating
Sons' Negative Communication Responses.

Pair	Phase	SUM D	2*SS(X)	Sc	C	Z	Result
A	Baseline	15	13.67	.34	-.09	-.29	n.s.
	B + T	41.88	38.62	.23	-.08	-.36	n.s.
	PT + F	26.63	26.21	.19	-.01	-.01	n.s.
B	Baseline	13.38	12.60	.34	-.06	-.18	n.s.
	B + T	30.06	58.81	.23	.49	2.13*	p<.05
	PT + F	30.38	49.13	.19	.38	2.01*	p<.05
C	Baseline	5.31	3.69	.34	-.44	-1.29	n.s.
	B + T	23.38	28.12	.23	.17	.73	n.s.
	PT + F	17.13	23.12	.19	.26	1.36	n.s.
D	Baseline	7.5	4.67	.34	-.61	-1.78*	p<.05
	B + T	16.25	17.28	.23	.06	.26	n.s.
	PT + F	6.44	8.71	.19	.26	1.37	n.s.

Note. B = Baseline phase,   T = Treatment phase
      PT = Part of Treatment Phase, F = Follow-up
      * = Significant level at $p < .05$ or $p < .01$
      n.s. = not significant

Table 10

Summary of the Results of $\underline{C}$ Statistic for Evaluating Fathers' Positive Communication Responses.

Pair	Phase	SUM D^2	2*SS(X)	Sc	C	Z	Results
	Baseline	4.5	21.46	.34	.79	2.32*	p<.01
A	B + T	12.63	33.06	.23	.62	2.68*	p<.01
	PT + F	8.5	9.83	.19	.14	.71	n.s.
	Baseline	12.25	11.75	.34	- .04	- .13	n.s.
B	B + T	26.19	23.22	.23	- .13	- .56	n.s.
	PT + F	13.94	11.03	.19	- .26	-1.39	n.s.
	Baseline	6	7	.34	.14	.14	n.s.
C	B + T	15.75	19.19	.23	.18	.78	n.s.
	PT + F	17.06	16.62	.19	- .03	- .14	n.s.
	Baseline	21.63	15.33	.34	- .41	-1.20	n.s.
D	B + T	27.75	22.36	.23	- .24	-1.05	n.s.
	PT + F	8.13	9.03	.19	.10	.53	n.s.

Note. B = Baseline phase,   T = Treatment phase
PT = Part of Treatment Phase, F = Follow-up
* = Significant level at p < .05 or p <. 01
n.s. = not significant

Table 11

Summary of the Results of $\underline{C}$ Statistic for Evaluating
Sons' Positive Communication Responses.

Pair	Phase	SUM D	2*SS(X)	Sc	C	Z	Result
A	Baseline	11.38	13.60	.34	.16	.48	n.s.
	B + T	12.38	19.27	.23	.36	1.55	n.s.
	PT + F	2.63	3.12	.19	.16	.83	n.s.
B	Baseline	2.15	1.69	.34	- .27	- .80	n.s.
	B + T	9.19	8.19	.23	- .12	- .53	n.s.
	PT + F	3.25	6.18	.19	.47	2.49*	p<.01
C	Baseline	1.06	1.5	.34	.29	.86	n.s.
	B + T	2.06	8.62	.23	.76	3.31*	p<.01
	PT + F	1.38	1.34	.19	- .03	- .16	n.s.
D	Baseline	.25	.34	.34	.26	.77	n.s.
	B + T	.81	4.27	.23	.81	3.5*	p<.01
	PT + F	.88	3.34	.19	.73	3.88*	p<.01

Note. B = Baseline phase,   T = Treatment phase
      PT = Part of Treatment Phase, F = Follow-up
      * = Significant level at p < .05 or p <. 01
      n.s. = not significant

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Table 12

Summary of the Results of $\underline{C}$ Statistic for

Overall Evaluation.

#33   Outcome--degree of resolution of problems

Pair	Phase	SUM D^2	2*SS(X)	Sc	C	Z	Results
A	Baseline	6	4.75	.34	- .26	- .77	n.s.
	B + T	16.75	16.47	.23	- .02	- .01	n.s.
	PT + F	10.75	18.5	.19	.42	2.20*	p<.05
B	Baseline	15	16.75	.34	.11	.31	n.s.
	B + T	45	24.88	.23	- .81	-3.51	p<.01
	PT + F	26	28.83	.19	.10	.52	n.s.
C	Baseline	4.5	3.42	.34	- .32	-.93	n.s.
	B + T	24	10.24	.23	-1.34	-5.84	p<.01
	PT + F	2.5	40.38	.19	.94	4.94	p<.01
D	Baseline	9.5	9.31	.34	- .02	-6.0	n.s.
	B + T	16.5	26	.23	.36	1.59	n.s.
	PT + F	13.5	11.13	.19	-2.21	-1.12	n.s.

Note. B = Baseline phase,   T = Treatment phase

    PT = Part of Treatment Phase, F = Follow-up

    * = Significant level at p < .05 or p <. 01

    n.s. = not significant

Table 13

Summary of the Results of $\underline{C}$ Statistic for

Overall Evaluation.

#34 Putting each other down--degree of belittlement.

Pair	Phase	SUM D	2*SS(X)	Sc	C	Z	Result
	Baseline	1.75	3.42	.34	.49	1.43	n.s.
A	B + T	5.5	12	.23	.54	2.35*	p<.01
	PT + F	1	1.33	.19	.25	1.30	n.s.
	Baseline	5	4.75	.34	- .05	- .15	n.s.
B	B + T	11.5	13.12	.23	.12	.54	n.s.
	PT + F	19	14.83	.19	- .28	-1.47	n.s.
	Baseline	2.75	2	.34	-.37	-1.10	n.s.
C	B + T	6.5	6	.23	-.08	- .36	n.s.
	PT + F	3.25	3.25	.19	0	0	n.s.
	Baseline	3.25	3.42	.34	.05	.15	n.s.
D	B + T	8.5	14.12	.23	.39	1.73*	p<.05
	PT + F	6.75	9.50	.19	.29	1.52	n.s.

<u>Note.</u> B = Baseline,   T = Treatment

PT = Part of treatment phase

F = Follow-up

* = Significant level at p < .05 or p <. 01

n.s. = not significant

Table 14

Summary of the Results of C̲ Statistic for

Overall Evaluation

#35 Friendliness

Pair	Phase	SUM D^2	2*SS(X)	Sc	C	Z	Results
A	Baseline	2.5	1.67	.34	-.50	-1.46	n.s.
	B + T	6.56	11.53	.23	.43	1.87	p<.05
	PT + F	3.25	3.46	.19	.06	.32	n.s.
B	Baseline	5.25	3.42	.34	-.53	-1.57	n.s.
	B + T	12.75	9.94	.23	-.28	-1.23	n.s.
	PT + F	2.75	4.13	.19	.33	1.75*	p<.05
C	Baseline	.50	.42	.34	-.19	- .56	n.s.
	B + T	3.25	3.47	.23	.06	.28	n.s.
	PT + F	2	3.50	.19	.43	2.25*	p<.05
D	Baseline	2.50	2.42	.34	-.03	- .01	n.s.
	B + T	5.25	5.52	.23	.05	.21	n.s.
	PT + F	4.25	4.13	.19	-.03	- .15	n.s.

Note. B = Baseline phase,   T = Treatment phase

PT = Part of Treatment phase, F = Follow-up

* = Significant level at p < .05 or p <. 01

n.s. = not significant

Table 15

Summary of the Results of <u>C</u> Statistic for

Overall Evaluation

#36 Effectiveness of problem-solving

Pair	Phase	SUM D	2*SS(X)	Sc	C	Z	Result
	Baseline	1.25	1.42	.34	.12	.35	n.s.
A	B + T	11.75	11.06	.23	-.06	- .27	n.s.
	PT + F	10.00	14.50	.19	.31	1.64[*]	p<.05
	Baseline	2.25	2.67	.34	.16	.46	n.s.
B	B + T	9.75	12.77	.23	.24	1.02	n.s.
	PT + F	9.25	6.28	.19	-.47	-2.49[*]	p<.01
	Baseline	4.75	3.67	.34	-.29	- .87	n.s.
C	B + T	7.74	7.12	.23	-.09	- .38	n.s.
	PT + F	1.00	5.33	.19	.81	4.27[*]	p<.01
	Baseline	2.25	2.67	.34	.16	.46	n.s.
D	B + T	9.75	12.77	.23	.24	1.03	n.s.
	PT + F	9.25	6.28	.19	-.47	-2.50[*]	p<.01

<u>Note.</u> B = Baseline phase,   T = Treatment phase

PT = Part of Treatment phase, F = Follow-up

* = Significant level at p < .05 or p <. 01

n.s. = not significant

The Results of Statistical Analysis Using ITSACORR Program

Crosbie (1993) developed a new computer program for an interrupted time-series analysis procedure (ITSACORR) to assess: (a) level change, (b) slope change, and (c) combined level and slope change. An estimated autocorrelation had been introduced to evaluated the effect of treatment. It should be noted again that the problem of over- or under-adjustment remained here. Further investigation was required (see more details in Chapter 4, Discussion).

Pair A: Father's and Son's Negative Communication Responses

Summaries of statistical analysis were presented from Table 17 to 24 for Pair A. An omnibus F-test and t-test for change in level (intercept) and slope were presented in the same manner as C statistic results which were previously shown.

Table 16

Summary of Statistical Analysis Using ITSACORR

Father's Negative Communication Responses

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	4.31	4.70	.63	.20	.73	.23	1.71	.22
	2	3.69	6.69		-.16	-1.96			
B	1	2.71	1.04	.44	0.8	1.03	.65	3.63	.05*
	2	.26	.15		.43	1.81			
C	1	6.28	7.22	.03*	-.22	-.83	.65	2.20	.15
	2	3.82	7.11		-.09	-1.16			
D	1	5.52	8.44	.03*	-.41	-2.03	.31	.62	.56
	2	3.65	8.99		-.19	-3.06			

Note. * = Significant level at p < .05 or p < .01

Table 17

Summary of Statistical Analysis Using ITSACORR

Son's Negative Communication Responses

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	- .61	- .51	.10	.84	2.27	.04	2.91	.09
	2	1.93	2.56		- .08	- .74			
B	1	-2.14	- .26	.84	.71	.69	.97	1.07	.36
	2	-2.91	- .82		.67	2.15			
C	1	2.93	3.59	.44	- .08	- .34	.99	.13	.88
	2	2.16	4.29		- .08	-1.78			
D	1	.61	.68	.26	.06	.23	.59	1.23	.33
	2	1.87	3.35		- .09	- .16			

Note. * = Significant level at p < .5 or p < .01

Table 18

Summary of Statistical Analysis Using ITSACORR

Father's Positive Communication Responses

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	3.49	1.87	.46	- .67	-1.50	.22	1.28	.31
	2	1.51	1.57		- .06	-.046			
B	1	1.16	1.39	.77	.16	.65	.54	.28	.76
	2	1.42	2.82		- .01	- .02			
C	1	1.65	2.15	.82	.01	.05	.99	.08	.92
	2	1.44	3.03		.01	.15			
D	1	1.28	1.95	.90	.13	.67	.47	.48	.63
	2	1.33	3.39		- .02	- .38			

Note. * = Significant level at P < .05 or P< .01

Table 19

Summary of Statistical Analysis Using ITSACORR
Son's Positive Communication Responses

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	.27	.72	.60	.12	1.01	.96	3.03	.08
	2	.02	.14		.12	3.18			
B	1	.82	2.41	.66	- .06	- .52	.56	.95	.41
	2	1.03	4.77		.01	.32			
C	1	???? 95.25	1.62	.21	-4.43	-2.13	.05*	2.71	.11
	2	-5.55	.08		.31	.49			
D	1	.01	.03	.06	.01	.05	.90	3.92	.05*
	2	.98	4.00		.01	- .31			

Note. * = Significant level at p < .05 or p < .01

No significant treatment effect was found for this father's negative communication responses. For Son A, there was a significant change in slope ($p < .05$) and a marginally significant change in level ($p < .10$). The omnibus F-test for both slope and level showed a marginally significant effect ($F = 2.91$, $p < .10$).

The $\underline{C}$ statistic showed contradictory evidence for Father A's and Son A's negative communication responses. In short, the $\underline{C}$ statistic results found some significant treatment effects for the father's negative communication responses, but no significant effects for Son A. According to visual inspection (see Figure 1), there is no significant effect for the son's negative communication responses.

Pair A: Father's and Son's Positive Communication Responses

The father's positive responses revealed no significant changes in level and slope. Further, omnibus F- test results showed no significant changes.

For Son A, the results indicated a marginally significant change in level ($p < .10$) and a significant change in slope ($p < .05$). The omnibus F-test also showed a marginal significant effect in both level and slope ($F = 2.91$, $p < .10$).

Pair A: Overall Evaluation

For item #33 (outcome), a marginally significant change in level ($p < .10$) was found. The omnibus F-test showed no

significant changes in either slope of level.

For item #34 (putting each other down), a marginally significant change in level (p < .10) was found. The omnibus F-test showed a significant change in both level and slope (F = 3.81, p < .05).

For item #35 (friendliness), both tests (t- and F-tests) showed no significant change. By comparison, the $\underline{C}$ statistic found a significant treatment effect at p < .05.

For item #36 (effectiveness of problem solving), neither the t-test nor the F-test showed a significant change in either level and slope. However the $\underline{C}$ statistic, found a significant treatment effect at p < .05 on this item.

In sum, the ITSACORR procedure produced more stringent t-and F-test results than the $\underline{C}$ statistic. The results of the visual inspection were the least strict; that is, it is highly probable that it would be more likely to allow a Type I error than either of the other two statistical procedures.

Visual Inspection

In this section, Figures 7 to 12 are used for visual inspection, $\underline{C}$ statistic analysis, and ITSACORR analysis. The analytical procedure was the same as that for Pair A. The criteria used in visual inspection were: (a) level change between two adjacent phases, (b) slope (trend) changes within a phase (condition), and (c) stability within

Table 20

Summary of Statistical Analysis Using ITSACORR

Overall Evaluation

#33 Outcome--Degree of Resolution of Problem.

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	2.60	3.50		.20	.90			
				.10			.23	1.82	.20
	2	4.14	9.05		- .09	-1.35			
B	1	5.23	3.44		- .57	-1.27			
				.72			.43	1.21	.33
	2	4.54	4.90		- .18	-1.36			
C	1	2.51	2.58		- .12	- .42			
				.79			.73	.08	.92
	2	2.17	3.67		- .02	- .18			
D	1	3.59	3.50		- .35	-1.16			
				.25			.25	1.37	.29
	2	2.05	3.35		.16	1.70			

Note. * = Significant level at p < .05 or p < .01

Table 21

Summary of Statistical Analysis Using ITSACORR

Overall Evaluation

#34 Putting Each Other Down--Belittlement, and Criticism

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	2.30	4.64		.32	.22			*
				.09			.77	3.81	.05
	2	1.12	4.00		- .02	- .33			
B	1	2.21	2.68		.07	.28			
				.62			.97	.73	.50
	2	1.71	3.37		.08	1.08			
C	1	2.24	4.21		- .05	- .30			
			.	.94			.97	.18	.84
	2	2.29	6.97		- .04	- .83			
D	1	1.54	2.84		.03	.20			*
				.09			.24	4.42	.04
	2	2.74	8.05		- .18	-3.62			

Note. * = Significant level at p < .05 or p < .01

Table 22

Summary of Statistical Analysis Using ITSACORR

Overall Evaluation

#35 Friendliness

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	2.48	4.59		- .09	- .58			
				.91			.44	.62	.55
	2	2.56	7.67		.04	.86			
B	1	2.77	5.71		- .05	- .37			
				.82			.69	.09	.91
	2	2.66	8.82		.01	.20			
C	1	2.60	6.21		.10	.80			
				.48			.46	.29	.75
	2	2.95	11.44		.00	.02			
D	1	2.54	4.92		.16	1.00			
				.66			.37	.65	.54
	2	2.83	8.85		.00	.09			

Note. * = Significant level at p < .05 or p < .01

Table 23

Summary of Statistical Analysis Using ITSACORR

Overall Evaluation

#36 Effectiveness of Problem-Solving

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	3.44	5.60		- .06	- .33			
				.81			.78	.05	.96
	2	3.27	8.62		- .01	- .11			
B	1	3.98	6.28		- .22	-1.15			
				1.50			.66	1.50	.26
	2	3.92	10.04		- .45	-2.24			
C	1	2.39	4.44		.00	.01			
				.75			.99	.10	.90
	2	2.18	6.57		.00	.00			
D	1	3.77	5.28		- .23	-1.12			
				.28			.14	1.29	.31
	2	2.66	6.40		.10	1.72			

Note. * = Significant level at p < .05 or p < .01

a phase. As a guideline, a regression line for each phase was drawn from the screen image of computer monitor using the ITSACORR program.

Pair B: Father's and Son's Negative Communication Responses

Means and standard deviations for Father B during three phases are: baseline (mean = 4.83, SD = 2.4), treatment (2.77, 1.5), and follow-up (1.42, 1.04) (see Appendix A, Pair B). Son B's data were: baseline (2.29, 1.12), treatment (1.77, 1.49), and follow-up (1, .65) (see Appendix B, Pair B). Figure 1 shows a very unstable accelerating trend during the baseline and the intervention phases. However, interestingly enough, even though almost half (five of 11 data points in the treatment phase) overlapped with those of the baseline phase, there were abrupt level changes between the two conditions when comparing the last data point of the baseline phase with the first data point of the treatment phase (the points dropped from 8 to 0, an eight-point level change between conditions).

During the intervention phase the pair showed extremely unstable trend and level changes (i.e., from 0 to 7.5, a wide range of difference within the condition). It is noteworthy that the treatment effect appeared latently during the follow-up phase. The researcher confirmed it with a third person's comments (as a social validation) about Son B's behavior at his home. His older sister and

his mother reported that no more verbal or physical fighting had occurred after the intervention program, and Son B had become more amenable to negotiation rather than confronting his sister and mother.

During the follow-up phase, a stable mild trend was noticed (like a calm after a storm). Son B's negative communication responses were also influenced by Father B's negative ones during the treatment phase. Son B's pattern also showed an up-and-down phenomenon following the father's pattern. Almost the same abrupt level change occurred between the treatment phase and the follow-up phase (a six point difference, from six to zero) as between the baseline and the intervention phases.

Pair B: Overall Evaluation

Figure 11 (item #35), which relates to friendliness, shows a moderately stable trend during the baseline phase. During the treatment phase, a highly unstable change was noticed. No treatment effect was found during the treatment phase. But a latent treatment effect appeared during the follow-up phase. This pattern is very similar as in the case of negative communication responses (see the follow-up phase in Figure 7). Comparing the baseline with the follow-up phase, a strong accelerating trend was noticed during the follow-up phase (a curve was made from the baseline, through the training, and to the follow-up).
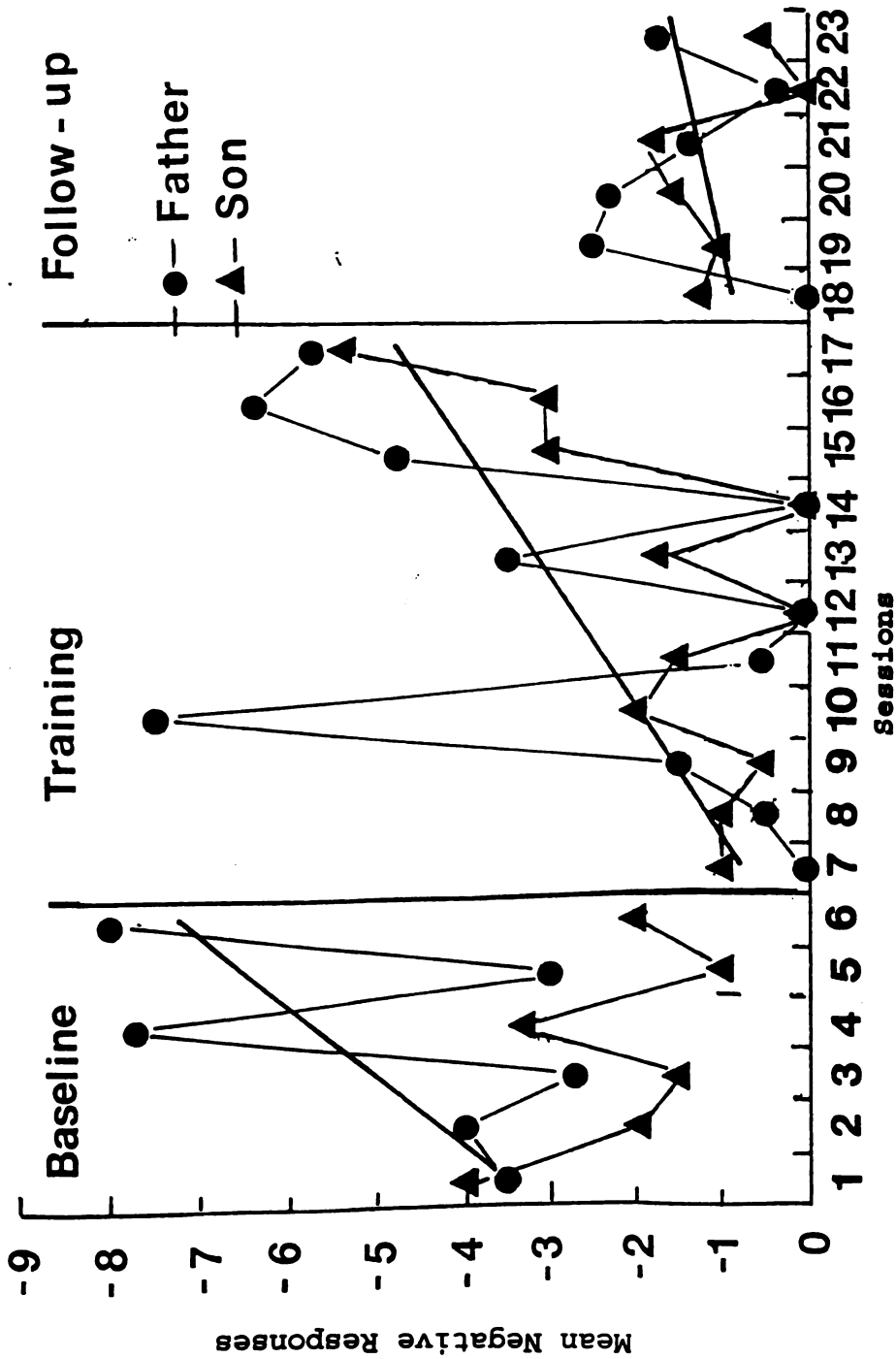
Figure 7. Father B and Son B's negative communication responses. The scores are mean scores from two independent raters. The possible maximum score is 25. Three separate regression lines across the three phases are indirectly drawn from the screen image of computer monitor obtained by the ITSACORR program.
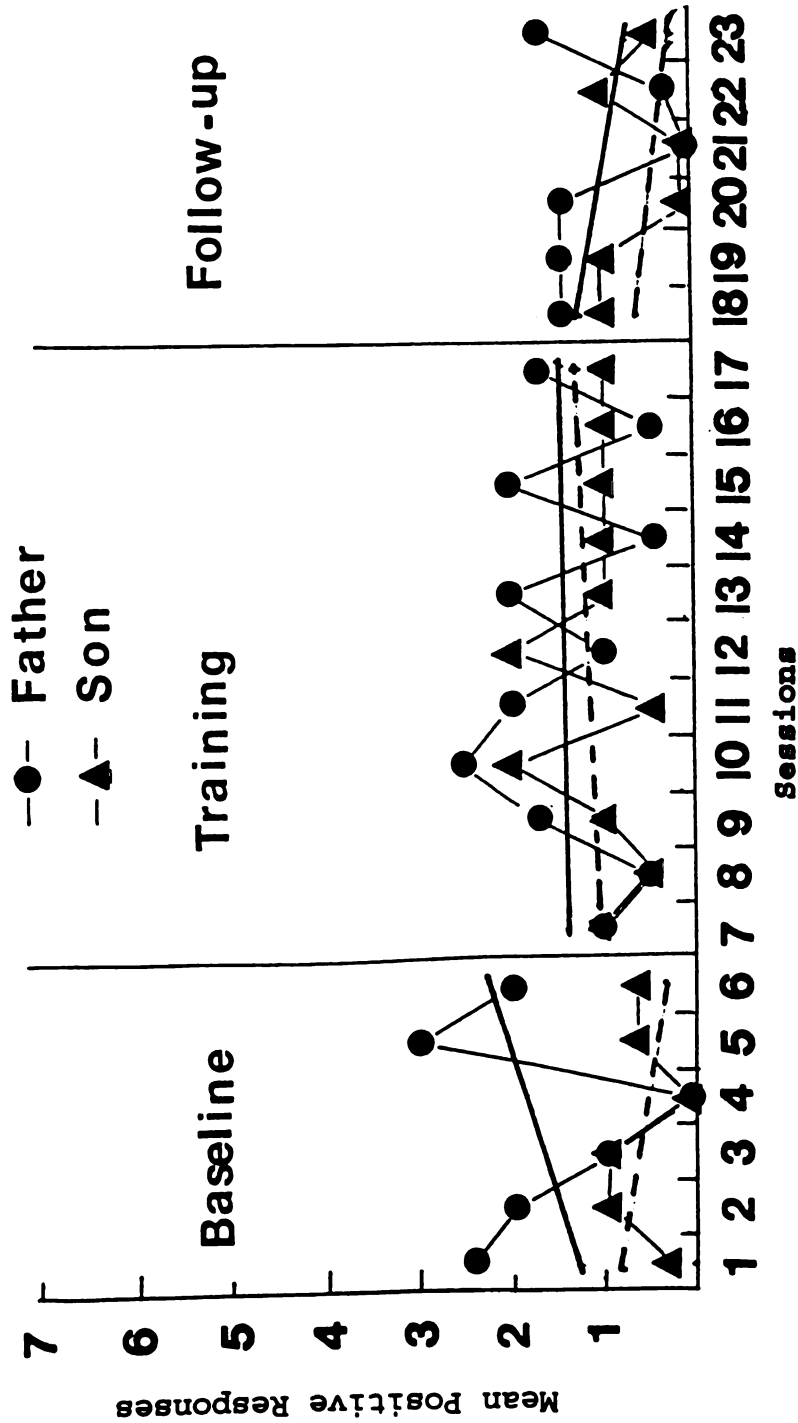
Figure 8. Father and Son B's positive communication responses. The scores are mean scores from two independent raters. The possible maximum score is 7. Three separate regression lines across the three phases are indirectly drawn from the screen image of the computor monitor exhibition obtained by the ITSACORR program.
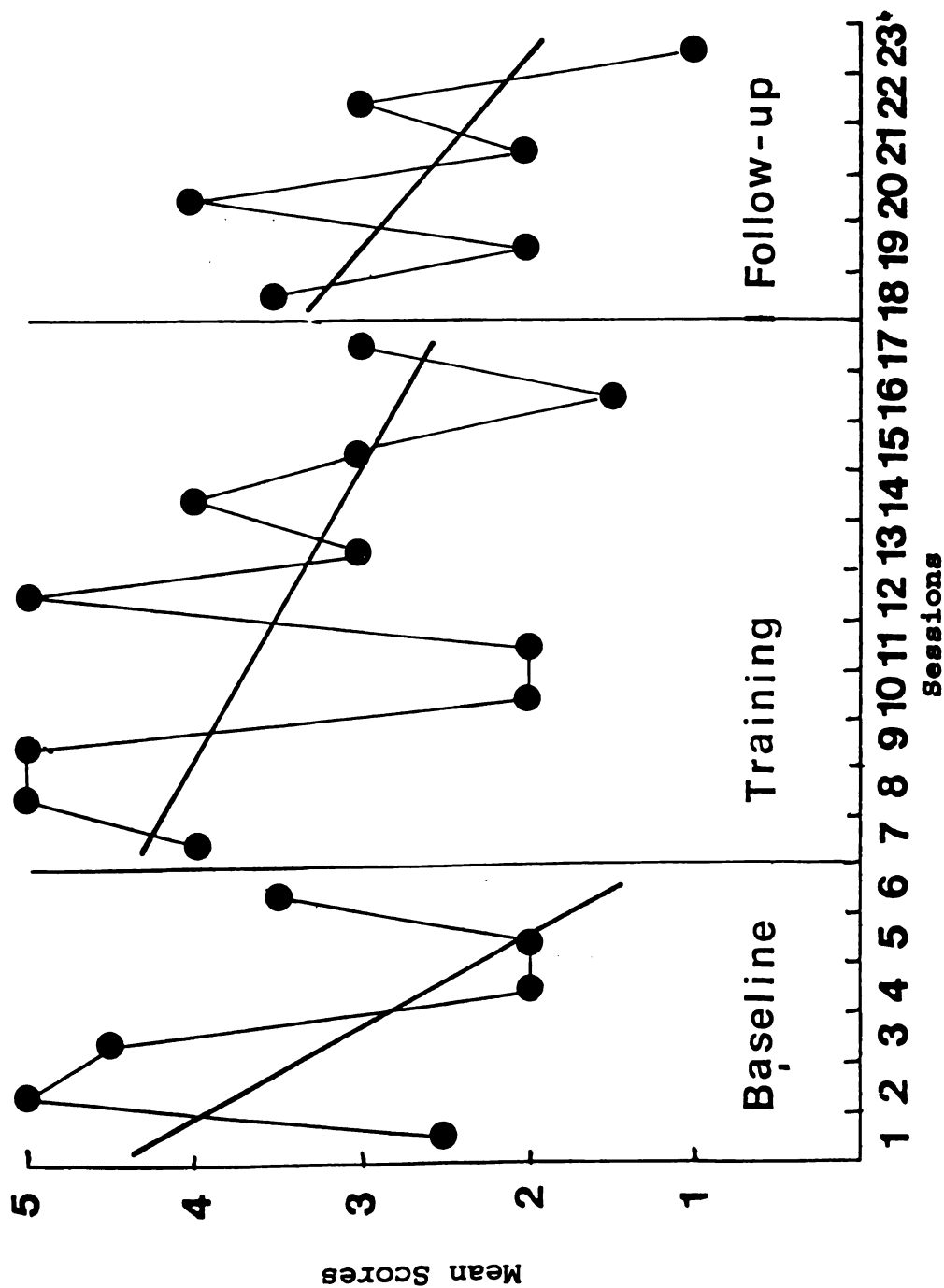
Figure 9. Pair B. Item #33, outcome--degree of resolution of the program being discussed. Five-point Likert-type scale (1 = clear resolution, 5 = no resolution) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.
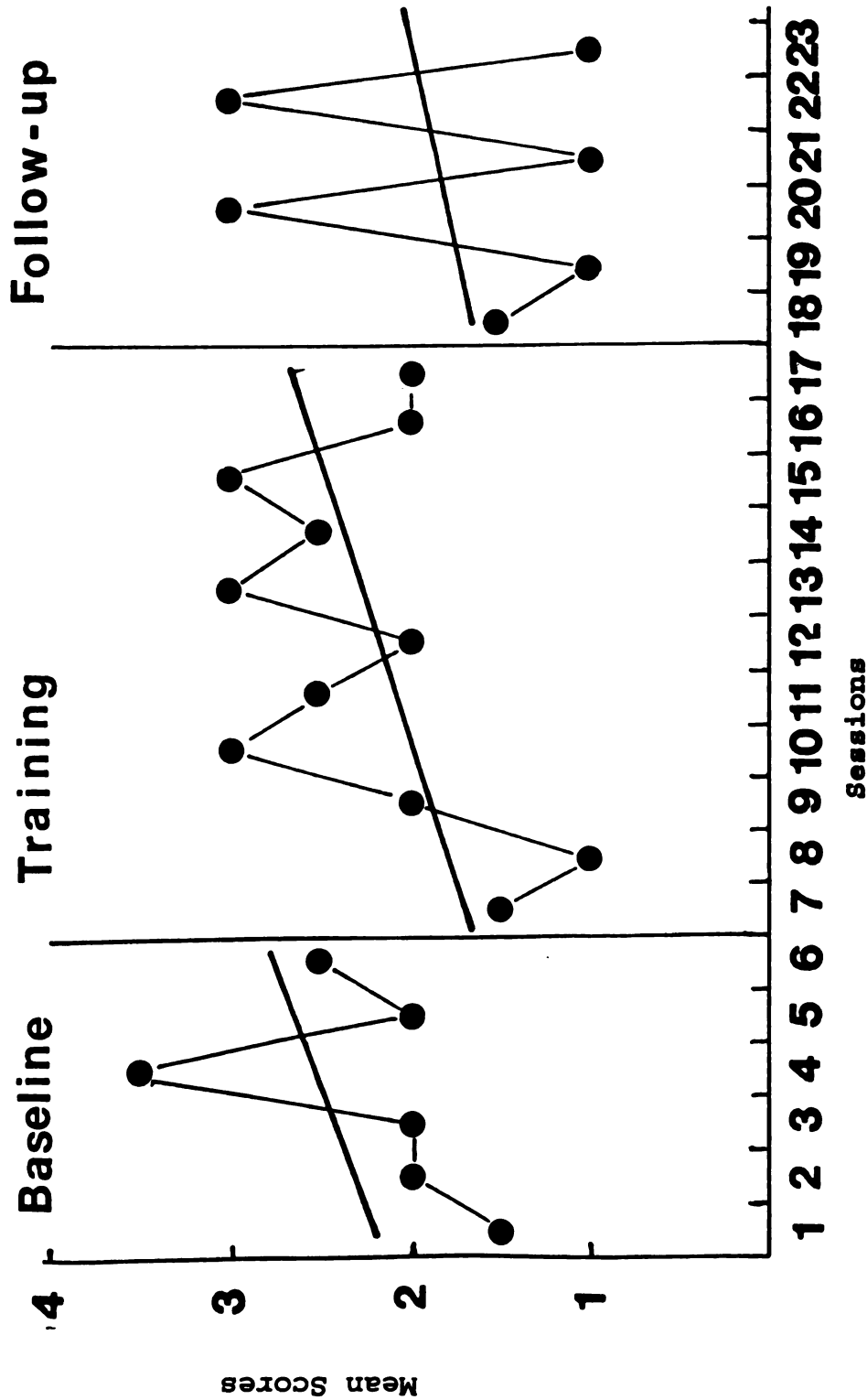
Figure 10. Pair B. Item #34, putting each other down--
degree of belittlement and criticism, taking into account
both members. Four-point Likert-type scale (1 = none,
4 = a lot) is employed. Three separate regression lines
across three phases are indirectly drawn from the screen
image of computer monitor exhibition obtained by the
ITSACORR program.
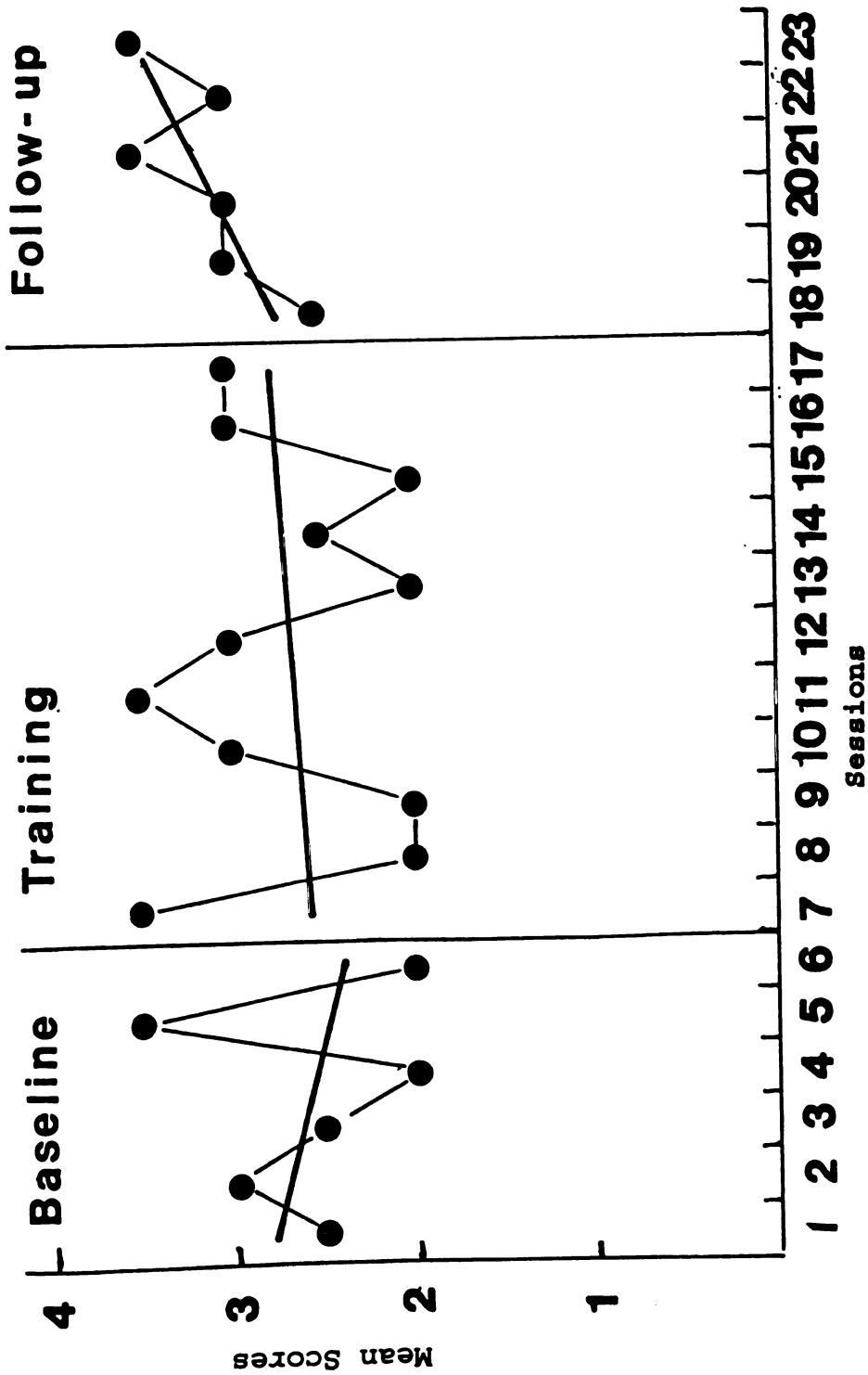
Figure 11. Pair B. Item #35, friendliness--saying nice things to each other, keeping the discussion pleasant for both members. Four-point Likert-type scale (1 = none, 4 = a lot) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of computer monitor exhibition obtained by the ITSACORR program.
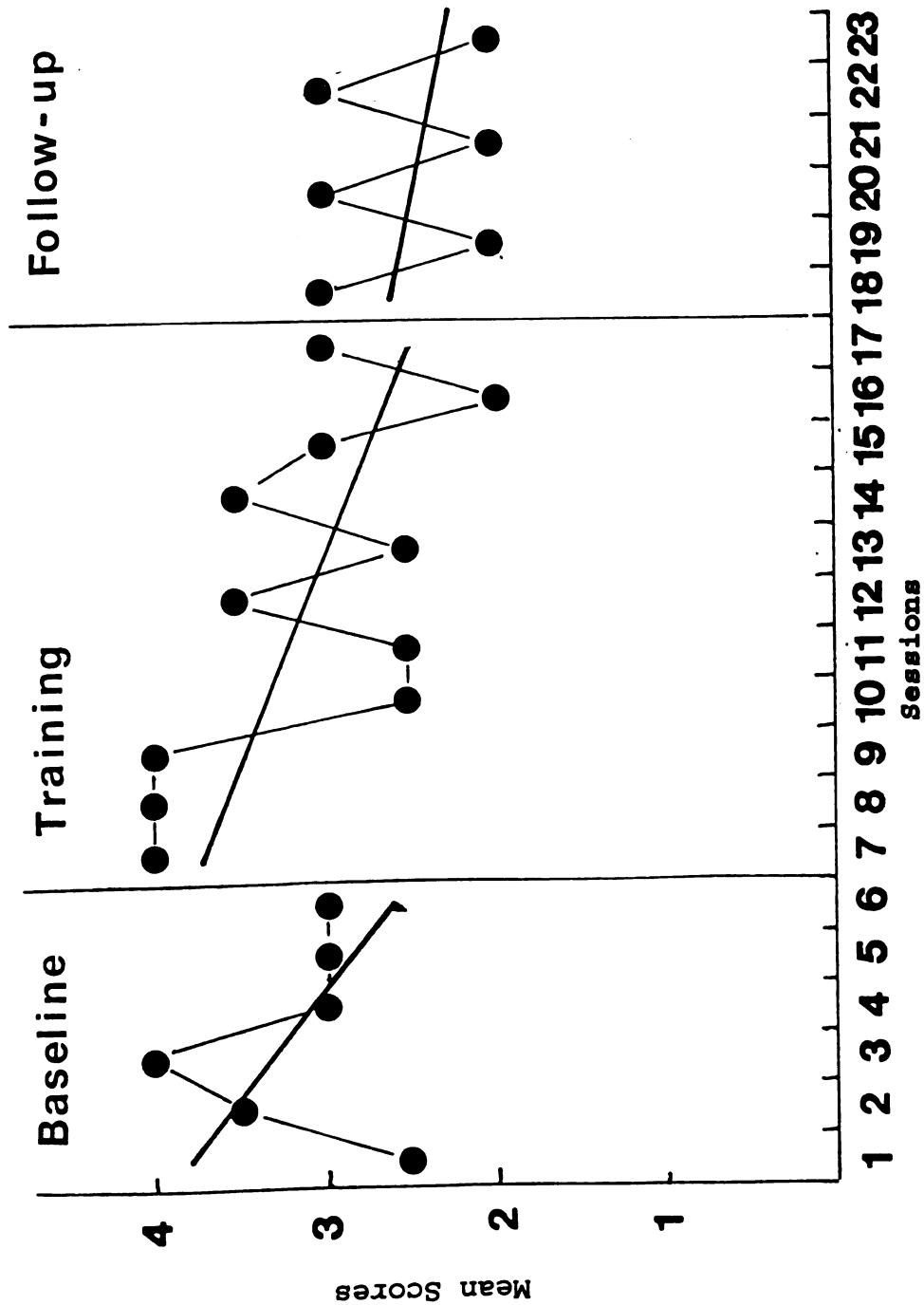
Figure 12. Pair B. Item #36, effectiveness--how effective were the two at solving problems that came up? Four-point Likert-type scale (1 = very effective, 4 = very ineffective) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.

Statistical Analysis

Results of C Statistic

Pair B: Overall Evaluation

The results of the $\underline{C}$ statistic for overall evaluation revealed significant treatment effect across three of the four items (#33, #35, #36). The results of the $\underline{C}$ statistic were very close to the results of the visual inspection, as shown above. For item #33 (Table 12, Figure 9), a very significant treatment effect during the training phase was noticed (Z = -3.51, p < .01, B + T). Figure 9 showed a very strong decelerating trend during the baseline (the line was derived from the ITSACORR program), but the $\underline{C}$ statistic did not reveal any significant trend (Z = .31, n.s.).

For item #35 (Table 14, Figure 11), a significant treatment effect was found latently during the follow-up phase, as indicated by the visual inspection shown above (Z = 1.25, p < .05, PT + F).

For item #36 (Table 15, Figure 12), a very significant treatment effect was shown latently during the follow-up phase (Z = - 2.49, p < .01, PT + F). Although Figure 12 showed a very strong decelerating trend during the baseline phase, the $\underline{C}$ statistic did not (Z = .46, n.s, Baseline, see Table 15).

The Results of Statistical Analysis Using ITSACORR Program

The same procedure used with Pair A was applied here for the data analysis.

Pair B: Father's and Son's Negative Communication Responses

Neither level nor slope change was significant, but the omnibus F test showed a significant change overall (slope and level combined) (F = 3.63, p < .05, see Table 16).

Pair B: Overall Evaluation

For Pair B, no significant effect was found across all items (#33, #34, #35, and #36, see Tables 20 to 23). But the results of the $\underline{C}$ statistic showed significant effects for three out of four items (#33, #35, and #36). Compared with the other two methods, the ITSACORRR method is a more stringent method for assessing the effect of treatment, as was indicated in the case of Pair A (among four items, none of them were significant, see Pair B of Table 24). Interestingly, the visual inspection for item #33 showed a very strong decelerating trend during the baseline phase. (The line was drawn from the ITSACORR program.) The $\underline{C}$ statistic did not reveal any significant trend (Z = .31, n.s.).

Table 25 summarized the effectiveness of treatment using three different methods of data analysis for interpersonal communication skills training.

Table 25

Summary of Effectiveness of Treatment Using Various Kinds of

Method.

(Interpersonal Communication skills Training)

Pair	Method	Negative Response		Positive Response		Overall Evaluation				Y/N
		Dad	Son	Dad	Son	#33	#34	#35	#36	
C	VI	N	N	N	N	N	N	Y(F)	Y(F)	2/6
	C	Y	N	N	Y	Y	N	Y(F)	Y(F)	5/3
	ITSA	Y(m)	N	N	Y(m)	N	N	N	N	2/6
D	VI	N	N	N	N	Y	Y	N	Y	3/5
	C	Y	N	N	Y	N	Y	N	Y(F)	4/4
	ITSA	N	N	N	Y	N	Y	N	N	2/6

Note. Methods: VI = Visual Inspection

Visual inspection should be done first before the other two results are filled in this format in order to avoid the influence from the other two results.

C = the C statistic

ITSA = ITSACORR Analysis

Voting: Y = A significant treatment effect was found at alpha level of .05 or .01.

N = Not significant effect was found

(m) = moderate significant effect was found at alpha level of .10

(F) = Follow-up

Y/N = The ratio of Y or N (Voting rate)

Visual Inspection

In this section, the results of visual inspection and the statistical analysis for Pair C and Pair D will be presented in the same way as that for Pair A and Pair B. Both Pair C and Pair D have received the interpersonal communication skills training.

Pair C: Father's and Son's Negative Communication Responses

Results obtained for Pair C are shown in Tables 4, 5, and 7. Figures 13 through 18 are based on Tables 4, 5, and 7. For the father's negative communication responses, the means and standard deviation within the three different conditions were: mean = 5.42 , SD = 1.14 for the baseline phase; 3.27, 1.0 for the intervention phase; and 2.58, 1.24 for the follow-up phase (see Appendix A). For the son's negative communication responses, the means and standard deviations were: mean = 2.63, SD = .61 for the baseline phase; 1.68, .94 for the intervention phase; and .67, .52 for the follow-up phase (see Appendix B).

For Father C, Figure 13 showed no significant effect was found during the intervention or follow-up phases.

For Son C, the means and standard deviations within the three different conditions were: mean = 2.63, SD = .61 for the baseline; 1.68, .94 for the treatment; and .67, .52 for the follow-up phase (see Appendix B). For Son C, Figure 13 also shows the same pattern as Father C, but with lower

points than the father's. During the baseline, a very
stable trend with no level change was noticed. However,
during the intervention phase, an unstable but decelerating
trend was present. During the follow-up phase, a very
stable downward trend was observed. A significant treatment
effect was found during the follow-up phase.

Pair C: Overall Evaluation

Figure 15 (item #33), which covers outcome, revealed no
significant level and trend changes during the baseline and
treatment phases. Most of the data points between the
baseline and treatment phases overlapped. But during the
follow-up phase, a significant latent effect was found. The
line for the follow-up phase was drawn by the ITSACORR.
This researcher found that the computer program produced an
unexpected type of regression line for the follow-up phase.
This kind of phenomenon was found for Pair C (the son's
positive responses, Figure 14). The researcher sought a
further clarification through personal communication (i.e.,
e-mail).
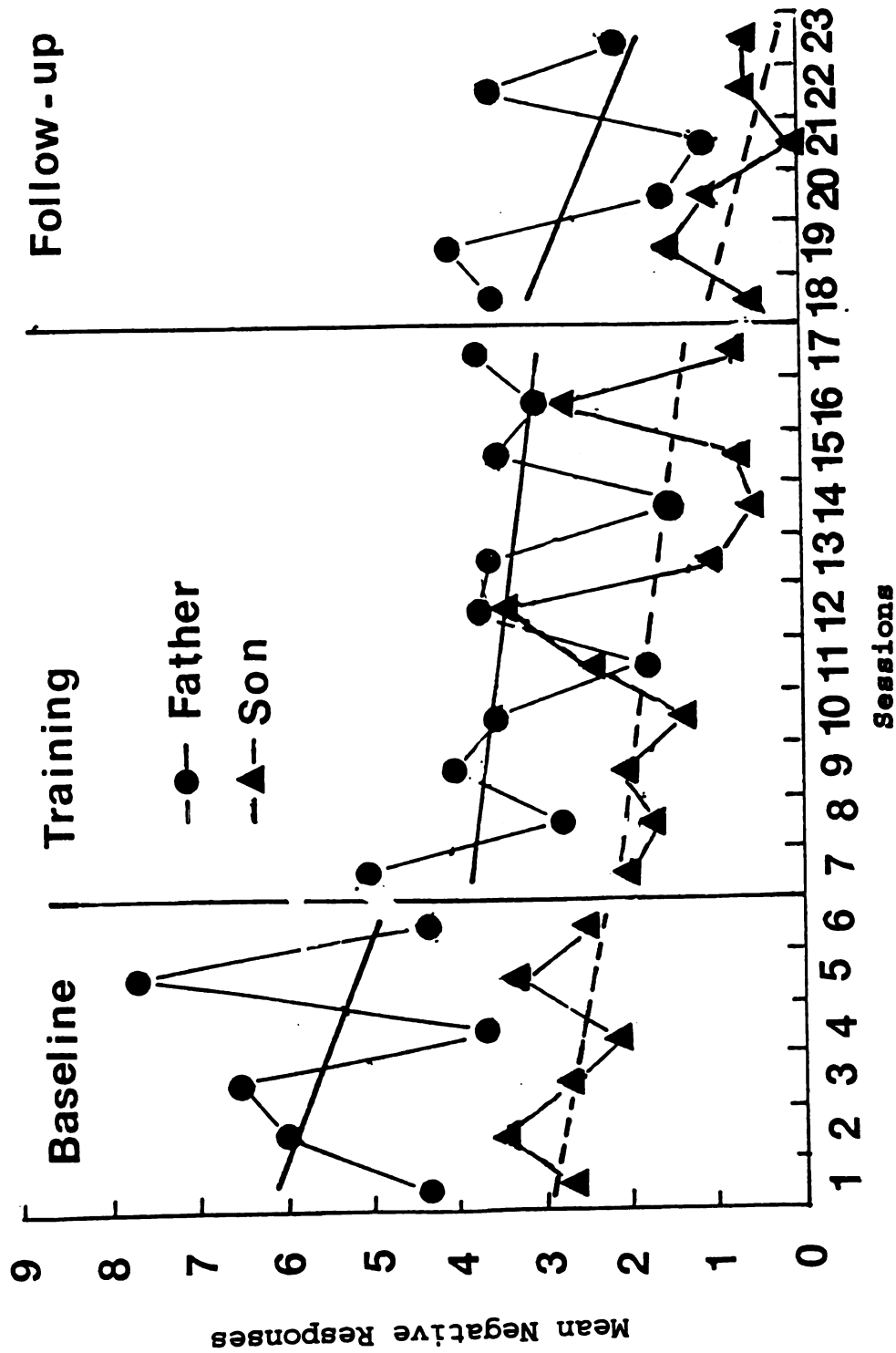
Figure 13. Pair C. Father and Son C's negative
communication responses. The scores are mean scores from
two independent raters. The possible maximum score is 25.
Three separate regression lines across the three phases are
indirectly drawn from the screen image of computer monitor
obtained by the ITSACORR program.
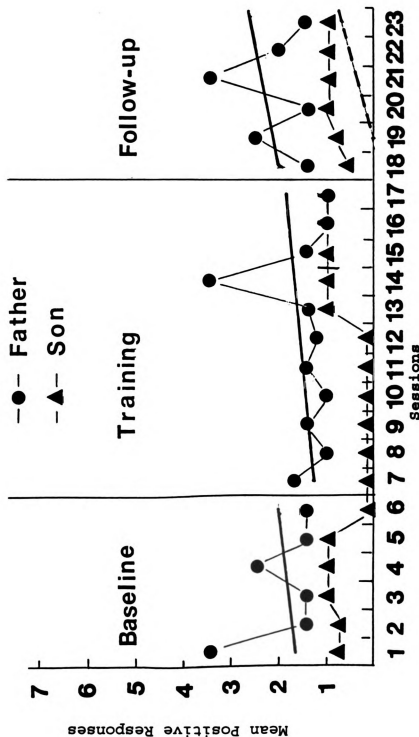
Figure 14. Father and Son A's positive communication responses. The scores are mean scores from two independent raters. The possible maximum score is 7. Three separate regression lines across the three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.
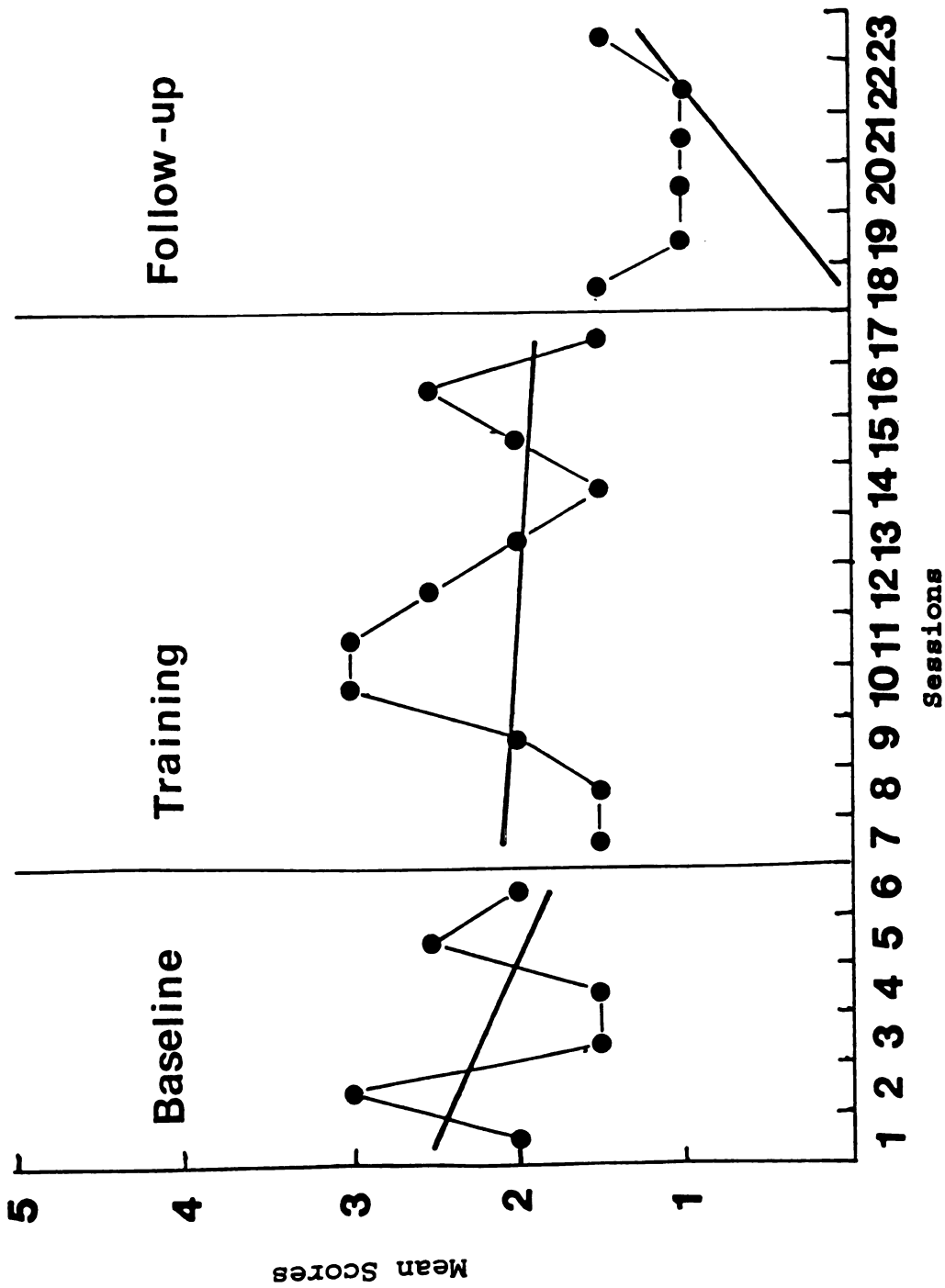
Figure 15. Pair C. Item #33, outcome--degree of resolution of the program being discussed. Five-point Likert-type scale (1 = clear resolution, 5 = no resolution) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.
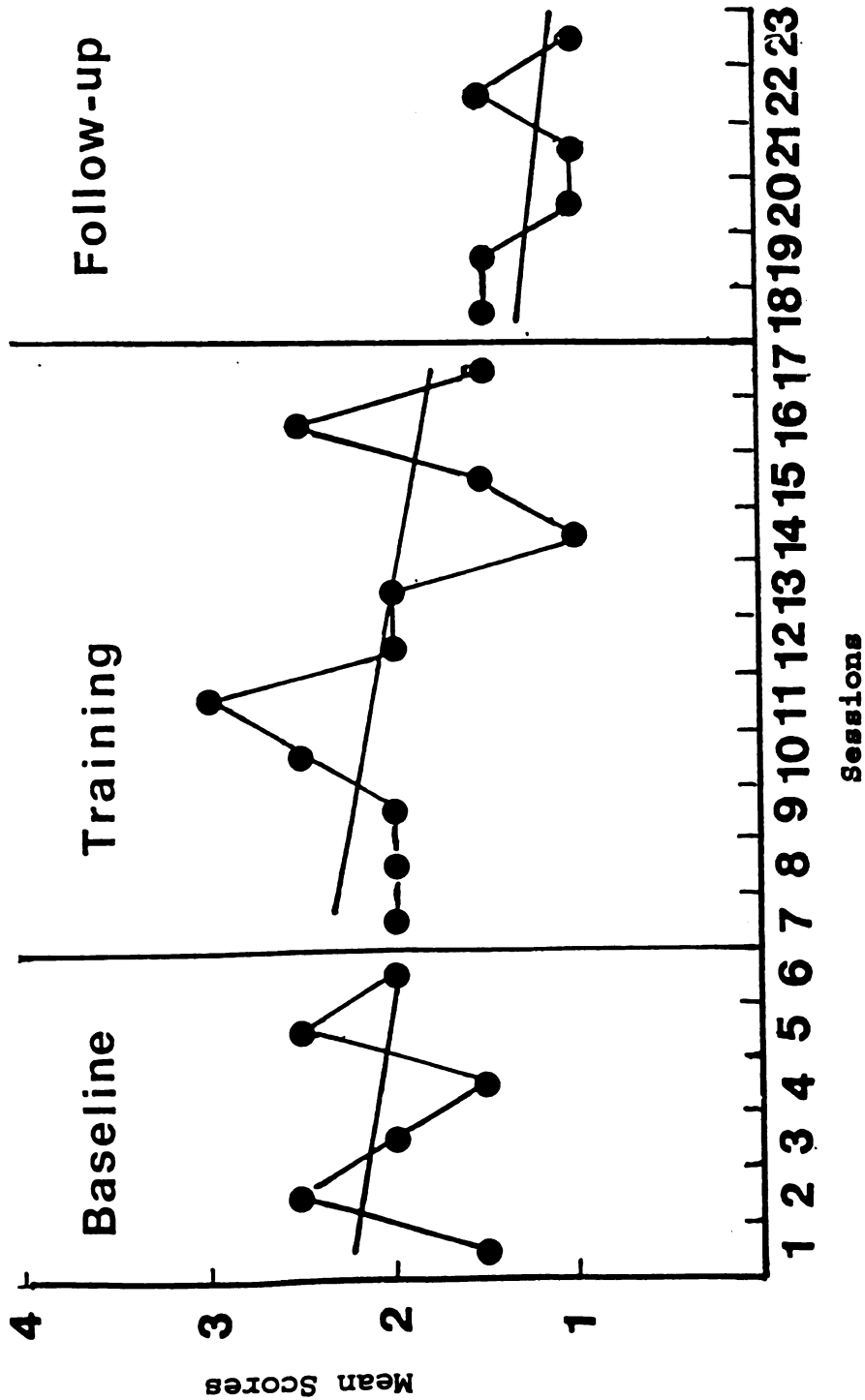
Figure 16. Pair C. Item #34, putting each other down--
degree of belittlement and criticism, taking into account
both members. Four-point Likert-type scale (1 = none,
4 = a lot) is employed. Three separate regression lines
across three phases are indirectly drawn from the screen
image of the computer monitor exhibition obtained by the
ITSACORR program.
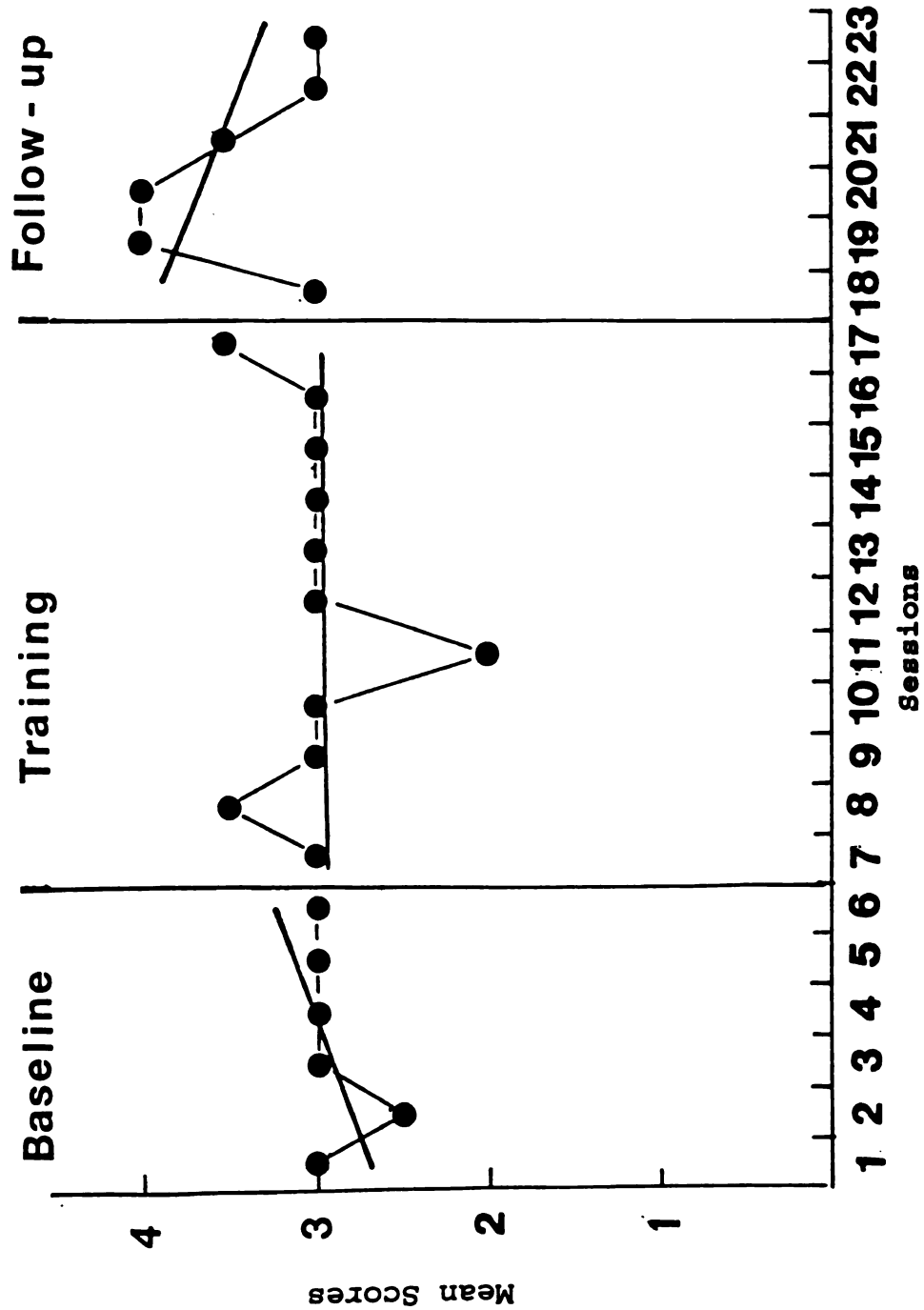
Figure 17. Pair C. Item #35, friendliness--saying nice things to each other, keeping the discussion pleasant for both members. Four-point Likert-type scale (1 = none, 4 = a lot) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.
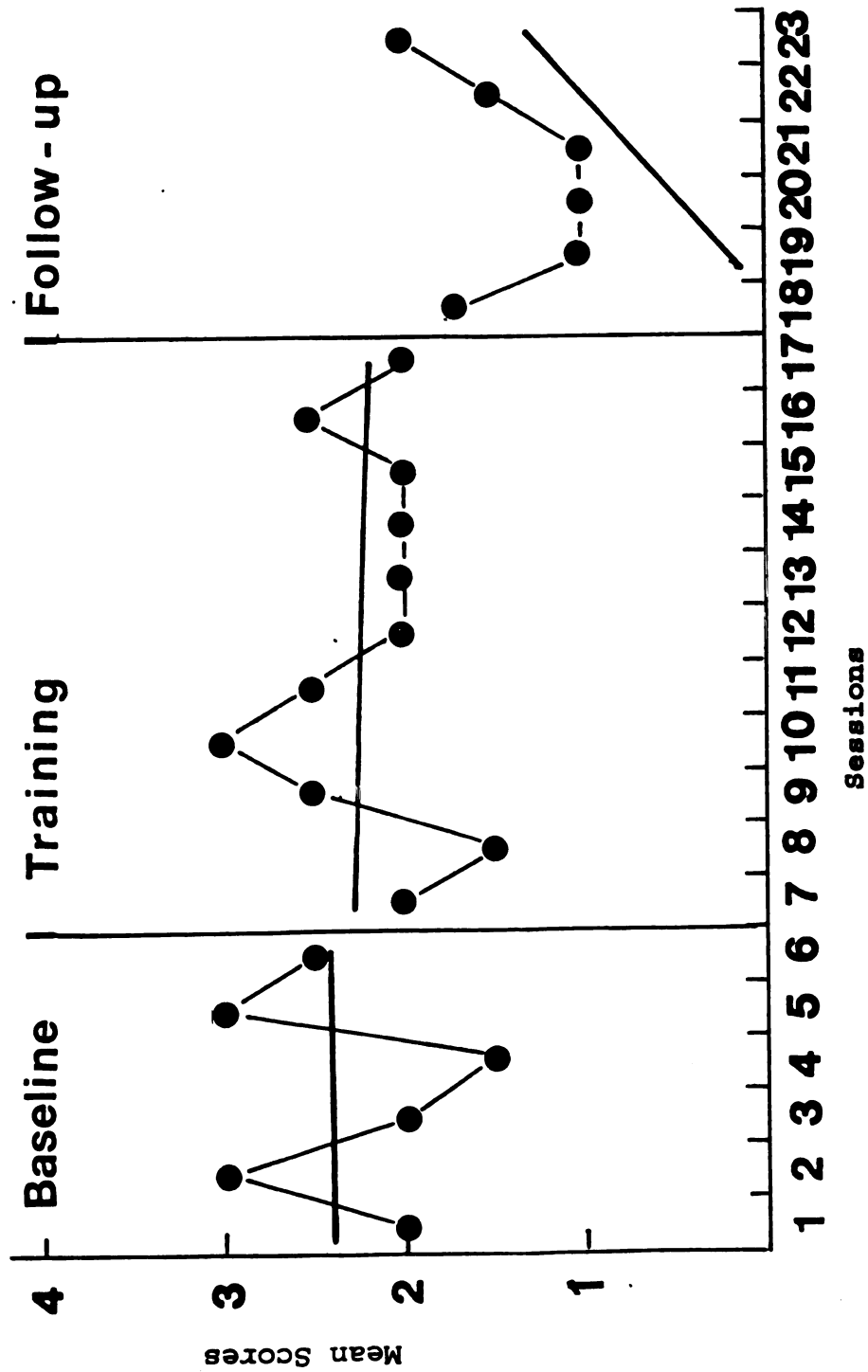
Figure 18. Pair C. Item #36, effectiveness--how effective
were the two at solving problems that came up? Four-point
Likert-type scale (1 = very effective, 4 = very ineffective)
is employed. Three separate regression lines across three
phases are indirectly drawn from the screen image of the
computer monitor exhibition obtained by the ITSACORR
program.

Figure 16 (item #34), which relates to putting each other down, showed a stable trend during the baseline phase. During the treatment phase an unstable, but moderate decelerating trend was present. No significant treatment effect was found during the treatment phase. During the follow-up phase, there was a stable trend that showed a latent treatment effect.

Figure 17 (item #35), which covers friendliness, showed a moderately stable trend across all three phases. No significant treatment effect was found. But during the follow-up phase, a moderately significant latent treatment effect was noticed.

Figure 18 (item #36), which deals with effectiveness, revealed no significant change in level or trend during the baseline and the intervention phase. During the follow-up phase, a moderate treatment effect was noticed, but at the end of two sessions (22nd and 23rd), a decelerating trend was found (1 = very effective, 4 = very ineffective).

Statistical Analysis

Results of C Statistic

Pair C: Father's and Son's Negative Communication Responses

The father's negative communication responses (Table 8) showed a significant treatment effect during the treatment phase ($Z = 1.96$, $p < .05$). No significant trend

change appeared during the baseline and follow-up phases. According to Figure 13, however, a very strong decelerating trend appeared during the baseline and follow-up phases.

Pair C: Overall Evaluation

Table 12 (item #33), which relats to outcome, showed a significant treatment effect during the intervention phase (Z = -5.84, p < .01, B + T). During the follow-up phase, a significant effect was found (Z = 4.94, p < .01, PT + F). According to Figure 15, however, it revealed no significant changes in trend or level during the treatment phase. Most data overlapped between the two phases. This requires a further investigation.

Table 14 (item #35, friendliness) revealed a significant effect during the follow-up phase (Z = 2.25, p < .05, PT + F) but not during the treatment phase.

Table 15 (item #36, effectiveness) showed significant effect during the follow-up phase (Z = 4.27, p < .01, PT + F) but not during the treatment phase.

The Results of Statistical Analysis Using ITSACORR Program

Pair C: Father's and Son's Negative Communication Responses

For Father C's negative responses, Table 16 showed no significant treatment effect during the intervention and follow-up phases. A moderate level change was found during

the treatment phase (p < .05), but no change is observed in slope or on the overall omnibus F test.

Pair C: Overall Evaluation

No significant treatment effect was found across all items (#33, #34, #35, and #36).

In summary, the so-called "voting" method gives an idea of how to synthesize the test results in order to interpret. The results of the "eyeballing" test and the $\underline{C}$ statistic agreed on item #33 and #36; that is, both results showed a significant effect during the follow-up phases only, but not during the intervention phase. The three tests (VI, C, and ITSA) agreed on three occasions (Son C's negative responses, Father C's positive responses, and item #34). All revealed no significant treatment on these occasions (see Table 24). For Pair C, the VI and the ITSA were the most stringent (i.e., the Y/N ratio was 2/6) compared with the $\underline{C}$ (the Y/N ratio was 5/3). According to the results of the $\underline{C}$ and the ITSA tests, Father C improved on the negative communication responses. But the results on Son C's positive responses were negligible, because there was no clinical or social significance attached to the change found.

Table 20

Summary of Statistical Analysis Using ITSACORR

Overall Evaluation

#33.   Outcome, Degree of Resolution of Problem

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	2.60	3.50	.10	.20	.90	.23	1.82	.20
	2	4.14	9.05		- .09	-1.35			
B	1	5.23	3.44	.72	- .57	-1.27	.43	1.21	.33
	2	4.54	4.90		- .18	-1.36			
C	1	2.51	2.58	.79	- .12	- .42	.73	.08	.92
	2	2.17	3.67		- .02	- .18			
D	1	3.59	3.50	.25	- .35	-1.16	.25	1.37	.29
	2	2.05	3.35		.16	1.70			

Note. * = Significant level at p < .05 or p < .01

Table 21

Overall Evaluation Using ITSACORR

#34   Putting Each Other Down--Belittlement, and Criticism

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	2.30	4.64	.09	.32	.22	.77	3.81	.05*
	2	1.12	4.00		- .02	- .33			
B	1	2.21	2.68	.62	.07	.28	.97	.73	.50
	2	1.71	3.37		.08	1.08			
C	1	2.24	4.21	.94	- .05	- .30	.97	.18	.84
	2	2.29	6.97		- .04	- .83			
D	1	1.54	2.84	.09	.03	.20	.24	4.42	.04*
	2	2.74	8.05		- .18	-3.62			

Note. * = Significant level at p < .05 or p < .01

Table 22

Summary of Statistical Analysis Using ITSACORR

#35   Friendliness

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	2.48	4.59	.91	- .09	- .58	.44	.62	.55
	2	2.56	7.67		.04	.86			
B	1	2.77	5.71	.82	- .05	- .37	.69	.09	.91
	2	2.66	8.82		.01	.20			
C	1	2.60	6.21	.48	.10	.80	.46	.29	.75
	2	2.95	11.44		.00	.02			
D	1	2.54	4.92	.66	.16	1.00	.37	.65	.54
	2	2.83	8.85		.00	.09			

Note.   * = Significant level at p < .05 or p < .01

Table 23

Overall Evaluation Using ITSACORR

#36   Effectiveness of Problem-Solving

Pair	Phase	Level	t(12)	p	Slope	t(12)	p	Overall F(2, 12)	p
A	1	3.44	5.60	.81	- .06	- .33	.78	.05	.96
	2	3.27	8.62		- .01	- .11			
B	1	3.98	6.28	1.50	- .22	-1.15	.66	1.50	.26
	2	3.92	10.04		- .45	-2.24			
C	1	2.39	4.44	.75	.00	.01	.99	.10	.90
	2	2.18	6.57		.00	.00			
D	1	3.77	5.28	.28	- .23	-1.12	.14	1.29	.31
	2	2.66	6.40		.10	1.72			

Note.   * = Significant level at p < .05 or p < .01

Visual Inspection

Finally, the results of Pair D were presented in the same manner as the three other pairs. Figures 19 to 24 and Tables 4, 5, and 7 were used in this section for Pair D.

Pair D: Overall Evaluation

Figure 21 (item #33), which is connected with the outcome, revealed a strong unstable decelerating trend during the baseline phase with the score range, 1.5 to 4 (mean = 3, SD = .45). During the treatment phase, there was an accelerating trend, almost reaching the ceiling with a score range of 1.5 to 4.5 (mean = 3, SD = .87).

During the follow-up phase, almost the same trend was kept as in the trend of the treatment phase, but it was unstable. There was no level change between conditions. A significant treatment effect was noticed.

Figure 22 (item #34), which relates to putting each other down, shows a stable trend during the baseline. During the treatment phase, a strong unstable trend was noticed in the introduction of the treatment, but in the last half of the sessions it reached the floor (from 3 to 1 where 4 is substantial and 1 is none). During the follow-up phase, a very unstable trend was noticed. A significant treatment effect was found.
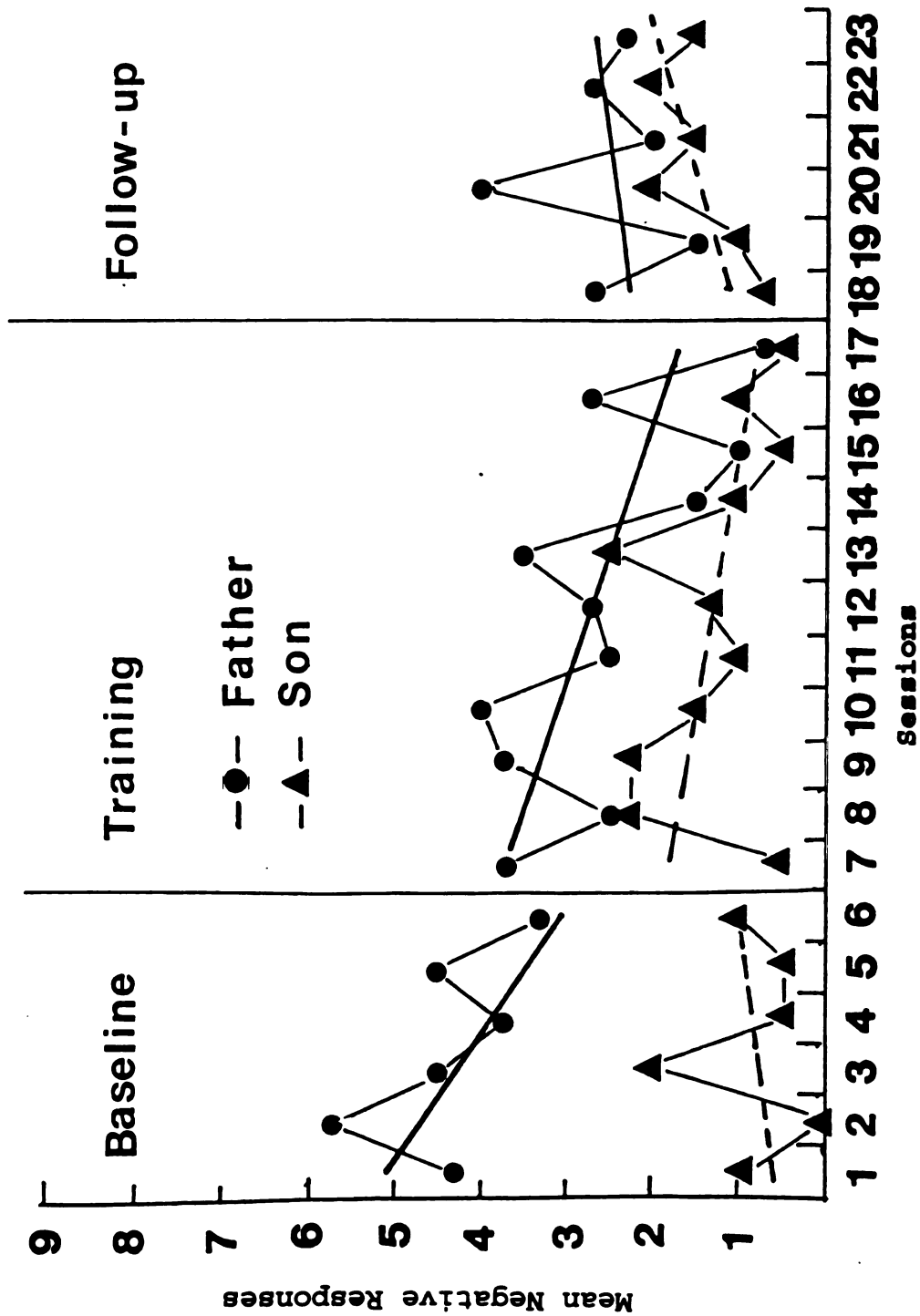
Figure 19. Father and Son D's negative communication responses. The scores are mean scores from two independent raters. The possible maximum score is 25. Three separate regression lines across the three phases are indirectly drawn from the screen image of the computer monitor obtained by the ITSACORR program.
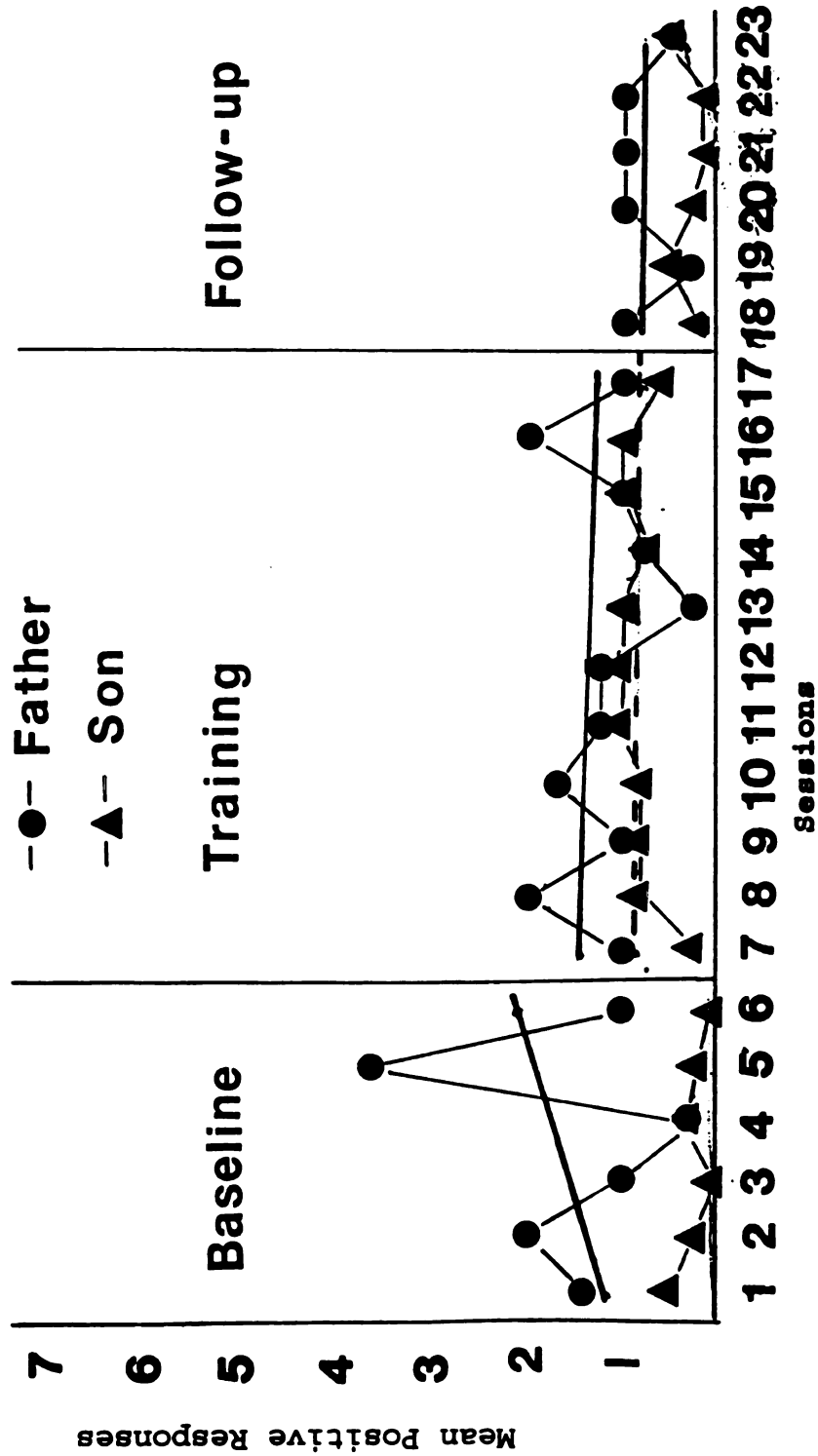
Figure 20. Father and Son D's positive communication responses. The scores are mean scores from two independent raters. The possible maximum score is 7. Three separate regression lines across the three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.
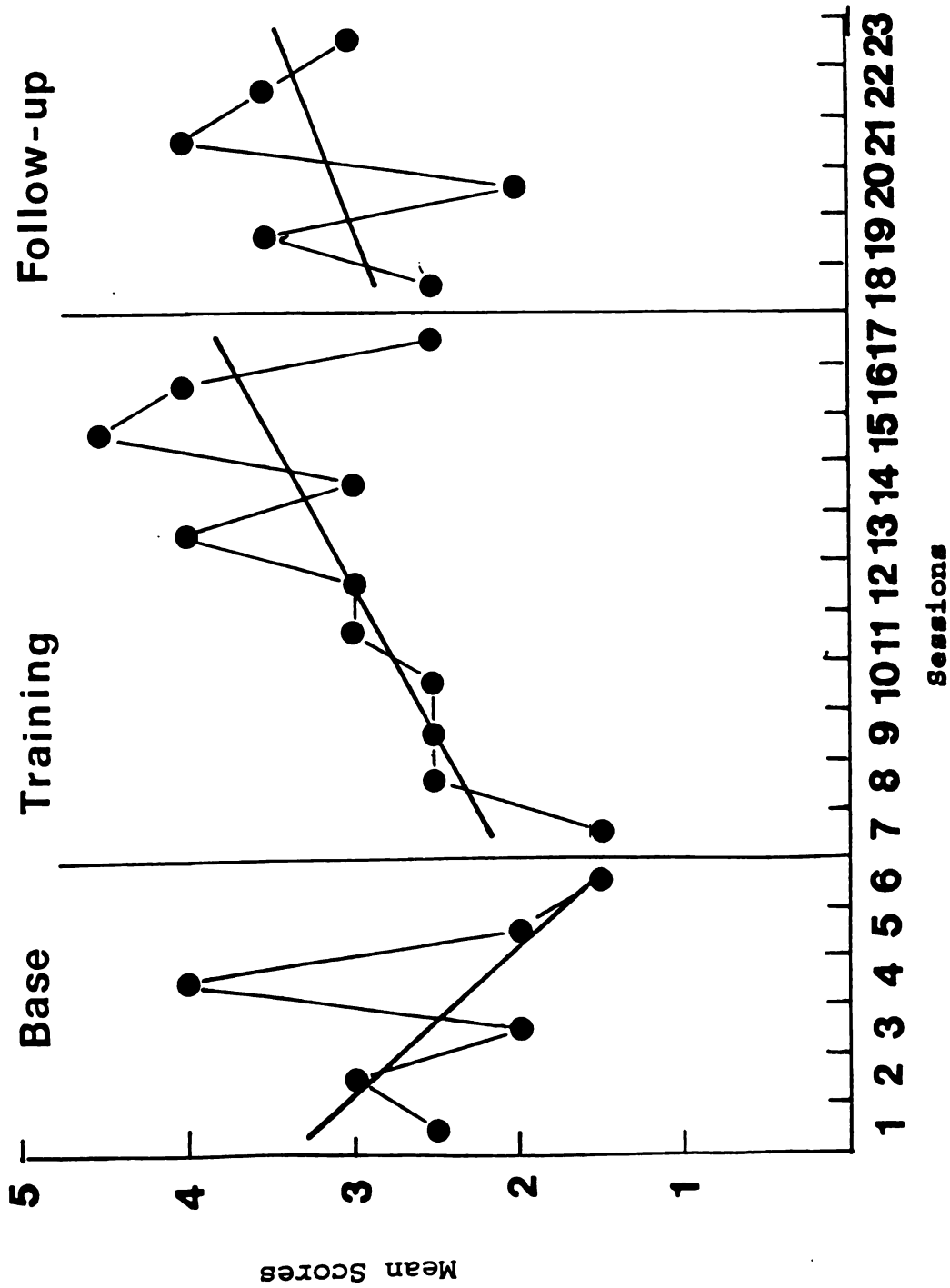
Figure 21. Pair D. Item #33, outcome--degree of resolution of the program being discussed. Five-point Likert-type scale (1 = clear resolution, 5 = no resolution) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.
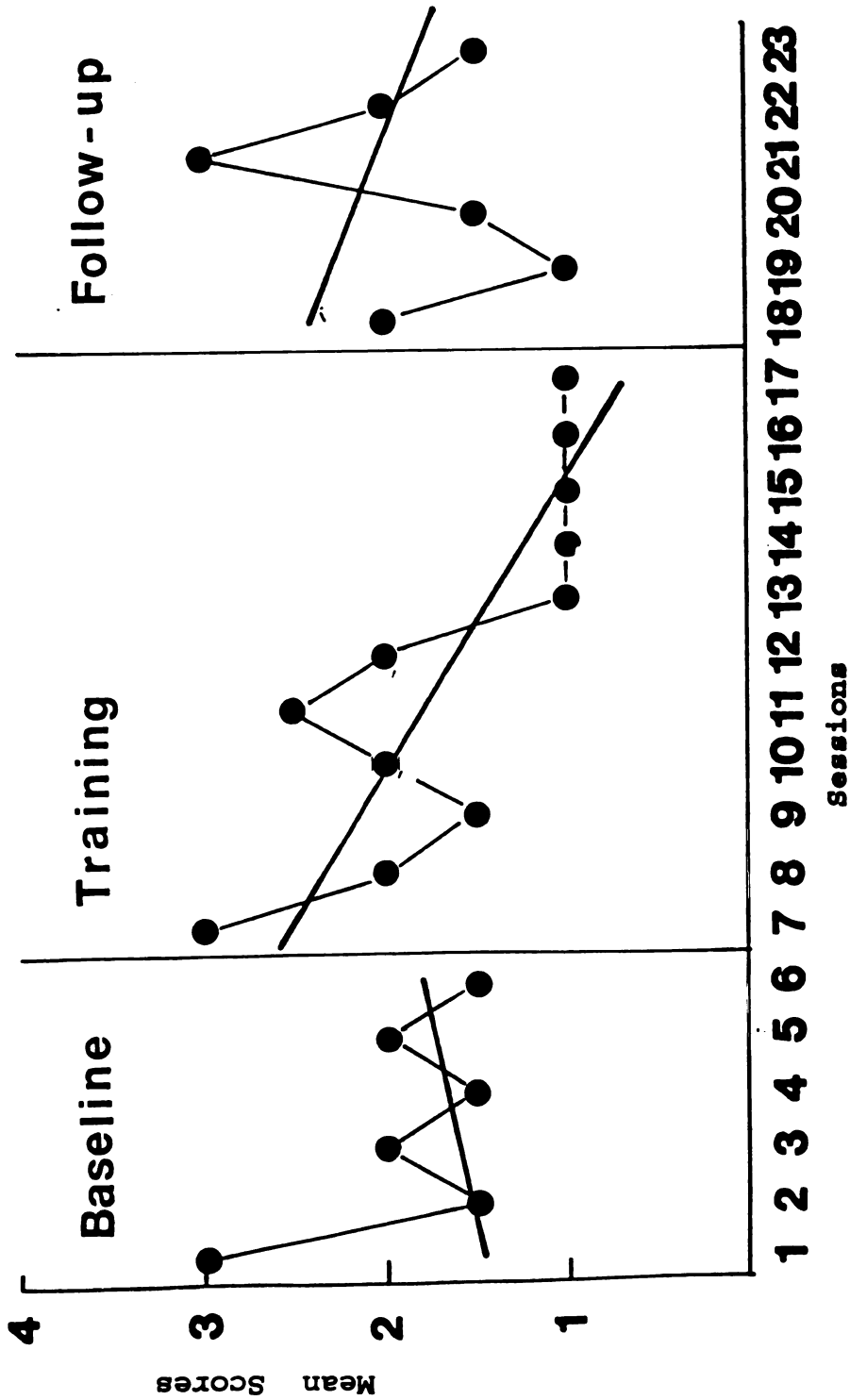
Figure 22. Pair D. Item #34, putting each other down--
degree of belittlement and criticism, taking into account
both members. Four-point Likert-type scale (1 = none,
4 = a lot) is employed. Three separate regression lines
across three phases are indirectly drawn from the screen
image of computer monitor exhibition obtained by the
ITSACORR program.
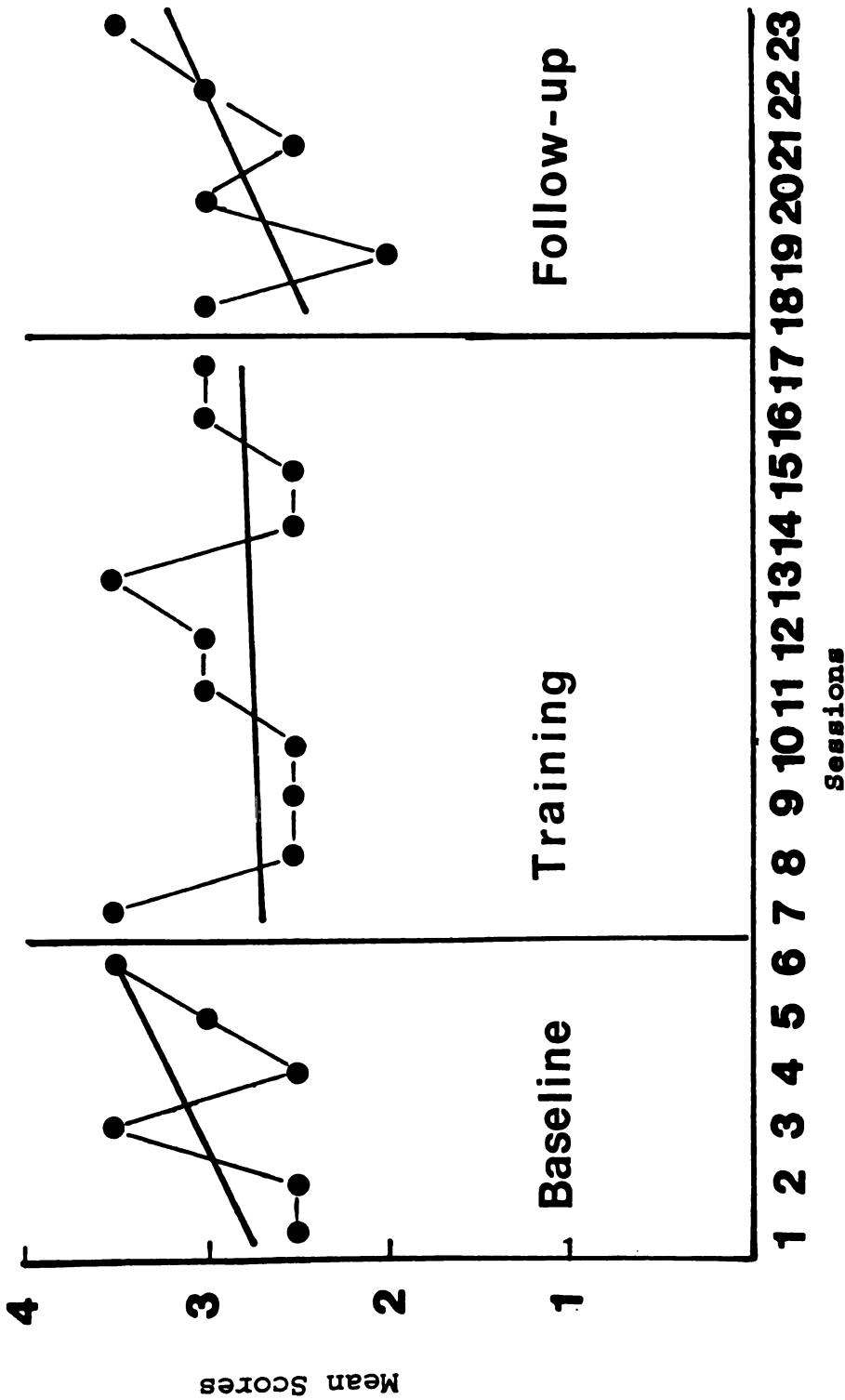
Figure 23. Pair D. Item #35, friendliness--saying nice things to each other, keeping the discussion pleasant for both members. Four-point Likert-type scale (1 = none, 4 = a lot) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.
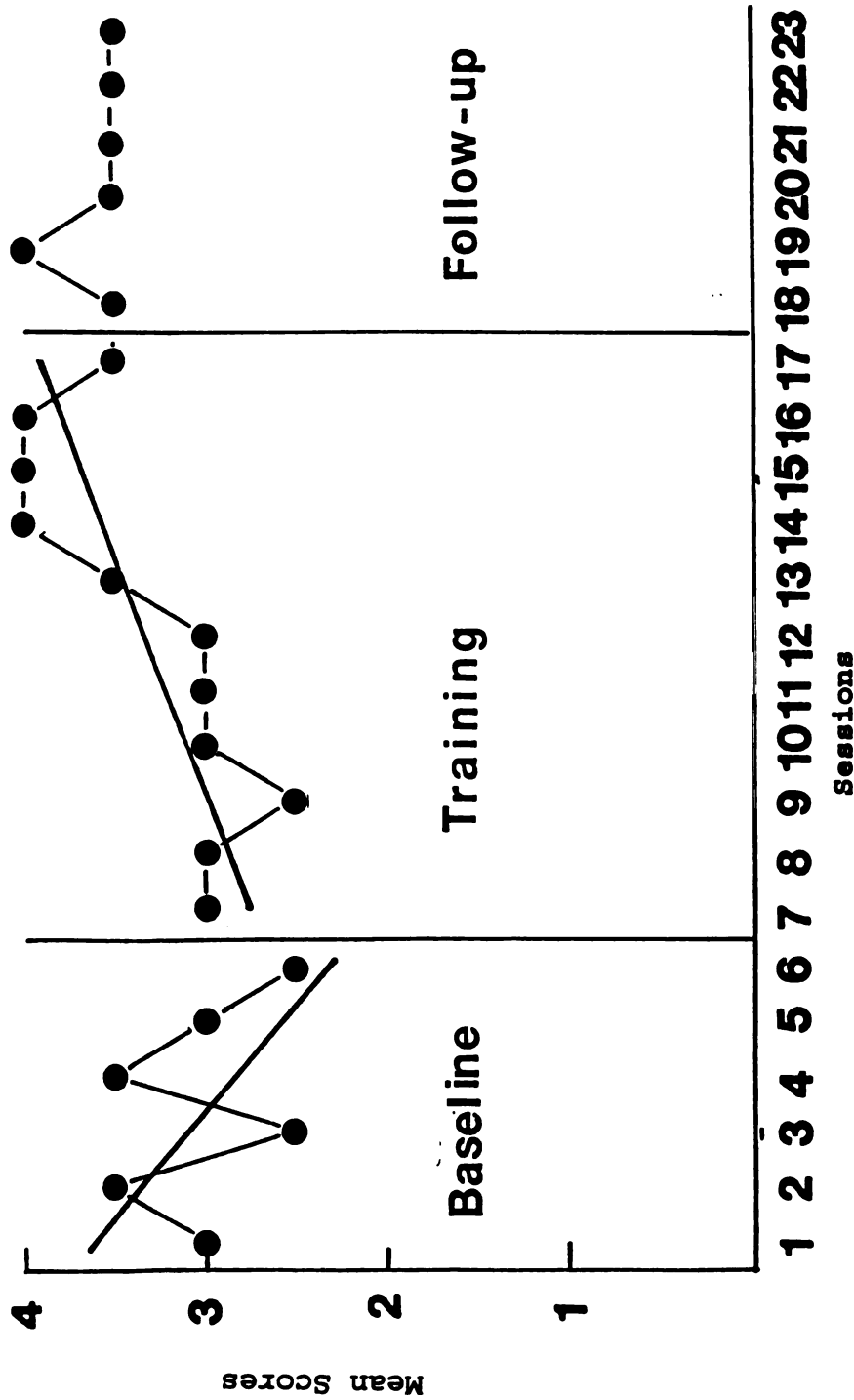
Figure 24. Pair D. Item #36, effectiveness--how effective were the two at solving problems that came up? Four-point Likert-type scale (1 = very effective, 4 = very ineffective) is employed. Three separate regression lines across three phases are indirectly drawn from the screen image of the computer monitor exhibition obtained by the ITSACORR program.

Figure 24 (item #36), which relates to effectiveness, shows a downward trend during the baseline. During the treatment phase, a stable accelerating trend was found and the status (reaching the ceiling) was maintained during the follow-up. A significant treatment effect was found.

Statistical Analysis

Results of C Statistic

Pair D: Father's and Son's Negative Communication Responses

For Father D, a significant treatment effect was found during the intervention phase (Z = 2.47, p < .01) and during the follow-up (Z = - 1.78, p < .05). During the baseline phase, no trend was found by the $\underline{C}$ statistic.

For Son D, no significant treatment effect was noticed. Interestingly, the average scores during the treatment and the follow-up phases was higher than during the baseline phase (mean = .83, SD = .68 for the baseline, 1.30, .74 for the treatment, and 1.49, .51 for the follow-up). It was a decelerating (countertherapeutic) effect of treatment. But in reality it could happen, because the son's involvement increased as the sessions progressed. That was a possible reason why Son D's score of negative responses were getting higher, but not in a statistically or clinically significant way (actually no significant effect was found by statistical

analysis). First of all, it could be a therapeutic or an educational goal to increase the frequency of responses of Son D in any direction (i.e., non-judgmental acceptance), then direct the counseling in the desirable direction (or growth will occur naturally in a Rogerian sense).

Pair D: Father's and Son's Positive Communication Responses

For Father D, no treatment effect was found (see Figure 20 and Table 10).

For Son D, Table 11 showed a significant treatment effect during the intervention and follow-up phases. But such a statistical decision was meaningless for clinical or practical purposes, because reviewing the data points that Son D obtained was not a treatment goal. The scores remained at floor level (hitting the bottom), not increasing as was desired (no improvement).

Without a visual inspection of the demographic data and the "behavior" of data points in the plot, one might draw the wrong conclusion that "there was a significant treatment effect during the treatment and the follow-up phase at p < .01," thus is allowing a Type I error. It would be better to search out the meaning of the data with the "eyeballing" test method.

Pair D: Overall Evaluation

The results of the C statistical analysis showed significant treatment effects for items #34 and #36 ($Z = 1.73$, $p < .05$, B + T, for #34; $Z = - 2.50$, $p < .01$, PT + F, for #36) but not for #33 and #35. The results of visual inspection also were congruent with these results (see Table 24).

The Results of Statistical Analysis using ITSACORR Program

Pair D: Overall Evaluation

Only one item (#34) had a significant treatment effect ($F = 4.42$, $p < .05$); all the others revealed no significant effect (see Tables 20 to 23).

In summary, the following three different methods of data analysis were employed: (a) visual inspection, (b) C statistic, and (c) ITSACORR program. The results of data analysis were summarized as a form of "voting methods." Of the three methods, the ITSACORR program produced the most stringent results with these particular sets of data, while the C statistic results were the least stringent. In the next chapter these findings are addressed in considerable detail.

CHAPTER 4

DISCUSSION

Summary

     The purpose of this study was to design and evaluate a
model to enhance the relationship between immigrant Korean
fathers and their adolescents in the metropolitan areas of
the United States. The model was based on the parent-
adolescent relationship that is the vehicle for change in
both parent and adolescent through democratic interaction.
Two modes of skills training were employed: (a) social
problem-solving skills training (SPSS), and (b)
interpersonal communication skills training (ICS). SPSS
consisted of the following skill components: (a) defining an
issue or interpersonal problem in terms of a goal or an
objective, (b) generating possible alternatives (brain
storming), (c) selecting the best possible solution, (d)
planning a strategy to meet the goal or objective, (e)
implementing in reality (doing homework), and (f) evaluating
the results and feedback.
     ICS included the following skill components: (a)

attentive listening and relational empathy, (b) reporting one's own feelings, (c) self-disclosing, (d) paraphrasing, and (e) giving and receiving feedback.

Four Korean immigrant fathers and their four Korean American adolescents (boys) who were living in New York City participated in this study. An ABA single-subject quasi-experimental design was employed. Two pairs were assigned to SPSS and the other two to ICS. The four pairs received six sessions for baseline observation, 11 sessions for training, and six sessions for follow-up observation.

As a dependent measure, the <u>Interaction Behavior Code</u> (IBC) was used to code 10-minute segment videotape for 23 sessions. Two trained independent raters were employed to code the 25 negative communication responses, seven positive communication responses for father and son separately, and four overall evaluations for father and son together. The negative items were: negative exaggeration, yelling, ridicule, making fun of, using big words, repeating one's opinion with insistence, threatening, name calling, interrupting with criticism, giving short unhelpful responses, asking accusatory questions, making demands, arguing over small points (quibbling), talking very little, talking very much, disregarding the other person's points,

mind reading, quick negative judgment of the other's suggestions, abrupt change of subject, anger, demanding, sarcasm, acquiescence, silence and ignoring other personal attack, and criticism.

The positive communication responses were: stating the other's opinion (paraphrasing), making suggestions (offering solutions), joking (good natured), praising, asking what the other person would like, compromise, and willingness to listen.

Four overall impressions were: outcome, putting each other down, friendliness, and effectiveness of problem-solving.

The mean of the two rater's scores was used for data analysis. A table of estimated reliability was obtained using the Spearman-Brown formula. The range of estimated reliability was .52 to .96 for mean composite scores.

Three hypotheses were tested through ABA single-subject quasi-experimental design. The hypotheses were: (a) fathers' and sons' negative communication responses would remain the same (no change) during the baseline phase, but during the training (intervention, treatment) phase, those responses would be reduced significantly, and during the follow-up phase, the effect of intervention would continue (at the same level as the training phase), (b) in contrast, father's and sons' positive communication responses would improve during the training and follow-up phases, and (c)

overall evaluation of each pair's communication and problem-solving patterns would also improve during the training and follow-up phases.

Three different methods of data analysis were employed to assess the effectiveness of treatment: visual inspection, C statistic, and ITSACORR program. The results of statistical analysis were presented as a form of "voting method," which was designed by this researcher.

According to the voting method, the first hypothesis was partially supported by three different methods of data analysis (37.5 %). The second hypothesis was supported by two methods of statistical analysis (C statistic and ITSACORR), but it was not meaningful in terms of clinical validation. The scores for both fathers and sons were not improved in the direction of the researcher's plan of study.

The last hypothesis was supported by three different methods of data analysis. There was significant improvement based on overall impressions.

The Research Hypotheses Testing Regarding the Model

In this study the effect of two different approaches (i.e., interpersonal communication skills training and social problem-solving skills training) were assessed in an effort to develop a working model for Korean immigrant families in the United States. It was basically assumed

that there would be no difference of effect between the two modes of skills training.

This fundamental assumption was confirmed indirectly through the analysis of four single-subject cases. Direct comparison would be possible only through the study of a large sample (at least 30 independent subjects in each mode of training). The large sample should be representative of the population and be randomly assigned to each mode of training. If the group, whatever the size, were treated within a session in the same room, then it would be a single-subject design and be handled using N = 1 statistical methodology. In reality, it is impossible to obtain such samples. Because of this, the results from that sample cannot be generalized to the population.

In this study, the single-subject design was employed. It is impossible to generalize the study results to the population of Korean immigrant fathers and Korean American sons in the United States. That is a definite limitation of the present study. The following discussion and conclusions are presented with special consideration for the various other specific limitations. Interpretation should be made only after considering the specific limitations that result from the study of only four pairs of subjects.

Pair A and Pair B received SPSS, Pair C and Pair D received ICS. Using the "voting" method, Pair A and Pair B obtained the mark Y/N ratio, 20/48 (42%, only counting the

valid vote, i.e., two points from Son A's and Son B's positive responses were invalid). For Pair C and D, the valid vote ratio is 14/48 (29%, four points were invalid). SPSS is more effective in skills training than ICS. It should be noted here again that the research design was not to compare the two groups or the two methods of skills training. Any conclusion drawn from the results of the "voting" method, which was designed by this researcher, and should be withheld until further research is conducted concerning it.

To test the main research hypothesis, that is, a within-subject comparison, the results indicate that the research hypotheses have not been fully supported by the empirical data using the so-called "voting" method (see Tables 24 and 25). Ninety-six possible occasions were counted by three methods of analysis; (a)visual inspection, using the traditional method of graphic presentation, and (b) two statistical analyses methods, i.e., the C statistic, which was originally developed by Young (1941) and reintroduced by Tryon (1982), and the ITSACORR computer program, which was developed by Crosbie (1993). Thirty-six of 96 occasions were found to have a significant effect (37.5%). According to the research hypotheses, the mean scores of the fathers' and sons' negative communication responses should have been reduced by the effect of treatment, but only the fathers' mean scores were reduced

significantly. More specifically, scores for the fathers of Pair A, Pair B, and Pair C revealed a significant treatment effect that was supported by at least two methods of statistical analysis. The father of Pair D also showed a significant treatment effect, but only the $\underline{C}$ statistic method confirmed it. Within this study, the sons of all four pairs received less treatment effect than their fathers. It is noteworthy that across all pairs, both fathers and sons did not exercise many positive communication responses. The research hypothesis that the positive communication would be increased by the effect of treatment was not supported by the empirical data. A distinctive fact is that the fathers of all pairs revealed no treatment effect at all on 12 possible occasions across four pairs. That is, there was no benefit to the fathers from either social problem-solving skills (SPSS) training or interpersonal communication skills (ICS) training. The sons showed some statistically significant treatment effect. However, it was not significant in terms of clinical or social validation. Only the visual inspection made a correct decision concerning the results obtained from the sons. A few positive responses were observed by two raters across all occasions and all sessions. Most of the studies regarding visual inspection (Matyas & Greenwood, 1990; Park et al. 1990; Ottenbacher, 1990; Crosbie, 1993; Pfadt & Wheeler, 1995) indicate that visual inspection is invalid

and has a high risk of incurring a Type I error. But this researcher found that invalidity of visual inspection was not true in the case of the sons' positive communication responses. Only the visual inspection method made a positive decision. Both of the statistical methods made a wrongful, blind, decision on these cases. Actually and practically there was no improvement at all in the direction of the plan of intervention (see Tables 24 and 25, the column on sons' positive responses; Figures 2, 8, 14, and 20; and Appendix D for raw scores). As indicated when introducing visual inspection, for example, if we added a simple regression line derived from the ITSA that was adjusted by an autocorrelation estimator, the method of visual inspection functioned well for the purpose of the study.

According to the results of the VI and the $\underline{C}$ statistical analysis, the research hypotheses were partially accepted; Father A improved in his negative communication responses and across overall evaluations (item #33, #34, #35, and #36). But the VI did not agree with the $\underline{C}$ on item #33. Son A did not improve in his negative and positive communication responses.

In contrast to the above results, the results of ITSACORR analyses revealed that Father A did not improve in the negative and positive communication responses and also showed no improvement on the item #35 and #36. Also, the

results of ITSACORR showed that Son A did improve in the
negative and positive communication responses. This is
because the program itself is so sensitive to the
variability of the data points within a condition. It was
proved in Crosbie's two clinical examples that if the data
points within a condition had a small variability (variance)
and a stable trend, then the results of the omnibus F test
would show a significant treatment effect during the
treatment phase. In the second Crosbie example, the data
points had more variability and trend than the first example
case during both the baseline and treatment phases, but the
test results showed no significance (pp. 970-972, Crosbie,
1993).

In this study, for example, Son A's data points of the
negative and positive communication responses had very small
variabilities and stable trend. The test results of
ITSACORR showed that there was a moderately significant
effect. In the case of the fathers, in contrast, the data
points of the negative communication responses had larger
variability and a more unstable trend than his counter dyad.
It was also true that in a small sample (i.e., where the
number of data points was less than 50) an extreme data
point (outlier) contributed to a larger variability than
usual non-outlier cases.

According to the test results of ITSACORR analysis,
there was only a moderate treatment effect on the son, not

on the father. The results do not support the research
hypotheses. None of them has a strong significant effect
among eight possible occasions (see Table 24, the row of
ITSA).

For Pair B, the results of $\underline{C}$ statistical analysis
showed that Son B improved in his negative and positive
communication responses, but Father B did not. The results
also showed significant effect on the item #33, #35, and
#36. In the case of Pair B, on half of the possible
occasions, there was agreement between the visual inspection
and the $\underline{C}$. On only two out of eight possible occasions was
there an agreement between $\underline{C}$ and ITSA. On six out of eight
possible occasions, the results of visual inspection agreed
with the results of ITSA, in the case of Pair B. The
results of ITSA analysis confirmed that there was no
treatment effect across all occasions, except with Father
B's negative responses (only an omnibus F test on the
overall has shown a significant effect).

Interestingly, all three tests unanimously agreed that
no significant effects were found on Father B's positive
communication responses in both Pairs A and B, and on the
#34 of Pair B (overall evaluation). For Pair B, the three
tests agreed that a significant effect was found on item #34
of Pair A (overall evaluation).

In short, the test results of the $\underline{C}$ statistic supported
the research hypotheses, but the other two analyses (visual

inspection and ITSA) did not.

In summary, as mentioned in the beginning of this chapter, Pairs A and B received social problem-solving skill training after the baseline observations. The visual inspection and two statistical analyses showed inconsistent results in terms of treatment effects. It would not be appropriate to compare Pair A and Pair B. The purpose of single-subject quasi-experimental design is to study subjects individually. The design only allows the comparison within a subject or pair. For example, comparing the performance of a subject during the baseline with performance of the same subject during the treatment phase would be appropriate. A common typical style of communication behavior between Korean American fathers and sons was found. The fathers typically took active, authoritarian, and dominant styles; sons showed comparatively inactive, passive, unassertive styles.

In making an analysis of the effect of training using various kinds of methods (i.e., visual inspection, C statistic, and ITSACORR) for the Pairs A and B overall (similar to meta-analysis) by a kind of "voting" method, the C statistic showed more lenient test results than the so-called "eyeballing" test (see Table 24). Actually, it was expected and reported from other sources that the "eyeballing" test was most lenient, but in this study, the regression line from the ITSACORR made the difference.

Still the ITSACORR method was more stringent than the other two methods, especially for data that have an unstable trend within a condition.

The voting method also provided a very interesting phenomenon of agreement among the three methods: Only five of 16 possible cases reached agreement between the $\underline{C}$ and ITSA, seven cases between VI and ITSA, and 11 cases with the C and the VI.

Table 25 shows a brief summary of the results of the visual inspection and two statistical analysis methods. Roughly speaking, the $\underline{C}$ statistic was the most lenient; that is, it gets the vote of 5/3 (i.e., five out of eight possible occasions) for Pair C and 4/4 (four out of eight possible occasions) for Pair D. The most stringent method was the ITSACORR analysis, along with visual inspection. The ratio of "voting" for the ITSACORR was 2/6 and 2/6 for Pair C and Pair D, respectively.

The dilemma of statistical decision making involves committing either a Type I or a Type II error. If we accept, for example, that "a significant treatment effect is found," even though there is no actual effect, then we have committed a Type I error. An alpha level (conventionally, at $p < .05$ or $p < .01$) is selected and used to reduce the probability of making a Type I error. However, we do not have tests of the probability of committing a Type II error in reality.

To test the research hypotheses, Table 25 reveals valuable information concerning the effectiveness of one intervention; i.e., the effectiveness of interpersonal communication skills training. According to the visual inspection and the ITSA, the hypotheses were not supported. Note an exception--item #34, which both methods rejected for Pair C and supported for Pair D. By using all three methods, it was also confirmed that only item #34 had an effect. If the researcher relies on the results of $\underline{C}$ statistical analysis, he/she may conclude that the research hypothesis is strongly supported by the empirical data with a statistical inference (i.e., the voting ratio is so strong; 5/3 and 4/4 for the Pair C and Pair D, respectively).

Addressing the basic question, "Are two modes of skills training really working for the Korean American family?", the response is firmly "no". Again inspect the "voting" tables (see Tables 24 and 25). For Pair A and Pair B, the ratio for all possible occasions (48 occasions) was 22/26. For Pair C and Pair D, the ratio was 18/30. Combining both pairs, the results were 40/56. If we subtract the six occasions of wrongful decisions for the sons' positive responses from the total ratio, the result is 36/62. Mathematically, (36/96)*100 = 37% for the research hypotheses. The research hypotheses have not been strongly supported by the three methods.

Does the voting method produce useful results for the researcher? The answer is "yes". How can the researcher increase the voting ratio for the research hypotheses? The practical methods are simple; that is, control the baseline phase and increase the data points, if possible, with a small variability. If a fluctuation with a high variability is found, then extend the baseline sessions until the behavior of the data points stabilizes. Introduce a strong intervention in the beginning of the treatment phase. The larger the number of sessions for all three conditions, the higher the probability of finding the treatment effect. The principle is identical to the one that followed to get a high reliability with a standardized test; that is, if we double the test length, the reliability of the test will typically greatly increased.

Guerny (1977) and Robin and Foster (1989) have suggested that the combining of the two modes (SPSS and ICS) is a more powerful treatment and likely to bring about a resolution of father and adolescent conflicts. In this study, the two modes were separated; each mode included a discussion of cultural value systems, as was done in Robin and Foster's model. This study made an assumption that a major conflict results from the clashing of two cultural value systems, the Korean culture of the immigrant fathers and the Americanized culture of the sons. Many studies have already explored multicultural counseling for minorities

(Sue, 1981; Sue & Okasaki, 1990; Biglan, Glasgow, & Singer, 1990; Scott & Borodovsky, 1990; Gim, Atkinson, & Whiteley, 1990; Zane, Sue, Hu, & Kwon, 1991; Pedersen, 1991; Abe & Zane, 1990; and Solberg, Ritsma, Davis, Tata, & Jolly, 1994). They have suggested a variety of methods for multicultural counseling, but few studies have developed a concrete model for minority counseling. Most of these studies were reports using survey questionnaires. No specific quasi-experimental studies have been reported in the major journals of counseling and related areas.

One aspect of this study explored the typical communication style between fathers and sons. A principal finding was that the sons' behavioral patterns are very modest, nonassertive, and passive. Sue, Hu, and Kwon (1991) examined cultural differences in assertiveness by using a social learning paradigm. Their subjects were 55 Asian Americans (28 of Chinese heritage, 27 of Japanese heritage, 76% of subjects were undergraduate students and born in the United States, and 69% were women) compared with 74 Caucasians (70% women and 30% men; 89% of subjects were born in the United States). They found that the general belief about the assertiveness of Asian Americans was not supported. For example, they said, some investigators believe that Asians are highly anxious in situations that might require assertive responses, because Asians are often socialized to be modest and self-effacing and to inhibit the

direct expression of personal wants. Still others believe
that Asians tend to be more indirect in their communication
patterns, which would make them appear less confrontational
with others (Kitano & Kidumura, 1976).

However, this study with four pairs of Korean American
fathers and sons, using a single-subject quasi-experimental
design, supported the general belief that Korean American
adolescents are nonassertive, passive, and have
nonconfrontational communication patterns. In contrast, the
Korean immigrant fathers revealed dominant, authoritarian,
and less negotiable patterns in communication than their
sons. Another distinctive pattern appeared as they (both
fathers and sons) seldom used positive responses in their
ordinary communication; the fathers frequently exercised
their powers in strict, accusing, fault-seeking,
reprimanding, and demanding ways of communication. The sons
demanded more autonomy, independence, self-management, and
self-lenient rules for themselves in the family.

Beyond these kinds of problem, the other major
difficulty was the limited amount of time for fathers and
sons to talk together. Both parents (father and mother) in
these four families worked outside the home. Limited
opportunity existed to discuss matters seriously and openly
together. Their only joint activity was going to church,
but they (parents and children) participated in separate
worship services and fellowship activities. They lived

under the same roof but in separate worlds. A Korean proverb states, "two persons were in the same bed, but dreamt different things."

The gap between the two generations is very great, and there is no bridge to bring them together. When this project was concluding, all the participants (both fathers and sons) were surprised that they had a lengthy chance to talk together (encounter). "Walk a mile a day with your kids" is a motto of this study. If a two-way bridge built of mutual understanding is constructed, then it is much more likely that the gap between generations and/or cultures can be narrowed or eliminated.

In future studies, focus will be given to increasing (constructing) more positive communication responses on the part of both fathers and sons. This is a far easier and more promising approach than reducing (destroying) the negative communication responses of both fathers and sons. Robin and Foster (1989) used communication skills training to focus on how to replace the negative responses with positive ones. They wanted to learn how to exercise parental authority without suppressing the autonomy of the adolescents. This is a critical issue in family communication, especially in families having a problem adolescent. Generally speaking, people experience a sense of authority (exercising a power over the other) when they criticize the other, whatever the reason. In the same

manner, many kinds of negative responses are used by many people. The assumption of the desire to hold power over others should be tested with empirical data, not just with ungrounded claims.

Methodology

While this researcher employed various kinds of statistical methods to assess the data, controversial issues exist about the single best way to analyze data. Through detailed exploration of various methodologies, this researcher learned a great deal about data analysis that can be used in future studies. First of all, it was very difficult to believe that the results of the data analysis were correct and acceptable on several occasions. But reviewing the results gave the researcher many lessons. Because of the researcher's ignorance concerning the hidden realities of the statistical world, the researcher might have blindly adopted a certain method and assumed it to be true. Actually it is a stochastic world of probability, not a fixed, unbending set of inflexible rules. For example, this researcher adopted two different, controversial methods of data analysis. If a researcher fails to accept a research hypothesis, even though it is true in reality, then the researcher has a high probability of committing a Type II error. When this researcher adopted the two statistical

methods, he did not fully realize the limitations of the tests used. However, when the researcher met an expert on the issue of single-subject design (personal communication with Huitema, 1995b), he realized that the two methods contain critical flaws in the procedure for calculating autocorrelation, as well as in the model itself. Specifically, Tryon's and Crosbie's procedures do not have the regression model to compare, when the results come out. Crosbie (1993) has an incomplete model. He suggest that all behavioral data from clinicians and clinical researchers need a simple, reliable procedure to assess change with a short autocorrelated series. He also assumes that such a procedure must also be able to control Type I errors for all levels of Lag 1 autocorrelation. According to Huitema (1995b), all behavioral data, in fact, are autocorrelated; in reality, some data are autocorrelated, and some are not. It is very important to assess the existence of autocorrelation in the data first. If such an autocorrelation exists, then apply the method of adjustment; if not, do not apply the method. In the latter case, the general interrupted time-series analysis(ITSA) will work perfectly. If the researcher blindly employs the method of autocorrelation adjustment, then he/she will get a higher chance of committing a Type I error.

In fact, the results which this researcher obtained by applying the Crosbie(1993) procedure are only partial

evidence of the aforementioned issue. That is, Crosbie has applied the autocorrelation adjustment to any data, before testing whether there is an autocorrelational problem involved in the obtained behavioral data. Further, his program of data analysis does not supply any information about how to interpret the results of data analysis. For example, the meanings of "SSIntercept" and "SSSlope," which appeared on the results of data analysis have not even been addressed. This researcher has tried to obtain a complete manual from the developer (Crosbie), but could only obtain an article by Crosbie that was published in the <u>Journal of Consulting and Clinical Psychology</u> (1993). Even Crosbie, the expert on the ITSA, could not understand and interpret the data presented.

In the ITSACORR program, there are other flaws that the general user cannot control, because it is built into the program and cannot be changed. For example, many single-subject designs have a format of ABA (a baseline, an intervention, and a follow-up phase, as was true of this study).

An issue for researchers to carefully inspect is whether their phases match the constraits of the ITSACORR design. In the case of this study, no provision was made for follow-up, yet this was not clearly indicated in reading the ITSACORR materials. Therefore, data could not be properly inputted. Further, it was not possible to extract

a regression line from this program, despite indications for the directions that it would be possible.

Tryon's Procedure

Tryon's procedure also has flaws that a naive counselor or researcher is not able to detect. As indicated by Crosbie (1989), it is not a test of trend or slope. Huitema (1995b) mentioned that it is a procedure of autocorrelation estimation, not a test of trend or slope. But DeCarlo and Tryon (1993) repeatedly insist that it is a test of trend. They say, "A Monte-Carlo study of the small sample properties of the C-statistic shows that it performs as well or better than the modified estimator suggested by Huitema and McKean (1991). The C-statistic is also shown to be closely related to the d-statistic of the widely used Durbin-Watson test." Huitema (1995b) also has used the Durbin-Watson test. However, Huitema's study applies it in a somewhat different manner and his study produced somewhat different results.

In sum, it is very difficult to determine which statistical method is better for the ABA single-subject design. After personal communication with Huitema (1995b), this researcher has arrived at these conclusions: (a) select an appropriate model or build a best-fit model for the study, (b) test for the existence of autocorrelation in the set of obtained data, then apply an appropriate statistical

procedure, and (c) if the obtained autocorrelation from the set of data is located beyond the critical limit that is already set up, then use the method of adjustment of autocorrelation for that set of data. If no significant autocorrelation is found, then use the ordinary ITSA procedure. Applying the autocorrelation adjustment to a complete set of data will produce an inflated or deflated result.

Analyzing Behavioral Data

Using raters for the observational material is also a risky business. The presence of a video camera in front of a father and son places them under a great deal of pressure. The obtained responses are, therefore, highly reactive ones. The suppressed data of the four sons could be explained as an extraneous variable. This researcher has interpreted it as a cultural difference in communication style. It is difficult to determine which is the more appropriate method of communication from the empirical data. Also, the reaction of the two raters has some problems concerning both inflated and deflated ratings. For example, the first point of data from Figure 1, as indicated by Huitema (1995b), is a type of outlier simply from the response of the two raters. He said he found it many times in other behavioral data. The simple method for treating it is to eliminate the first point, then use the rest of the data (i.e., five out of six

data points in the case of Figure 1 in this study). It will thus give more valid data analysis results. While reviewing the results of the estimated reliability in Chapter 2 (Method), this researcher found a phenomenon of deflated reaction by the two raters. The coefficients of reliability drop when the ratings continue until the finish (see Table 2). It took an average of five hours to rate one pair within this study (altogether 25 hours). Employing more than two raters (at least three or four) was recommended in a previous study (Robin, 1989, p. 309). A third rater, serving as an arbitrator, could be employed in instances when a large difference exists between two raters.

Social Validation

As shown in the fathers' and sons' positive communication responses, the results of statistical analysis provide meaningless information to the researcher or counselor. Social validation means that third parties who are related to the participants provide valuable information about the impact (effect) of the treatment. For example, as stated in the results chapter, the frequency of sibling fighting was reduced after treatment, as reported by the participants' significant others (i.e., mother or sister).

Possible Causes of Conflict from Acculturation

Recognizing that conflict from acculturation was an important area to learn more about, the researcher introduced a cultural value system (contrast) questionnaire. This was administered to eight individuals who were not participants in the study. Its purpose was to learn more about possible causes of conflict between Korean immigrant fathers and Korean American sons. This pilot study was performed with a limited sample of Koreans. Of eight Korean subjects in the study, four had been in the United States for five to 10 years, and the other four for more than 20 years. The items in Table 1 were scrambled and transformed into a questionnaire (see Appendix K). The results of the pilot test showed a very distinctive contrast in the direction that the researcher assumed. Twenty-one items (which obtained six or more tally marks) were for a Western/American cultural value; and 18 items were for an Eastern/Korean cultural value.

This result points to an interesting phenomenon where serious conflicts could arise between the Korean immigrant fathers and the Korean American (or acculturated Korean) sons. The subjects indicated possible causes of conflict with the items presented in the value system (Appendix K). For example, a shame/moral orientation was contrasted with a guilty/legal orientation, a pleasure (fun) orientation was

contrasted with a pain-tolerance orientation, and so forth.

Implications for Further Study

About the Working Model

In this study, two modes of skills training were employed separately to assess effectiveness on social problem-solving and interpersonal communication. As recommended by Robin and Foster (1989), a combined intervention would bring more significant effect than separate treatments. Instead of the hot issues from the 44 items of the Issue Checklist, issues that are related to cultural values would be more relevant to the topics to test for each session. In this case, four pairs would receive the same topics to test. In this study, each pair was given a different topic by the researcher. Creating a scenario for each topic would be possible, instead of suggesting a vague issue without describing it.

Special effort is required to encourage fathers and sons to exercise more positive communication responses. For example, through more vigorous modeling and role playing, both of them could learn those kinds of responses. It was noted that instead of destroying (reducing) the negative communication responses, constructing positive responses by interpersonal communication skills training is preferred. The most difficult job in the process of treatment was to

bring adolescents to participate more actively in each session. The habitual pattern (i.e., authoritarian style of communication) was hardly changed by the short period of intervention.

About Experimental Design

An intensive ABA single-subject design is more appropriate than employing a method of group comparison. Adding a combined mode (SPSS plus ICS) with four pairs of each mode is recommended. In this case, if the researcher collects the information on effect sizes for each treatment, then it would be possible to compare among three modes, like group comparison. The cost of running a group experiment would be reduced.

About Methodology

There are still many unresolved questions regarding methods of statistical analysis left for further investigation. For example, the $\underline{C}$ statistic and ITSACORR procedure have many flaws that the researcher could not control. As indicated by Huitema, the researcher should stick with his/her data, watch out for the behavior of data, and handle the behavior properly when analyzing the data. Find out first whether an autocorrelation exists or not, then apply an appropriate method of ITSA program.

There is also an issue related to calculating an effect

size, that is, which data point will meet the prerequisite
conditions of the formula (see Center et al., 1985-86). To
calculate the effect size of level change for Father A's
negative responses, for example, in the process of selecting
a data point, there are several possible ways to input the
data into the formula (i.e., the last data point of the
baseline or the first point of the prediction line; see more
details in Appendix L).

According to Center et al. (1985-86), to assess the ES
using the formula, the data point would be the last point of
the baseline phase. But Huitema indicated that the first
point of projected regression line across the training phase
is more appropriate. That is, two possible points exist for
the formula (see Appendix L). Also it does not fit for ABA
single-subject design as in the case of the ITSACORR program
(no room for the follow-up phase).

About the Counselor

To accommodate the target clients in the situation-
specific conditions, the counselor should be very sensitive
to possible sources of conflict from the process of
acculturation. The counselor also must learn both methods
of skill training and practice _in vivo._

About Instrumentation

In the IBC, the point of the Likert-type scale should be adjusted (i.e., from a 4-point scale to a 7-point scale, for the purpose of increasing the sensitivity of data analysis). Conventionally, the correlation method requires at least a 7-point scale. Variability in the scale is the critical issue. If the IBC is employed for both skill training, the balance of items between the two modes should be reconsidered.

All these factors, mentioned briefly above, strongly influence assessment the effectiveness of intervention. Especially when the researcher is going to use a package of skills, the effect of intervention will appear very late, that is, at the end of the treatment phase or in the follow-up phase. For example, if the researcher is going to teach the process of problem solving, the first component of skills definitely would be how to define an issue. Measuring the effect of a specific component of skills is impossible. The effect of an intervention would be an accumulated effect of various components. In that case, how many component skills should be included in a package will be another issue. For example, for training an airplane pilot, in the emergency package, a well-folded parachute is the very critical kit, nothing else.

About a Mission

Awakening the dog in Pavlov's laboratory was a critical issue. After Pavlov got the Nobel prize, he invested a large sum of money to build a laboratory in the ground (as deep as he could make it) to control extraneous variables (i.e., especially noise). The dog fell asleep. The dog is very sensitive to noise, and the noise makes the dog awaken. This is a similar situation in metropolitan areas in the United States. Even though the counselor has prepared a very expensive and useful emergency package, very few people are interested in participating in the program. This researcher tried to contact parents who were in needs (i.e., those who had a runaway adolescent); they refused to accept help. There should be a mission to awaken people through workshops in metropolitan areas. Of course, there is a very strong cultural value system involved (i.e., the stigma of showing a weakness, not pride, to another is a shame; or people believe it to be a family matter, not the business of an outsider).

APPENDICES

APPENDIX A

Raw Scores of Father's Negative
Communication Responses

Appendix A

Raw Scores of Father's Negative Communication Responses

Session	Pair A R1	R2	Mean	Pair C R1	R1	Mean	Pair B R1	R2	Mean	Pair D R1	R2	Mean
1	8	11	9.50	3.5	5	4.25	3	4	3.5	4	4.5	4.25
2	3.5	3	3.25	7	5	6	4	4	4.00	5.5	6	5.75
3	5	4.5	4.75	7	6	6.5	4.5	1	2.75	5	4	4.50
4	4	5	4.50	4.5	5	4.75	8	7.5	7.75	4	3.5	3.75
5	7.5	4	5.75	7.5	6	6.75	2	4	3.00	4	5	4.50
6	4	6	5.00	5	3.5	4.25	8	8	8.00	3.5	3	3.25
Mean =		5.46			5.42			4.83			4.33
SD =		2.14			1.14			2.40			.85
Median =		4.88			5.38			3.75			4.38
7	2	2.5	2.25	6	4	5.00	0	0	0	5.5	2	3.75
8	3	4.5	3.75	2.5	3	2.75	1	0	.50	2.5	2.5	2.50
9	5	5.5	5.25	4	4	4.00	2	1	1.50	3	4.5	3.75
10	2	1.5	1.75	3.5	3.5	3.50	8	7.5	7.75	4.5	3.5	4.00
11	2	3	2.50	3	.5	1.75	0	1	.50	2.5	2.5	2.50
12	4	4	4.00	3.5	4	3.75	0	0	0	2	3.5	2.75
13	0	2	1.00	4	3	3.50	4	3	3.50	3.5	3.5	3.50
14	2	1	1.50	2	1	1.50	0	0	0	1	2	1.50
15	3.5	5	4.25	3	4	3.50	5	4.5	4.75	1	1	1.00
16	.5	3	1.75	3.5	2.5	3.00	6.5	6	6.25	2	3.5	2.75
17	1.5	1.5	1.50	4	3.5	3.75	6	5.5	5.75	.5	1	.75
Mean =		2.68			3.27			2.77			2.61
SD =		1.40			1.00			1.5			1.12
Median =		2.25			3.5			2.92			2.75
18	1	1	1.00	4.5	2.5	3.50	0	0	0	2	3.5	2.75
19	2	2.5	2.25	4	4	4.00	3	2	2.50	1	2	1.50
20	4	5	4.50	2	1	1.50	3	1.5	2.25	4	4	4.00
21	2.5	3	2.75	2	0	1.00	2	1.5	1.75	1.5	2.5	2.00
22	5.5	5	5.25	4	3	3.50	0	.5	.25	1	4.5	2.75
23	2.5	3	2.75	2	2	2.00	2.5	1	1.75	1.5	3	2.25
Mean =		3.08			2.58			1.42			2.54
SD =		1.55			1.24			1.04			.86
Median =		2.75			2.75			1.75			2.5

APPENDIX B

Raw Scores of Son's Negative
Communication Responses

Appendix B

Raw Scores of Son's Negative Communication Responses

Session	Pair A			Pair C			Pair B			Pair D		
	R1	R2	Mean	R1	R2	Mean	R1	R2	Mean	R1	R2	Mean
1	1	3	2	2	3.5	2.25	2	6	4	1	1	1
2	0	1	.5	3	4	3.5	1	3	2	0	0	0
3	2	2	2	1.5	3	2.25	.5	2.5	1.5	3	1	2
4	0	0	0	1.5	.5	2	3	3.5	3.25	0	1	.5
5	3	2	2.5	2.5	4	3.25	1	1	1	0	1	.5
6	4	5	4.5	2	3	2.5	2	2	2	1	1	1
Mean =			1.92			2.63			2.29			.83
SD =			1.59			.61			1.12			.68
Median =			2			2.38			2			.75
7	0	3	1.5	1	3	2	1	1	1	0	1	.5
8	3	4	3.5	1.5	2	1.75	1	1	1	3	1.5	2.25
9	1	1	1	1	3	2	0	1	.5	2	2.5	2.25
10	1	1.5	1.2	1	1.5	1.25	1	3	2	2	1	1.5
11	2	3	2.5	2	2.5	2.25	1	2	1.5	1	1	1
12	2	3	2.5	3	4	3.5	0	0	0	1	1.5	1.25
13	0	0	0	1	1	1	1	2.5	1.25	3.5	1.5	2.5
14	0	0	0	1	0	.5	1	1	1	1	1	1
15	1	2	1.5	1	.5	.75	2.5	3.5	3	0	1	.5
16	3	3	3	2.5	3	2.75	2.5	3.5	3	1	1	1
17	0	0	0	1	.5	.75	5.5	5	5.25	1	0	.5
Mean =			1.70			1.68			1.77			1.30
SD =			1.44			.94			1.49			.74
Median =			1.5			1.75			1.25			1
18	0	0	0	0	1	.5	.5	2	1.25	0	1.5	.75
19	1	.5	.75	3	0	1.5	2	0	1	1	1	1
20	.5	1	.75	1	1	1	2	1	1.5	2	2	2
21	0	1	.5	0	0	0	1	2.5	1.75	2	1	1.5
22	3	2	2.5	1	0	.5	0	0	0	2	2	2
23	2	0	1	0	1	.5	1	0	.5	1	2	1.5
Mean =			.92			.67			1			1.49
SD =			.85			.52			.65			.51
Median =			.75			.5			1.13			1.5

Appendix D

Raw Scores of Son's Positive Communication Responses

Session	Pair A			Pair C			Pair B			Pair C		
	R1	R2	Mean	R1	R2	Mean	R1	R2	Mean	R1	R2	Mean
1	3	4	3.5	0	.5	.75	0	.5	.25	.5	.5	.5
2	0	.5	.25	.5	.5	.75	1	1	1	.5	0	.25
3	1	1	1	1	1	1	1	1	1	0	0	0
4	1	1	1	1	1	1	0	0	0	.5	0	.25
5	1	1	1	1	1	1	1	.5	.75	.5	0	.25
6	1	0	.5	0	0	0	1	.5	.75	0	0	0
Mean =			1.21			.75			.63			.21
SD =			1.17			.39			.41			.19
Median =			1			.88			.75			.25
7	0	0	0	0	0	0	1	1	1	0	.5	.25
8	0	.5	.25	0	0	0	1	0	.5	.5	1	.75
9	0	.5	.25	0	0	0	1	1	1	.5	1	.75
10	0	.5	.25	0	0	0	0	2	2	.5	1	.75
11	1	1	1	0	0	0	0	1	.5	1	1	1
12	1	1	1	0	0	0	2	2	2	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	.5	1	.75
15	1	1	1	1	1	1	1	1	1	1	1	1
16	1	.5	1.25	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	.5	.75
Mean =			.73			.45			1.09			.82
SD =			.44			.52			.49			.23
Median =			1			0			1			.75
18	1	1	1	1	0	.5	1	1	1	.5	0	.25
19	1	1	1	.5	1	.75	1	1	1	.5	.5	.5
20	1	1	1	1	1	1	0	0	0	0	.5	.25
21	1	2	1.5	1	1	1	0	0	0	0	0	0
22	1	2	1.5	1	1	1	1	1	1	0	0	0
23	1	2	0	1	1	1	1	1	.5	1	0	.5
Mean =			1			.88			.58			.25
SD =			.55			.21			.49			.22
Median =			1			1			.75			.25

APPENDIX E

Pair A: The Raw Scores of Overall Evaluation

Appendix E

Pair A: The Raw Scores for Overall Evaluation.

Sessions	#33			#34			#35			#36		
	R1	R2	Mean	R1	R2	Mean	R1	R2	Mean	R1	R2	Mean
1	3	3	3	1	1	1	3	1	2	4	4	4
2	2	3	2.5	2	2	2	3	2	2.5	4	3	3.5
3	4	3	3.5	2	3	2.5	2	3	2.5	3	3	3
4	3	5	4	2	2	2	2	1	1.5	3	4	3.5
5	2	3	2.5	2	3	2.5	3	2	2.5	3	3	3
6	4	4	4	3	2	2.5	2	2	2	3	4	3.5
	Mean =		3.17			2.08			2.17			3.38
	SD =		.61			.58			.41			.38
	Median =		3.25			2.25			2.25			3.38
7	3	4	3.5	1	2	1.5	4	2	3	1	4	2.5
8	4	4	4	1	1	1	2	2	2	3	4	3.5
9	5	3	4	2	2	2	2	2	2	4	4	4
10	5	4	4.5	1	1	1	3	3	3	3	4	3.5
11	3	4	3.5	1	1	1	4	3	3.5	2	4	3
12	4	4	4	1	1	1	3	3	3	3	4	3.5
13	4	3	3.5	1	1	1	4	3	3.5	2	4	3
14	2	2	2	1	1	1	4	3	3.5	1	3	2
15	4	4	4	1	1	1	2	3	2.5	4	4	4
16	4	4	4	1	2	1.5	2	3	2.5	4	4	4
17	2	3	2.5	1	1	1	3	3	3	2	3	2.5
	Mean =		3.59			1.18			2.82			3.23
	SD =		.74			.34			.56			.68
	Median =		4			1			3			3.5
18	2	2	2	1	1	1	3	3	3	1	3	2
19	1	3	2	1	1	1	4	3	3.5	1	3	2
20	3	2	2.5	1	2	1.5	2	3	2.5	3	3	3
21	3	3	3	1	2	1.5	3	3	3	3	3	3
22	2	2	2	2	1	1.5	3	3	3	3	2	2.5
23	1	2	1.5	1	1	1	4	3	3.5	1	2	1.5
	Mean =		2.17			1.25			3.08			2.33
	SD =		.52			.27			.38			.61
	Median =		2			1.25			3			2.25

APPENDIX F

Pair B: The Raw Scores of Overall Evaluation

Appendix F

Pair B: Raw Scores of Overall Evaluation.

Sessions	#33 R1	R2	Mean	#34 R1	R2	Mean	#35 R1	R2	Mean	#36 R1	R2	Mean
1	3	2	2.5	2	1	1.5	3	2	2.5	2	3	2.5
2	5	5	5	2	2	2	3	3	3	4	3	3.5
3	4	5	4.5	2	2	2	2	3	2.5	4	4	4
4	2	2	2	4	3	3.5	2	2	2	3	3	3
5	2	2	2	2	2	2	4	3	3.5	3	3	3
6	4	3	3.5	2	3	2.5	2	2	2	3	3	3
Mean =			3.25			2.25			2.58			3.17
SD =			1.29			.69			.58			.52
Median =			3			2			2.5			3
7	5	3	4	2	1	1.5	4	3	3.5	4	4	4
8	5	5	5	1	1	1	2	2	2	4	4	4
9	5	5	5	2	2	2	2	2	2	4	4	4
10	2	2	2	3	3	3	3	3	3	2	3	2.5
11	2	2	2	3	2	2.5	4	3	3.5	2	3	2.5
12	5	5	5	3	1	2	3	3	3	3	4	3.5
13	3	3	3	3	3	3	2	2	2	2	3	2.5
14	4	4	4	3	2	2.5	3	2	2.5	3	4	3.5
15	3	3	3	3	3	3	2	3	2.5	3	3	3
16	1	2	1.5	2	2	2	3	3	3	1	3	2
17	3	3	3	2	2	2	3	3	3	3	3	3
Mean =			3.40			2.22			2.73			3.14
SD =			1.28			.65			.56			.71
Median =			3			2			3			3
18	4	3	3.5	2	1	1.5	2	3	2.5	3	3	3
19	2	2	2	3	3	3	3	3	3	2	2	2
20	4	4	4	3	3	3	3	3	3	3	3	3
21	2	2	2	1	1	1	4	3	3.5	2	2	2
22	3	3	3	3	3	3	3	3	3	3	3	3
23	1	1	1	1	1	1	4	3	3.5	2	2	2
Mean =			2.58			1.75			3.08			2.5
SD =			1.11			.99			.38			.55
Median =			2.5			1.25			3			2.5

Appendix H

Pair D: Raw Scores of Overall Evaluation.

Sessions	#33			#34			#35			#36		
	R1	R2	Mean	R1	R2	Mean	R1	R2	Mean	R1	R2	Mean
1	2	3	2.5	3	3	3	3	2	2.5	2	4	3
2	2	4	3	1	2	1.5	3	2	2.5	3	4	3.5
3	2	2	2	2	2	2	4	3	3.5	2	3	2.5
4	4	4	4	1	2	1.5	3	2	2.5	3	4	3.5
5	2	2	2	2	2	2	3	3	3	3	3	3
6	1	2	1.5	1	2	1.5	4	3	3.5	2	3	2.5
Mean =			2.5			1.92			2.92			3
SD =			.89			.58			.40			.45
Median =			2.25			1.75			2.75			3
7	1	2	1.5	3	3	3	4	3	3.5	3	3	3
8	3	2	2.5	2	2	2	3	2	2.5	3	3	3
9	2	3	2.5	1	2	1.5	3	2	2.5	2	3	2.5
10	2	3	2.5	2	2	2	3	2	2.5	2	3	2.5
11	2	4	3	2	3	2.5	4	2	3	2	4	3
12	3	3	3	2	2	2	3	3	3	3	3	3
13	4	4	4	1	1	1	4	3	3.5	3	4	3.5
14	3	3	3	1	1	1	3	2	2.5	4	4	4
15	4	5	4.5	1	1	1	3	2	2.5	4	4	4
16	3	5	4	1	1	1	3	3	3	4	4	4
17	2	5	3.5	1	1	1	3	3	3	3	4	3.5
Mean =			3			1.64			2.86			3.32
SD =			.87			.71			.39			.20
Median =			3			1.5			3			3
18	2	3	2.5	2	2	2	3	3	3	3	4	3.5
19	3	4	3.5	1	1	1	2	2	2	4	4	4
20	2	2	2	1	2	1.5	3	3	3	3	4	3.5
21	4	4	4	3	3	3	3	2	2.5	3	4	3.5
22	3	4	3.5	2	2	2	3	3	3	3	4	3.5
23	3	3	3	1	2	1.5	4	3	3.5	3	4	3.5
Mean =			3.08			1.83			2.83			3.58
SD =			.74			.68			.52			.20
Median =			3.25			1.75			3			3.5

APPENDIX I

An Example of Calculating $\underline{C}$ Statistic

Appendix I

An Example of Calculating "C" Statistic, Pair A

Session	Scores	Procedures to calculate "C" and Z Scores

1	9.5	**First Baseline Phase:**
2	3.25	SUM D^2 = 43.5 2*SS(X) = 45.85
3	4.75	
4	4.5	Sc = .338 C = 1 - $\dfrac{43.5}{45.85}$ = .05
5	5.75	
6	5	Z = .05/.338 = .15, n.s.

7	2.25	**First Baseline Plus Treatment Phase:**
8	3.75	
9	5.25	SUM D = 93.75 2*SS(X) = 144.735
10	1.75	
11	2.5	Sc = .228 C = 1 - $\dfrac{93.75}{144.735}$ = .352
12	4	
13	1	Z = $\dfrac{.352}{.228}$ = 1.55, n.s.
14	1.5	
15	4.25	
16	1.75	**Part of Treatment Plus Follow-up**
17	1.5	SUM D^2 = 45.56 2*SS(X) = 47.2084
18	1	Mean = 2.88
19	2.25	Sc = .186 C = .035
20	4.5	
21	2.75	Z = .188, n.s.
22	5.25	
23	2.75	

Note: The first baseline and treatment phases can be merged
to calculate "C" and Z, only if there is no
significant level is identified at p<.05 and P<.01.

APPENDIX J

Critical Values for Testing $\underline{C}$ Statistic for
Selected Sample Size (N) at the .01
Level of Significance

Appendix J
Critical Values for testing the C statistic for selected

sample sizes (N) at the .01 level of significance.

N	1%	N	1%
8	2.17	18	2.25
9	2.18	19	2.26
10	2.20	20	2.26
11	2.21	21	2.26
12	2.22	22	2.27
13	2.22	23	2.27
14	2.23	24	2.27
15	2.24	25	2.27
16	2.24	unlimit	2.33
17	2.25		

Note. Taken from Tryon (1982), originally developed by
Young (1941).

The critical value for the .05 level of significance
is 1.64 for all sample size above.

APPENDIX K

Cultural Value System Checklist and
A Pilot Study (Results)

Appendix K

CULTURAL VALUE SYSTEM CHECK LIST

Please, check the following list of short description about cultural value. According to your personal opinions or your experience in Korea and in the U.S.A., if you think it is a kind of Eastern/Korean value, mark "E", and if it is a kind of Western/American value, mark "W". If you don't know leave it blank. There is no right or wrong answer. Please, do not discuss with other person.

( ) Mass-quantity production ( ) old-experience respected
( ) shame/moral oriented   ( ) individuality
( ) progression (future oriented)
( ) logic, reasonable
( ) pro-action
( ) originality, creativity, utility
( ) spending/consumption   ( ) pleasure (fun) oriented
( ) effectiveness/efficiency ( ) result is important
( ) I (me) centered ("my wife," "my kid")
( ) proudness/self-esteem   ( ) guilty/leagal-oriented
( ) social security system   ( ) independent/separateness
( ) minimized privacy/openness
( ) punctuality, time is urgent
( ) quality production
( ) seniority system (responsibilty/authority)
( ) self-effacing   ( ) maximized privacy
( ) family security system   ( ) interdependence/attachment
( ) we centered ("our wife" = "uri-manura", "our kids")
( ) relationship is more important
( ) time is relative   ( ) shame/moral oriented
( ) family-face is important ( ) pro-thought
( ) authoritarian, absolute obedience
( ) appropriatness/ fitness   ( ) motive is important
( ) savings/preservation
( ) pain-tolerance oriented   ( ) origin is important
( ) cost/benefit, accountability
( ) economical
( ) calculated relationship   ( ) new/fresh ideas respected
( ) chronology/chronomy
( ) tradition (past) oriented, "There and Then" focused
( ) "Here and Now" is important
( ) democratic decision making
( ) "My conscience is said so."
( ) autonomy
( ) old-experience respected
( ) "It is leagally right."   ( ) authority is important
( ) "command " oriented   ( ) "It is morally right."
( ) fairness   ( ) feelings, emotions

<Continued to next page>

**** Please, fill up the following inforamtion ********

Your Age: ( )20 - 29   Female ( )   Male ( )
           ( )30 - 39
           ( )40 - 49   Married ( )   Single ( )
           ( )50 - 59
           ( )60 over

How long you have been in the U.S.A.:
           ( ) less than 5 years
           ( ) 5 - 10 years
           ( ) 10 - 15 years
           ( ) 15 - 20 years
           ( ) 20 over

Any comment?

_____

_____

_____

_____

_____

Mailing Address:

     D. Y. Lee
     315 East Point Lane # F-19
     East Lansing, MI 48823

If you share the results of this check list, give your
address:

     _____

     _____

Thank you for your cooperation.

A Pilot Study of Testing
EATERN/KOREAN VS. WESTERN/AMERICAN
CULTURAL VALUE SYSTEM CHECKLIST

To test the validity of the cultural value system (contrast), a scrambled list of Table 1 was given to a small group of Korean who were living in Michigan (Four of eight was women, four of them have been in the U.S.A., for range of five years and ten years, the other four were in the U.S.A. more than 20 years. After given the questionnaire which consists of 54 items, the results come out as follows:

ITEMS	TOLLY MARK	W/E	RATIO	RESULTS	
(1) Mass-quantity production	WW?WWWE?	5/1	?=2	W	
(2) old-experience respected	EEEEWEEE	1/7		E	*
(3) shame/moral oriented	EEEEEEEE	0/8		E	**
(4) individuality	WWWWWWWW	8/0		W	*
(5) progression (future oriented)	WEWWWW??	5/1	?=2	W	
(6) logic, reasonable	WWWWWEWW	7/1		W	
(7) pro-action	WWWWWWWW	8/0		W	
(8) originality, creativity, utility	EWWWWWWW	7/1		W	
(9) spending/consumption	WWWWWWWW	8/0		W	*
(10) pleasure (fun) oriented	WWWWWWWW	8/0		W	**
(11) effectiveness/efficiency	WEWWWWWW	8/1		W	
(12) result is important	WWEEWWWW	6/2		W	
(13) I (me) centered ("my wife," "my kid")	WWWWWWWE	7/1		W	**
(14) proudness/self-esteem	EWEWEEWE	3/5		E	
(15) guilty/leagal-oriented	EWE?WEEW	3/4	?=2		
(16) social security system	?WWWWWWW	7/0	?=1	W	
(17) independent/separateness	WWWWWWWW	8/0		W	**
(18) minimized privacy/ openness	EEW?EEE?	1/5	?=2	E	**
(19) punctuality, time is urgent	WWWWWWWE	7/1		W	
(20) quality production	?WWWEEEE	3/4	?=1		
(21) seniority system (responsibilty/authority)	EEWEEEEE	1/7		E	**
(22) self-effacing	WEEEEEEE	1/7		E	**
(23) maximized privacy	WWW?WWWW	7/0	?=1	W	**
(24) family security system	EEEEEEEE	0/8		E	
(25) interdependence/ attachment	EEE?WEWE	2/5	?=1	E	
(26) we centered ("our wife", "our kids")	EEEEEEEE	0/8		E	
(27) relationship is more important	EEEEEEEE	0/8		E	

(28) time is relative	EE?WE?E?	1/4	?=3	E	
(29) shame/moral oriented	EEEEEEEE	0/8		E	**
(30) family-face is important	EEEEEEEE	0/8		E	**
(31) pro-thought	EEW?EWEE	2/5	?=1	E	
(32) authoritarian, absolute obedience	EEEE??EE	0/6	?=2	E	**
(33) appropriatness/ fitness	?WWWEW?W	5/1	?=2	W	
(34) motive is important	WWWWEEWW	6/2		W	
(35) savings/preservation	EEEEEWEE	1/7		E	**
(36) pain-tolerance oriented	EEEEEEEE	0/8		E	**
(37) origin is important	EEEEEWWE	2/6		E	
(38) cost/benefit, accountability	WWWWWWWW	8/0		W	
(39) economical	WEWEWEWW	5/3		W	
(40) calculated relationship	WWWEEWWW	6/2		W	
(41) new/fresh ideas respecte	WWWWWWWW	8/0		W	*
(42) chronology/chronomy	EWE?E?EW	2/4	?=2		
(43) tradition (past) orient "There and Then" focused	EEEEEEEE	0/8		E	
(44) "Here and Now" is important	WWWWWWWW	8/0		W	
(45) democratic decision maki	WWWWWWWW	8/0		W	**
(46) "My conscience is said s	?WEWEWEE	3/4	?=1		
(47) autonomy	?EWWWWW?	5/1	?=2	W	**
(48) old-experience respected	EEEEEEEE	0/8		E	*
(49) "It is leagally right."	WWWWWWWW	8/0		W	**
(50) authority is important	EEEEEEEE	0/8		E	**
(51) "command " oriented	EEEEEEEE	0/8		E	**
(52) "It is morally right."	EEEEEWEE	1/7		E	**
(53) fairness	WWWWWWWW	8/0		W	**
(54) feelings, emotions	W?WEEWEE	3/4	?=1		

```
Your Age:    ( )20 - 29
             ( )30 - 39          ////        4
             ( )40 - 49
             ( )50 - 59          ////        4
             ( )60 over


How long you have been in the U.S.A.:
             ( ) 5 - 10          ////        4
             ( ) 10 - 15
             ( ) 15 - 20
             ( ) 20 over         ////        4
```
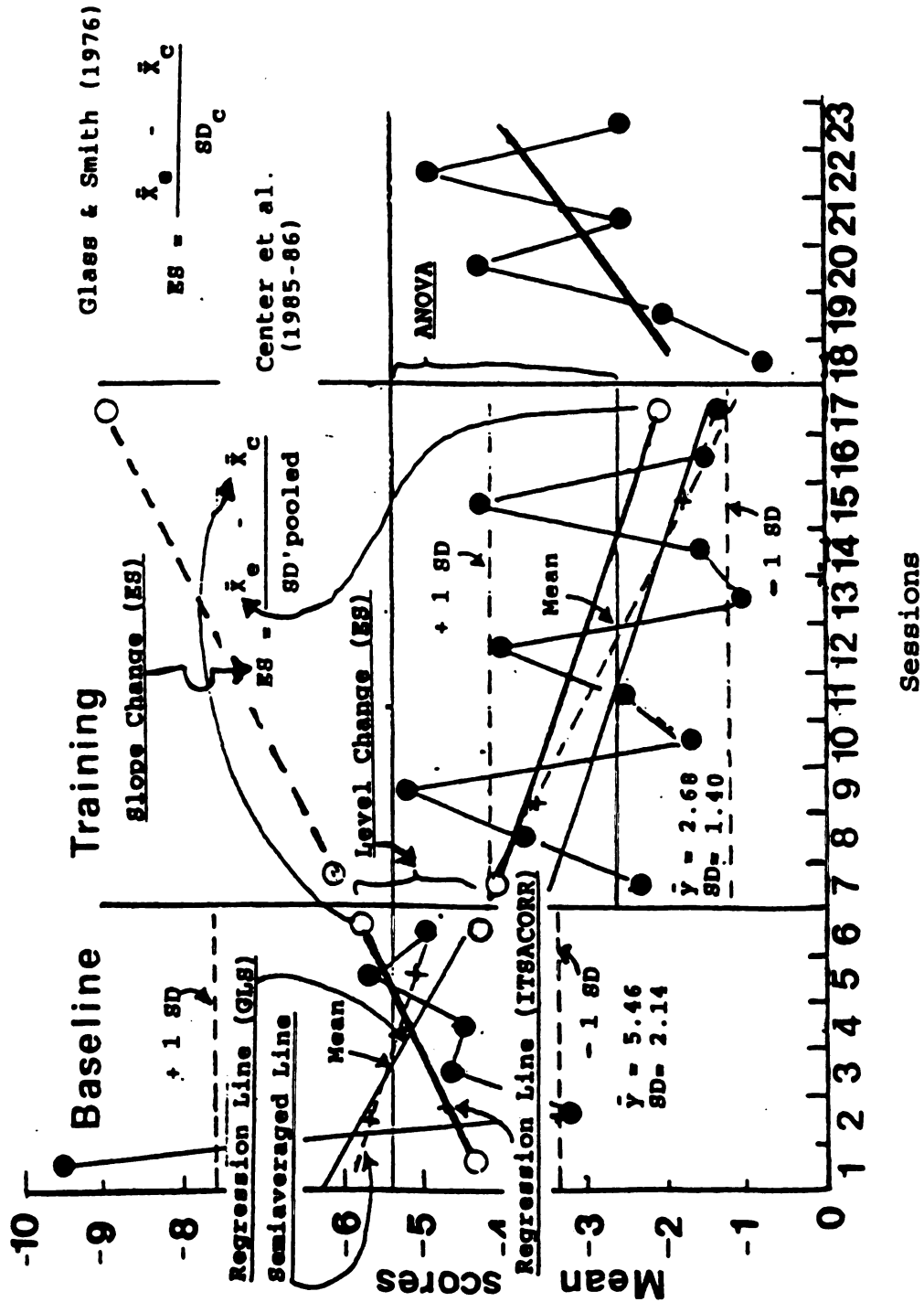
****

Mark * indicates a mild possible cause of conflict.
Mark ** indicates a strong possible cause of conflict.

APPENDIX L

Calculating Effect Sizes and Plotting
Various Kinds of Regression Lines

Appendix L Calculating Effect Sizes and Plotting Various Kinds of Regression Lines.

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