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THE EFFECTS OF CHANGES IN FAMILY INTERPERSONAL RELATIONSHIPS ON THE BEHAVIOR OF ENURETIC CHILDREN AND THEIR PARENTS

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BY

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ABSTRACT

The purpose of this study was to investigate the effects of changes in family interpersonal relationships on the behavior of enuretic children and their parents. It was reasoned that through instruction in Parent Effectiveness Training (PET), parents would learn new skills for communicating with their children and each other, thereby resolving conflict and strengthening relationships within the family. Changes in definitions of relationships, assessed by measuring the interpersonal distances placed by Ss between symbols representing members of the family, were expected to be reflected (1) by a decrease in interpersonal distances, (2) by a decrease in a selected symptomatic behavior (enuresis) of children, (3) by a decrease in the degree of manifest anxiety demonstrated by parents and their enuretic children, and (4) by a more positive self concept demonstrated by parents and children alike.

Ss were 35 boys, 23 girls, and 100 parents from 58 families, randomly assigned by families to treatment and wait list control groups. Child Ss ranged in age from six to 16 years and wet their beds three or more times each week, according to parental report. Retardates and severely physically handicapped children, defined by placement in special classes at school, were excluded.

Following the customary eight week course in PET for parents in the treatment group, instruments measuring

interpersonal distances, manifest anxiety, and self concept were administered to all Ss, and the number of dry nights achieved by children was recorded for the same two-week period. For all variables, experimental fathers, mothers, sons, and daughters were compared with their counterparts in the control group. It was assumed that observations of control Ss represented pre-treatment measures of experimental Ss.

It was found that mothers defined the relationship between self and husband as closer, but fathers and daughters did not confirm that the relationship between parents had changed. Sons also disagreed, perceiving the father-mother relationship, as well as many of the other intrafamily relationships, as more distant. The fact that different members of the family perceived the same relationships discrepantly was interpreted as evidence of conflict within the family, producing unstable behavior, and indicating that the process of change had been initiated but not completed when measures were obtained.

Other findings were interpreted as examples of unstable behaviors, further evidence of conflict and the uncompleted process of change:

1. Mothers and fathers exhibited a greater degree of manifest anxiety and a less positive self concept; sons and daughters did not change in personality variables.

2. The treatment, PET, did not change the enuretic

behavior demonstrated by sons; PET did, however, increase the rate of enuretic behavior observed for daughters.

3. The greater interpersonal distances perceived by sons were not coupled with a corresponding change in the frequency of enuretic behavior, whereas the unchanged distances perceived by daughters were accompanied by increased wetting. This finding lays strong evidence for the conclusion that family interpersonal distances are not directly related to enuretic behavior. As a feasible alternative argument, however, it was suggested that the fact that boys redefined family relationships as more distant may have offset for them the effects of variables producing a decrement in dry behavior for girls.

PET did not produce the expected positive changes in family interpersonal distance, personality variables, and children's enuretic behavior. Whether a decrease in interpersonal distances perceived by children would be accompanied by a decrease in enuretic behavior, therefore, as hypothesized, was a question left unanswered by this study, since a reduction in these distances did not occur.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

The purpose of this study was to investigate the effects of changes in family interpersonal relationships on the behavior of enuretic children and their parents. In treating the problem behavior of an acting-out child, it may be important to consider what the child's behavior means to the family. Looking beyond the individual child to the larger social context of his problem behavior, the appropriate question may no longer be, "What is wrong with this child?" but rather, "What kind of situation is provoking this kind of behavior?" or "What does this kind of behavior communicate, and to whom?"

Fullmer (in press) postulates that a child's behavior represents the emotional condition of the family; his symptoms indicate conflicts which usually involve significant other persons within the family. The act of behavior is the symbol used to communicate with those significant others; and the behavior is motivated by the need to express a meaning defined by the child's own perception of relationship (Fullmer, 1971, p. 48). Fullmer's model of treatment focuses on the <u>redefinition</u> of relationships between significant persons as the key to resolving conflicts and changing problem behavior.

Unfortunately, although support may be implied by clinical impressions and case histories, few researchers

have investigated the theory that problem behavior can be changed as a result of redefining relationships and resolving conflicts within the family. An experimental study designed to test the effects of changes in relationships on symptomatic behavior would be a real contribution to the field. This study was devoted to that purpose.

An experimental study demonstrating the effects of changed definitions of relationships on symptomatic behavior must include several crucial elements: (1) a method of defining and assessing relationships, (2) a chosen symptomatic behavior, (3) a method of treatment, and (4) a way of verifying changes in relationships and in the symptomatic behavior. In this study, definitions of relationships were measured by means of a schemata technique; enuresis was selected as a symptomatic behavior appropriate for the purposes of this study; parent education emphasizing communication skills was used as the method of treatment; and measures of self concept and manifest anxiety were used in the attempt to verify any changes in behavior. Each of these essential elements will be discussed in turn, in relation to a review of the literature.

CHAPTER II

REVIEW OF THE LITERATURE

Review of the literature has been undertaken for several reasons: (1) to delineate the context and background of the study, (2) to assist in defining the problem clearly, (3) to provide an empirical basis for the subsequent development of hypotheses. The review has been broken into three parts: (1) New Directions in Psychotherapy, which presents a rationale for the choice of treatment; (2) Use of Schemata which reviews the utilization of schemata in measuring definitions of human relationships; and (3) Enuresis, which discusses historical and current approaches to a problem behavior and considers relevant variables of personality to be used in cross-validating experimental results.

New Directions in Psychotherapy

The 1950's marked the beginnings of some profound changes in the thinking of people-changers. Such pioneers as Fromm-Reichmann, Bateson, Haley and Jackson began to question the traditional psychotherapeutic model, in which the individual symptom-bearer was considered to be the appropriate unit for diagnosis and treatment. Jay Haley (1970) speculated,

> It seems more likely that the shift from the individual unit in psychiatry was part of a more general change to an emphasis on social units. In the 1950's a variety of different fields became more socially oriented. The field of ethology developed when the investigators of

> animal behavior gave up looking at the individual animal in the zoo or the laboratory and began to examine them in their natural environments. In psychological experiments, the relationship between subject and experimenter was studied in the experimenter bias investigations. Hospitals began to be looked at as total institutions. In business and other organizations there was more of an emphasis upon a system and less upon the individual and his character. The cybernetic ideas of systems penetrated a variety of fields in the social sciences, bringing increasing concern with the context of a person and his relationships with others (p. 274).

A first step toward rejecting the traditional model in psychotherapy was a change in the explanation of schizophrenia (Haley, 1970). In 1948, Frieda Fromm-Reichmann coined the phrase "schizophrenogenic mother", thereby indicating a shift of attention from an individual to a dyad. A few years later, researchers led by Gregory Bateson in a communications approach to schizophrenia underscored the new direction by producing two innovative concepts: (1) the double bind, and (2) family homeostasis (Bateson, Jackson, Haley, and Weakland, 1956).

According to Jackson and Weakland (1961), "The double bind is grounded in our most basic conception about communication as the chief means of human interaction and influence (p. 33)," that is, that messages are never simple and single, but contain a number of different meanings at different levels all at once. The double bind is produced when conflicting messages are included within the same statement, as for example, a father's admonition to his son, "Do what I tell you, so you can learn how to be independent and make your own decisions." As Fullmer & Bernard (1968,

p. 30) have pointed out, even minor conflicting messages can result in disturbed relationships within the family.

Family homeostasis, as discussed by Jackson and Weakland (1961), refers to a dynamic steady-state in the family, analogous to the steady temperature band maintained by a thermostat. In other words, family members react to any changes in family interaction so as to restore the status quo typical of that family. Although the double bind and family homeostasis were formulated to explain behavior patterns in the pathological family, both concepts are also useful in viewing the less disturbed family. Jay Haley (1970) stated,

> When one accepts the idea that a problem involves more than one person and is a response to a current situation, it necessarily follows that symptomatic behavior is appropriate behavior. The symptom has an adaptive function in the person's intimate relationships and is not irrational or maladaptive. The diagnostic question is what sort of situation is provoking this kind of adaptation (p. 282).

It is evident that expanding the therapeutic focus from the individual to the dyad, the triad, and ultimately to the entire family, has required a corresponding shift from <u>persons</u> as problems to problematic <u>interactions</u> or <u>relationships</u> between persons. Satir (1965) explained the symptom of the Identified Patient as "a report about the individual wearing it and about the rules of the family system; and to understand the symptom one must understand not only the symptom wearer but also his family and the family system (p. 39)." Watzlawick, Beavin, and Jackson

(1967, p. 46), applying communications theory to the study of family interactions, have pointed out the fallacy of attempting to explain behavior by means of a linear cause-effect relationship. They postulated that family patterns of communication, expressed as either verbal or nonverbal behavior, are circular; and they warned that any given event may be seen as antecedent to any other given event occurring within the family, depending upon the arbitrary point which the observer chooses to begin explaining the circle of systematic behaviors. According to Watzlawick, Beavin, and Jackson (1967), "Communication theory conceives of a symptom as a nonverbal message: It is not I who does not (or does) want to do this, it is something outside my control, e.g., my nerves, my illness, my anxiety, my bad eyes, alcohol, my upbringing, the Communists, my wife (p. 80)."

Murray Bowen (1966) conceptualized the family as a combination of emotional and relationship systems. The term emotional refers to the force that motivates the system, and relationship to the ways it is expressed, including communication and interaction. Most families seek help when there is dysfunction in one or more of three main stress areas in the nuclear family system: (1) marital conflict, (2) dysfunction in a spouse, or (3) dysfunction in a child. Bowen believed it is important for the intervening agent to be viewed as a consultant, not as a therapist. "When the therapist allows himself to become a healer or a

repairman, the family goes into dysfunction to wait for the therapists to accomplish his work (p. 353)."

What are the implications of shifting from labeling and treating an individual to assessing and intervening in the social situation within which the individual is coping? Does it follow that the traditional model of individual therapy should be declared bankrupt? Must the agent of change intervene directly with all members of the family if changes are to occur? It is now understood that traditional individual therapy is actually one of the many possible ways to intervene in a family (Haley, 1971). If even one family member changes his way of relating to the others, all other family members will be constrained to adjust their behavior accordingly. In other words, any meaningful intervention leading to the redefinition of relationships within the family will predictably begin the process of resolving conflict and changing problem behavior.

What, then, are the characteristics of an appropriate treatment model for an experimental study demonstrating the effect of changes in relationship on behavior? Specifically, who should be treated, and what are the desired outcomes of treatment? Effective intervention may involve all family members or as few as one family member. The symptom-bearer (the child) may or may not be directly involved; but one or both parents preferably should be included, on the premise that they are the architects of the dysfunctioning family system producing the symptom. The treatment should provide

some means of reassessing and redefining relationships. This complex process involves several components: (1) changing unrealistic perceptions of self and significant others, (2) some degree of positive emotional involvement with significant others ranging on a continuum from simple good will to deep empathy, and (3) sending verbal and nonverbal messages congruent with the changes. A combination of information, intraspection, training in communication skills, and accurate feedback concerning progress is essential for accomplishing the goal of redefining relationships. It is expected that acting-out behaviors will no longer be necessary for signaling distress and conflict when the family has learned direct methods of communicating and productive ways of resolving conflict.

In 1962, Thomas Gordon, a clinical psychologist and former student of Carl Rogers, began designing a course called Parent Effectiveness Training (PET) for parents of children he was treating in therapy. His original purpose was to teach parents how to support at home the gains the children were making in therapy. It soon became evident, however, that if parents behaved in ways so as to enhance their children's emotional development, the need for therapy would be circumvented. PET, therefore, focused on preventing emotional problems and symptomatic behavior. Gordon claimed that through PET, parents could be taught effective ways of improving communication, resolving conflicts, and strengthening relationships within the family.

PET emphasized listening to the child on a feeling level and with deep understanding; avoiding "roadblocks to communication", i.e., negative interpersonal reinforcers; stating parental needs without ambiguity and without blaming; resolving conflicts by facilitating the process of creating solutions which meet the needs of all family members concerned, in a "no-lose" process. Relationships were expected to improve as family members felt they were being listened to and understood, and conflicts were resolved in a process of mutual valuing. (Gordon, 1970).

Few experimenters have investigated the effects of PET, and their studies are for the most part inconclusive because of defects in design. Researchers have consistently compared pre-treatment and post-treatment observations in order to investigate differences in such dependent variables as parental attitudes toward children, levels of parental communication skills, self-report measures of parents and children, and children's perceptions of their parents. Studies are flawed by such weaknesses as omission of randomization procedures (Haynes, 1972; Lillibridge, 1971; Stearn, 1970); failure to provide a control group (Cline, 1971; Peterson, 1971; Piercy and Brush, 1971); use of instruments of questionable validity for the constructs they profess to measure (Haynes, 1972; Lillibridge, 1971; Stearn, 1970); utilization of invalid test results because of using parents to test their own children (Lillibridge, 1971; Stearn, 1970); failure to control for interaction of treat-

ment and test effects by pretesting, using the same form of the instrument on both administrations (Cline, 1971; Garcia, 1971; Kilburn, Gerard,and Ray, 1971; Larson, 1972; Lillibridge, 1971; Piercy and Brush, 1971; Stearn, 1970); and omission of statistical analysis (Larson, 1970).

Despite the lack of valid experimental findings supporting the effectiveness of PET as a treatment model, it is evident, nevertheless, that the objectives of PET are compatible with the purposes of this study. PET has been selected, therefore, as an appropriate model for intravening in family relationships in order to influence interpersonal distances and, subsequently, to influence the frequency of symptomatic behavior.

Personal Space and the Use of Schemata

In 1959, Hall noted that interaction distance between persons of the same culture varies as a function of the relationship. Closeness indicates positive affect while distance indicates alienation. The informal language abounds in examples of this concept: "They feel close to each other." "Keep in touch." "Keep him at arm's length." "I wouldn't touch him with a ten-foot pole!" Hall (1966) defined interpersonal space as intimate, personal, social, or public. Each category has its own dimensions which are implicitly understood by members of the same culture. Violations of expected distance, therefore, communicate some meaning within the relationship.

In 1962, Kuethe developed a nonverbal technique for assessing psychological distance. His method, using felt figures of a man, woman, and child to be placed in free response on a felt board, was based on the notion that the way adults and children construct interpersonal space is a function of their social schemata, defined (Weinstein, 1968) as learned sets of meanings about relationships among people. Social schemata provide frames of references for organizing and responding to social stimuli. Inherent in this approach is the assumption that physical distance placed between symbols reflects projectively the emotional distance between the people symbolized. Kuethe found that most subjects responded to the task by giving organized responses; scattered or apparently random placement of the figures was rare. Human figures were grouped to a greater extent than nonhuman figures; and the tendency to place a child closer to a woman than to a man showed high commonality. Kuethe warned against overlooking the clinical significance of idiosyncratic responses, suggesting that responses of this type might reflect disturbances of normal social thinking.

An investigation of the meaning of idiosyncratic responses was conducted by Kuethe & Weingartner (1964), comparing the social schemata employed by overt homosexuals with those employed by non-homosexuals. The first series of tasks involved free placement of four sets of adult human figures and rectangles. The second series, using two pairs of like-sexed adult human figures and one woman-man pair,

involved a replacement technique (see Kuethe, 1962b). Subjects were allowed to view, for five seconds and from a distance of 10 feet, displays containing two figures. In each case the two figures were separated by a distance of 15 inches. The experimenter then removed the figures from the field and handed them to the subject, whose task it was to replace them exactly where they had been. Kuethe (1962b) had found earlier that the schema that man and woman belong together interfered with the judgment process, resulting in a consistent underestimation of the separating distance. For both series of tasks, non-homosexual penitentiary inmates employed man-woman schemata comparable to the schemata used by normal populations. "The fact that these inmates typically came from a much lower socio-economic level than did the normal population and had all committed serious crimes was not reflected in their sexual social schemata (p. 29)." Homosexual subjects, in contrast to non-homosexual subjects, frequently failed to pair man-woman figures, either allowing the figures to be separated by a rectangle, or placing the male figures in a separate group from the female figures. In reconstruction tasks, homosexual subjects consistently erred by replacing two male figures closer together than they replaced male and female figures. The authors concluded that both the free figure placement technique and the reconstruction technique may be used effectively for the diagnosis of homosexual patterns of social organization.

In 1966, Carlson and Price also tested Kuethe's

speculation that idiosyncratic responses might indicate disturbances in normal social thinking. They presented for free placement on a felt board nine sets of human and geometric figures, as described by Kuethe (1962a), to 40 adults, 38 "community adolescents", 40 delinquent adolescents from juvenile hall, and 40 pre-adolescents. All subjects except adolescents defined as delinquent were volunteers from middle-class neighborhoods. Results supported Kuethe's findings that model schemata are rather stable ways of organizing perceptions; but the hypothesized difference between delinquent and non-delinquent adolescent response was not supported, except for the finding that delinquent adolescents were significantly more likely to order a set of three rectangles by height than were the non-delinquent adolescents. This was interpreted as indicating greater conformity rather than deviation on the part of the delinquent group. In the combined adolescent groups, males showed a much stronger tendency than did females to place the child closer to the mother than to the father ($p < .02$), "suggesting, perhaps, that some Oedipal notions may be components of social perception in the adolescent male (p. 59)." Carlson and Price also found a tendency, approaching but not reaching significance, for delinquent girls to place figures of mother and child farther apart than they placed figures of father and child, in contrast to the responses of "community adolescent" girls. The authors concluded that "differences in social experience

implied in the status of delinquency make remarkably little difference in the present social perception task.... One possible interpretation is the familiar observation that delinquent and criminal persons do not differ from the general population in their knowledge of social expectations, although they do not always act upon this knowledge (p. 591)."

It should be noted that only nominal data were collected by Carlson and Price, with subsequent analyses limited to the less than powerful chi square technique. It is possible that if distances had actually been measured, and if the resulting interval data had been analyzed by parametric methods, differences between the adolescent groups might have been clarified. The need to explain findings in Freudian terms, incidentally, might have been circumvented by extracting sources of error variance due to sex by status interactions. Questions might also be raised concerning the comparability of the subgroup populations, on the grounds that middle-class volunteers may represent a cultural status different from that of adolescents defined as delinquent. Differences in sub-culture, if any, might reasonably contribute to apparent differences in schemata, rather than to lack of differences. The study would have been stronger, nevertheless, if information had been included assuring that this variable had been controlled.

Recent studies based on Kuethe's social schemata technique indicate that normal subjects perceive the closeness of relationships within the nuclear family in a

way different from the perceptions of symptom-bearing subjects. In 1965, Weinstein found that emotionally disturbed boys in a residential treatment school placed child figures significantly closer to the father figure and farther from the mother figure than did their normal peers. She interpreted this to mean that in contrast to normal children, emotionally disturbed children construe human beings as more separate and negative, singling out the mother-child relationship as particularly distant and negative. Weinstein raised the question whether effective treatment would be associated with changes in schemata. The following year, Hobbs (1966), in reference to the same subjects, said, "It is gratifying to report that children after the Re-ED experience put the child figure closer to the mother than they did before; that is, they structure interpersonal space as normal children do (p. 114)."

In 1967, Weinstein investigated the relationship between the responses of elementary school boys to replacement tasks and their perception of being accepted by parents. She found that boys who underestimated the distance separating man-woman figures felt accepted by parents and were also consistently chosen by classmates responding to a sociometric questionaire.

Replacement tasks were used by Blumenthal and Melzoff (1967) to test the hypothesis that schizophrenic performance deteriorates when presented with psychomotor tasks that have interpersonal content, especially when the content has

negative affect. Although the performance of schizophrenic subjects was found to be significantly inferior to the performance of control subjects, there was no systematic tendency for errors to take a direction in either group, indicating that content did not affect accuracy or the direction of error. The authors stressed the need to control extraneous variables, saying, "Close attention to such problems may help focus on genuine response differences rather than those that are artifacts of procedural differences (p. 127)."

Using free placement of human symbols, Fisher (1967) conducted a study having three objectives: (1) to compare the social schemata of normal children with those characterizing boys with school behavior problems, defined as placement in special classes for disruptive children, (2) to relate distances set between human forms by disruptive boys and the degree of hostility characteristic of their mothers, (3) to compare a group method of administering distance schemata with an individual method of administration. As hypothesized, normal boys and normal girls grouped human figures significantly more closely than did disruptive boys. The responses of normal boys did not differ from the responses of normal girls. Positive significant correlations between distances perceived by disruptive boys and their mothers' scores on the Buss-Durkee Hostility Scale indicated that children who place human figures at a relatively large distance from each other have mothers who are depicted as

angry and hostile. Finally, positive significant correlations between the group and individual methods of administering schemata indicated that a similar dimension was tapped by both versions of the technique. Fisher speculated, "Structuring one's responses in a 'distant' fashion may be a consequence of dealing with a mother who angrily pushes him away or perhaps of needing to remain far enough away from mother to avoid her aggression (p. 92)."

Gerber (1967), for her dissertation at UCLA, used doll placements to investigate the relationship between psychological closeness in families and emotional or behavioral symptoms in children. Subjects were members of 30 intact families including a son, aged 8-13 years, and at least one other child. Families were divided into three groups of 10 families each, including a normal control group, a group in which the boy had serious learning problems, and a group in which the boy had emotional or behavioral problems. Family members, first individually and then as a group, created stories to illustrate given positive and negative themes and then placed the dolls to illustrate what was happening. The major hypothesis, that members of disturbed families would represent the family as having less psychological closeness than would members of normal families was not supported. Boys of both disturbed groups, however, did place a greater distance between boy-mother dolls in negative story themes than did normal boys. Girl siblings in both disturbed groups unexpectedly placed greater distance between girl-

father dolls than did the girl siblings of the control group. Gerber also noted patterns of arrangement characteristic of the disturbed groups: parents in the emotional-behavioral problem group frequently grouped three dolls together and isolated the fourth; parents in the learning problem group typically grouped dolls in a semi-circle, partially turned toward each other. The semi-circular pattern was interpreted as emphasizing "togetherness" without describing any active involvement between family members.

In 1968, Gottheil, Paredes, and Exline studied parental schemata in recently admitted female psychiatric patients. A "self" magnet was placed in the center of a metal board, and subjects were asked to place other magnets representing father, mother, best male friend, God, and interviewer. Relative placement of self to father and mother did not differ for two groups of normal women used as control groups, despite differences in age, education, and socioeconomic level, indicating the apparent robustness of parental schemata. Patients placed the mother magnet at a significantly greater distance from self than did the controls. Following treatment, the mother-self distance decreased, but did not achieve significance. The authors concluded, "Apparently, in women, the identification with, closeness to, and feelings toward the mother are more crucial to the development of ego strength or emotional disturbance than the relationship with father (p. 418). It may be that not only the distances to mother and to father are important,

but also the relationship between these distances (p. 410)."

Also in 1968, Weinstein investigated the relationship between the mother-child schema, anxiety, and academic achievement in elementary school boys, on the assumption that a negative mother-child relationship would cause chronic anxiety in children. The schema was categorized as negative if the child placed greater distance between mother-child symbols than he placed between father-child symbols. The schema was categorized as positive if the child placed less distance between mother-child symbols than he placed between father-child symbols. Weinstein found that a negative mother-child schema correlated with high anxiety, as expected, but achieved significance for only one of two groups of experimental subjects. In both groups, the mother-child schema was positively and significantly related to previous achievement test scores. Weinstein concluded that a poor mother-child relationship may lead to anxiety or may instead lead to passive aggression. The child may try to avoid punishment, but he has given up hope of winning approval. Thus a negative mother-child relationship may interfere with the child's motivation to achieve socially valued goals.

Tolor (1968) failed to find hypothesized differences in responses to replacement tasks administered to disturbed and normal children. Judgments of disturbed children were generally less accurate than those of normal children, but

errors did not take any systematic direction. The author noted, however, that since the figures used were exclusively children and did not represent adults, the likelihood of eliciting unconscious reactions to parental figures was lessened.

Rubin (1969) compared the parental schemata of white and black primary school children. Subjects were chosen from the upper two-thirds of the class on the basis of previous intelligence test scores. All were classified by their teachers as achievers or underachievers on the basis of the teacher's judgment of reading and arithmetic achievement. Children were asked to place a symbol for self on one page containing a mother stimulus figure and on another page containing a father stimulus figure. Distances were measured, and Student _t_ tests were used to compare means. Rubin found that achieving white boys placed themselves significantly closer to mother than did all groups except underachieving black boys. Underachieving white girls placed themselves closer to father than did achieving white girls. Achieving black children tended to place themselves farther from both parents than did underachieving black children. The author suggested that distance may be related to independence. Rubin's study is difficult to interpret because of questionable statistical procedures. Analysis of variance would have permitted the extraction of interaction effects inflating the error term. Findings might also have been

clarified if a multiple comparison method of testing means had been used, thus assuring that the α level was protected.

Stratton, Tekippe, and Flick (1973) investigated the interpersonal distance responses of college freshmen classified as high, medium, or low in self concept, as defined by scores on the physical self, personal self, and social self scales of the Tennessee Self Concept Scale (TSCS). A student was classified as high or low in self concept if he scored at least two standard deviations above or below the mean, respectively, on at least two of the three subscales. A student was classified as medium in self concept if he scored within one standard deviation in either direction from the mean on all three measures. From a sample of 150 students, 33 subjects in all were selected to represent the three categories of self concept. In the first phase of the experiment, subjects were instructed to approach first a dressmaker's dummy and then the Experimenter from each side of the body in turn, stopping at a "comfortable distance". In the second phase, subjects were instructed to place man and woman silhouettes on a blank page at a "comfortable distance" from each other. Subjects were not asked to identify with one of the figures being placed. It was found that differing directions of approach did not produce differences in "comfortable distance". Findings showed, however, significant results for self concept; high self concept students approached both the dummy and the Experimenter more closely than did low self

concept students. In the silhouette placement task, distance trends were surprisingly reversed; high self concept students placed figures farthest apart and low self concept students placed them closest together. Correlations between the two tasks were significant only for the medium self concept group. The authors suggested that since subjects were not asked to identify with one of the silhouettes, this finding reflected a "culturally standardized" placement of figures rather than personal preference.

It is possible, however, that only the medium self concept group defined by Stratton et al. might be considered "normal". The TSCS (Fitts, 1965) provides both upper and lower limits separating normal from pathological responses, on the grounds that extremely positive reports may indicate troublesome, though carefully defended, aspects of self concept. For all three subscales chosen by the authors, a subject scoring exactly two standard deviations above the mean would lack only one or two raw score points of exceeding the upper limit. It is unclear whether or not Stratton et al. considered the implications of the upper limits provided and validated by the testmaker (Fitts, 1956, p. 17). One might also question whether valid results can be found from the responses of only 33 subjects assigned to three categories.

A number of studies validating and modifying the original Kuethe technique have been conducted recently at

the University of Hawaii. In 1970, Brien introduced the idea of using one-inch circles to represent people instead of using silhouettes. Objects were rated on Osgood's Semantic Differential; it was found that those characterized by positive affect were placed significantly closer to the self symbol than were those characterized by negative affect. Brien concluded that interactional distance is related to the subject's predisposition toward the person who is represented by the symbol.

In 1970, also at the University of Hawaii, Cade conducted two experiments in an attempt to obtain baseline data for family figure placements and to develop an instrument for measuring territoriality in family relationships. In the first experiment, an adaptation of Kuethe's figure placement technique was used to investigate all possible relationships between silhouettes representing father-mother-son-daughter. Samples were drawn from Hawaiian Orientals and Hawaiian Caucasians. Family relationship and subculture were found to be significant, while sex and all interaction effects were not significant. In his second experiment, Cade substituted one-half inch circles for the silhouettes used previously. The circle technique, subsequently named the Family Bond Inventory (FBI) and described by Fullmer (in press), presents gum-backed dots representing members of the nuclear family for free placement on an ordinary sheet of bond paper. Using this technique in order to investigate pairing distances and family distances perceived by American,

Filipino, and Japanese students, Cade found that the pair condition did not produce significant results in analysis of variance, but that family relationship within the group condition was highly significant ($p < .001$). The author concluded that relationships held across different subculture groups and that there was no difference when circles were used in place of human silhouettes.

In another study at the University of Hawaii, Hart (1971) conducted a study of interpersonal distance as a measure of alienation among middle class drug users. Half-inch circles representing human figures were again used in a free placement technique. According to their responses on a questionaire, students were classified in three groups: (1) non-drug users, (2) marijuana users only, and (3) drug users. Hare Krishna devotees agreed to participate as a fourth group. Analysis of variance failed to show significant differences among groups except for the distance between self and authority; a subsequent test showed that Hare Krishna devotees perceived significantly less distance between symbols for self and authority than did each of the other groups. When non-drug users and drug users were compared on the basis of previous directional hypotheses, however, one-tailed t test results showed that drug users placed significantly greater distance between father-self and sibling-self symbols than did non-drug users. Distances placed by the two groups between mother-self symbols were not significantly different. Differences in interpersonal

distance were interpreted as evidence of social alienation, a characteristic of the young, middle class drug user.

Bates (1974) for his dissertation at the University of Hawaii also employed half-inch circles in free placement technique to investigate interpersonal relationships in the primary family as perceived by separate samples of disadvantaged youths, with and without exposure to a treatment of "re-parenting". Re-parenting was defined as a system that provided for individual and group counseling, both by professional counselors and by trained peers, to assist the student in making the transition from his own culture or subculture to the prevailing culture of higher education. The re-parenting group functioned in ways similar to the interactions of the nuclear family. Measures of interpersonal distances were obtained from each of four different samples of students, grouped according to the amount of time each sample had been exposed to the re-parenting experience. Bates found that disadvantaged students who had been involved in re-parenting for at least three semesters perceived less distance in four of the six possible relationships of a four member nuclear family than did students lacking exposure to reparenting. Only the distances between father-mother and father-son were not significantly different when the two groups were compared. In comparing all four separate samples of students who had been exposed to differing amounts of time spent in the re-parenting process, the author noted that the greatest distances were

perceived by students who had been involved in re-parenting for two semesters, followed in descending order by students with one semester's experience in the program, and then by students lacking any exposure to re-parenting. It was suggested that the conflict of new ideas may have resulted in sufficient dissonance to release the bonds of relationship. When compared to a norming group (N = 212), students involved in re-parenting for at least three semesters perceived less distance in all six possible relationships within the nuclear family, as well as in a composite measure of total distance perceived. This finding was interpreted as suggesting that since most persons in modern society are alienated to a greater or lesser degree, this alienation results in a distorted norm. In other words, it was suggested that "re-parented" students are more normal than the norm in their perception of family relationships. A longitudinal replication of the effects of re-parenting on interpersonal distances perceived by disadvantaged students is currently in progress (D. Fullmer, personal communication, July 31, 1974).

In summary, it is evident that an impressive number of studies have illustrated the utility and validity of assessing psychological distance by means of the schemata approach. For this study, therefore, the schemata technique, and specifically the FBI, has been used to measure changes in the definitions of relationships within the family. The redefinition of relationships was measured by changes in

in interpersonal distances, a quantitative measure of the qualitative variable called interpersonal relationship.

ENURESIS

The purpose of this study was to investigate the effects of changes in family interpersonal relationships on the behavior of enuretic children and their parents. Any one of a number of different symptomatic behaviors might have been chosen as the basis of this investigation. There were several reasons, however, for selecting enuresis as the symptom defining a subject population for this study: (1) enuresis can be defined and reported with little ambiguity; (2) enuresis is a common and harrassing condition of childhood; its frequency is sufficient to ensure the existence of a large population from which to sample; (3) a sizeable percentage of subjects treated by current methods have failed to achieve dry behavior initially or to maintain it subsequently; no reasonable hypothesis to account for these failures has yet been generally accepted; (4) enuresis is generally understood not as a disease but as a symptom. Some theorists (Daniels, 1971b; Vogel and Bell, 1968) suggest that enuresis is a symptom reflecting a disorder in parent-parent and parent-child relationships; specifically, enuresis may be viewed as a message-oriented behavior combining both a protest and a plea for help when more direct channels of communications are blocked. For these reasons, enuresis has been selected as an appropriate symptom upon which to base a

communications approach to improving family relationships, thereby reducing the frequency of a chosen acting-out behavior.

Nocturnal enuresis is usually defined as the involuntary discharge of urine during sleep after the age of three to four years in the absence of demonstrable organic pathology (Lovibond, 1964, p. 4). It is generally accepted that organic pathology is an extremely rare cause of enuresis, accounting, at most, for only five percent of observed cases. Bedwetters are frequently labelled as either primary or secondary enuretics: the term primary or persistent enuresis implies night wetting from birth, while secondary, onset, or acquired enuresis denotes wetting that has recurred following at least six months of night time continence. Primary enuresis is more prevalent than is secondary enuresis, accounting for between two-thirds to three-quarters of all cases (see Dische, 1971; Starfield, 1972; Stehbens, 1970). It is generally accepted that psychological and environmental factors play a large part in causing secondary enuresis, while primary enuresis is frequently attributed to such causes as delayed maturation, small bladder capacity, excessive deep sleep, or faulty toilet training. Most studies provide the same treatment for both primary and secondary enuretics, on the grounds that there is no reason to believe that the two types should respond differently to symptomatic treatment (see Jones, 1960; Gillison, 1964; McAuley, 1969). Novick (1966) states, "There is, as yet,

little evidence to support the view that the two types of enuretics are fundamentally different, and no evidence that whatever differences between them are of practical or prognostic importance (p. 363)."

Forsythe and Redmond (1970) stated, "Enuresis is one of the most common and harrassing conditions in childhood (p. 211)." Miller (1966), reporting on the thousand family study in Newcastle-upon-Tyne, noted that 20 percent of children were enuretic at five years and 11 percent were enuretic at ten years of age. In a study of 9411 children enrolled in the first three grades of public schools in Galveston County, Texas, during the 1967-1968 school year, it was found that 18 percent of girls and 24 percent of boys were enuretic (Dodge, West, Bridgeforth, and Travis, 1970). In a recent household survey conducted in a large metropolitan area, 13 percent of six and seven year olds and 3 percent of thirteen and fourteen year olds were still wetting their beds more than once a month (Starfield, 1972, p. 343). Of 1275 patients receiving routine physical examinations at a pediatric clinic for indigent children, Starfield (1972, p. 343) reported that 20 percent were said to wet their beds more than once a week. Silberstein (1973) stated, "As many as 25 percent of children applying to children's clinics are enuretic. Of these, 40 percent are referred for other problems and the existence of enuresis is discovered by accident in the course of studying the child's other problems (p. 367)." The prevalence of enuresis is

greater in large families, and boys are more likely to be enuretic than are girls (Dodge et al., 1970). In fact, one in 50 Army draftees in World War II was still enuretic at age 18 (Thorne, 1944, p. 686). Incidence of enuresis is greater at early ages, falling at first rapidly and then more slowly until approximately age 14, when between two to three percent continue enuretic behavior (Lovibond, 1964, p. 5).

The question arises, "Should enuresis be treated?" As Sperling (1965) pointed out, "voluntary control of micturation is a custom sanctioned by society and not an organic necessity (p. 20)." Perhaps it would be preferable not to treat the condition because of the fact that enuresis as a symptom is known to disappear in the majority of cases some time near puberty. A number of authorities have argued to the contrary that the symptom should be treated. Schwartz, Colligan, and O'Connell (1972) stated, "To recommend 'waiting' to the parents of a five year old enuretic child because he will probably outgrow the enuresis gives the child only a 50-50 chance of achieving dryness over a five-year period, while harmless treatment approaches exist which can bring about success over a much shorter period (p. 170)." Dische (1971) noted, "The view that enuretic children should not be treated but will 'grow out of it' is not supported by fact.... In our clinics children who had failed to attend years ago have rejoined our waiting lists (p. 36)." Murphy, Nickols, Umphress, Hammar, Eddy, and Chapman (1971) saw

enuresis as a chronic condition, unrelated to the pubertal development of their adolescent subjects. Sperling (1965) suggested that enuresis continued into adult life may serve as a rationale for avoiding marriage by covering up an underlying sexual maladjustment. Silberstein (1973) stressed, "Unfortunately, children who remain untreated until puberty remain preoccupied with a problem other children have long since solved and so the symptoms interfere with learning, the development of friendships and more mature pursuits. Moreover, the untreated enuretic retains a poor self-image that persists into adulthood, influencing his character development and his adult life (p. 369)."

Treatment consistent with the purposes of this study should produce larger benefits than the mere stopping of a troublesome symptom. If parents can successfully learn new skills in communicating with their children, and if they can use these skills effectively in solving problems, the resulting hypothesized improvement in family relationships is expected to enhance the entire emotional development of the child, thereby preventing more serious problems from arising in the future. From this viewpoint, only an affirmative answer is a feasible response to the question of whether or not to treat enuresis. It will be shown that this approach is quite different from the vast majority of methods used to treat enuresis throughout history.

In a comprehensive review of historical literature surrounding enuresis, Glicklich (1951) noted that the first

known remedy for incontinence of urine dates from 1550 B.C. and included juniper berries, cyprus, and beer. The Byzantine compiler Paulus Aeginatus proposed treating weak muscles at the neck of the bladder with tonics of hot wine and oil, or with teas concocted of such exotic ingredients as the roasted crop of a rooster, or the flowers of the white chrysanthemum, or the shaved down testicle of a hare. In the first printed book on diseases of children, published in 1472, Paulus Bagellardus reviewed the conflicting literature of the day. Bagellardus himself urged attention to diet and exercise, and avoiding "accidents of the mind such as crying, immoderate exercise from anger (Glicklich, 1959, p. 861)" as preliminary measures for purging the body of unhealthful humors. Other remedies included dessicated hog bladder, the lung of a kid, ground hedgehog meat, and even a mechanical device consisting of a wisp of straw, used customarily for stopping a drain.

The first English book on pediatrics was published in 1544 by Thomas Phaer. His remedies for enuresis, in a paragraph entitled "Of Pyssying in the Bedde," included powdered goat hooves or hedgehog stones, avoidance of fat meats, and for the older child, perforated lead plates to lie on. In 1762, Thomas Dickson cited a case history in which a persistent bedwetter, not responding to threats, was promptly cured by the application of a blister to her os sacrum. A velvet-covered iron yoke, fitted to the penis and removed for urination, was described by Sharp in 1751.

By the 19th century, both the theories concerning causation and the treatments for enuresis had proliferated. Among the factors believed to contribute to the development of the disorder were congenital tendencies, deep sleep, lack of muscle tone, irritable bladder, dreams, faulty habit formation, neuroses (which were thought of as organic disturbances), night terrors, laziness, cowardice, and fright. Treatments included limiting fluids and regulating diet; cold sitz baths, or hot sitz baths; circumcision; a wide variety of drugs such as belladonna, strychnine, chloral hydrate, and cantharides (Spanish fly); the buttocks blister or steel spikes to prevent children from lying on their backs; making urination painful by cauterizing the orifice of the urethra with silver nitrate, by flagellation, or by stinging with nettles. Among the mechanical devices available for the unfortunate male child were various forms of penile clamps and bandages, resulting in some reported cases of accidental amputation of the penis, and even one method of hermetically sealing the penis with collodion. For girls, India rubber bags were introduced beyond the hymen in the vagina and inflated with air, thus compressing the lower bladder neck and urethra. Various methods of electrically stimulating the pelvis were widely used in the latter part of the century, with reports of wide-spread success. One of these, forerunner of the Crosby genital electrode apparatus and described by Nye in 1830, completed an electrical circuit through the body of the urinating child.

Some critics of these extreme measures advocated, instead, limiting fluids and emptying the bladder prior to bedtime, thorough medical examination, and the surgical correction of anomalies. Others advised the omission of treatment, believing that spontaneous remission would occur with puberty. Most critics agreed that punishment was ineffective, and that providing peace and loving care in addition to medication for the young patient was essential to recovery. Glicklich concluded her historical account of enuresis by emphasizing,

> Enuresis was born with the dawn of civilization and is still with us. Its history is long and colorful with prognosis for a longer and more exciting life before its problems are, if ever, resolved. Basically, enuresis is a symptom, not a disease, and as such it is only by greater understanding of the underlying pathology, be it organic or psychogenic, that we can ever hope to conquer it (p. 874).

Confusion about the causation and management of enuresis still persists today. Kolvin, Taunch, Currah, Garside, Nolan, and Shaw (1972) stated, "It is a condition which is ill-understood because of a tendency to ascribe it to one cause rather than to a number of causes, and because various physicians have approached the problem from their own specialist view-points. While treatment has ranged from magic[1] in earlier times to the more recent mechanical

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[1]It is possible that magical approaches to curing bedwetting may still be prevalent in folk medicine. In 1962, for example, the British Medical Journal cited a case apparently cured by the ingestion of "mouse pie."

devices, there has been little research into the efficacy of different treatments (p. 715)." Most treatments, regardless of theoretical basis, have resulted in some statistical measure of success, not a surprising phenomenon for a symptom reported by Mahony and Laferte (1973) to have an annual spontaneous remission rate of eight percent. As Silberstein (1973) noted, "Almost anything done to assist enuretic children to acquire control works with some, but many enuretics are ferociously resistant to treatment (p. 363)." According to Stehbens (1970), "Despite the many therapeutic measures employed, no method seems to be universally successful (p. 149)." Meadow (1970) stated that although the history of enuresis treatment must make one skeptical about any particular mode of therapy, the sympathetic doctor who has a clear plan of action which he carries out enthusiastically will achieve many successful cures.

Current methods of treating enuresis may be grouped under three major theoretical approaches: (1) enuresis is a physical disorder, requiring surgery or drugs; (2) enuresis is a learning deficiency, best treated by conditioning, sometimes in combination with drugs; (3) enuresis is a symptom of personality disorder, best treated by psychotherapy, sometimes facilitated by drugs. It is usually agreed, however, that these categories are not mutually exclusive. The author will defend a fourth approach, based largely on Daniels' (1971b) concept of enuresis as message-oriented behavior, and consistent with the new emphasis,

explored previously, of looking beyond the problem behavior of the problem child to problematic interactions and relationships within the family. The communications model differs in important ways from the traditional psychotherapeutic approach. When enuresis is viewed as a behavior symbolizing conflict within the family and communicating a protest or a plea for help, it becomes unnecessary to postulate that the enuretic must be severely disturbed. Typically, upon failing to demonstrate evidence of psychopathology in most enuretic children, behavior therapists have concluded that the symptom is unrelated to the emotional status of the child. Viewed from a communications approach, however, enuresis may be seen as behavior appropriate for the situation provoking the symptom, best treated by changing such environmental factors as disruptive family relationships and faulty methods of communication. Since each enuretic child's life situation is unique, the search for a typical "enuretic personality" may be abandoned. The question of symptom substitution also becomes irrelevant when the therapeutic focus is expanded to encompass the interactions of the entire family. It is presumed that acting-out behaviors will be disgarded as no longer serving any useful function once family members learn effective ways of resolving conflicts.

The following review of theories and experimental findings has been organized where possible under the headings of enuresis as a physical disorder, enuresis as a learning

deficiency, and enuresis as a symptom communicating distress. Studies combining a variety of approaches will be discussed in the category determined by the author's major interest. The communications approach to enuresis will be discussed in relation to each of the other orientations.

Enuresis As A Physical Disorder

Broadly interpreted, physical disorders may be construed to include not only anatomical anomalies, infections of the urinary tract and neurological disorders, but also such factors as congenital tendency, excessively deep sleep, and delayed maturation. It is generally accepted that at least 95 percent of enuretics lack demonstrable physical symptoms such as urinary tract anomalies or infections (see Kendall and Karafin, 1973; Mahony and Laferte, 1973; Meadow, 1970). Physical causes do exist and should be corrected, but these are very rare. Sperling (1965) and Meadow (1970) noted that when minor anatomical abnormalities are discovered and corrected, the frequency of the enuretic behavior rarely decreased for long, although the shock of surgery may produce temporary cessation. It was suggested that the child may interpret surgery as a punishment for his bad habit.

In 1970, Murphy, Nickols, and Hammar investigated the relationship between neurological dysfunction and enuresis as part of a comprehensive study of etiological factors in chronic enuresis. Twenty-seven enuretic adolescents without known neurological defects were compared to 22 non-enuretic

clinic patients. Some comparisons were also made with a group of 25 community controls. The groups did not differ in incidence of prenatal, neonatal, or childhood health problems often associated with central nervous system damage. No evidence of significant neurological impairment among enuretics was found by physical examination, EEG studies or psychological test indices. It was concluded that chronic enuresis does not appear to be related to any form of neurological dysfunction when epileptics, retardates, and children with obvious neurological diseases are excluded. Except for a possible difference in "irritable bladder", not investigated in this study, the authors stated, "With this exception investigators looking for the etiology of chronic enuresis may be advised to consider other, possibly more fruitful, areas (p. 275)."

Even in the absence of physical lesions or neurological findings, enuresis has sometimes been classified as a physical disorder on grounds that the tendency is inherited. Michaels (1955), studying 475 children attending a municipal summer camp, found that enuretics were significantly more likely to have a positive family history of enuresis than to have a negative family history. Cust (1958) found that the mothers of enuretics were significantly more likely to have been enuretic children than were the mothers of controls. Meadow (1970) suggested that there can be a familial tendency for late bladder control in the same way that there can be a familial tendency for late walking.

Researchers studying twins, however, have not produced clear evidence of any simple or strong pattern of inheritance (see Bakwin, 1971; Hallgren, 1957). Although Bakwin (1971) found that identical twins were significantly more likely to be wet or dry in pairs than were fraternal twins, no studies have been made of enuresis in identical twins reared apart. Bakwin supported his genetic theory of enuresis by citing Kaffman's study of children reared apart from their parents in the kibbutzim of Israel. Kaffman (1962) found that among 89 enuretic kibbutz children, there was a significantly greater prevalence of enuresis in other members of the family than in families of non-enuretic children. One out of four enuretic kibbutz children had a sibling who was a bedwetter. Unlike Bakwin, Kaffman did not interpret these findings as demonstrating a congenital factor in enuresis. To the contrary, he noted a significant correlation between enuresis and the child-parent relationship, even though toilet training had been entrusted to nurses with no direct interference by the parents. Kaffman stressed that neurotic disturbances and personality disorders were disgnosed significantly more frequently among the parents of enuretic children as compared to the controls, and that in approximately 25 percent of the enuretic children, enuresis was part of a well established clinical picture of emotional disturbance, ranging from marked behavior problems to organized neuroses.

MacKeith (1968) refuted the idea of inherited tendency

saying, "An inborn disorder operating only at night is hard to envisage (p. 465)." Sperling (1965) objected to the concept on the grounds that it provided the child with a rationale for enuresis, thereby exempting him from the responsibility for control. She believed that a family's tendency to enuresis is more aptly explained as the transmission of an attitude from parents to child than as an organic inferiority. Kanner (1957) suggested that the notion of inherited tendency should be disgarded, saying, "It would be more correct to speak of a family tradition of enuresis (p. 445)."

In 1960, Boyd tested the common notion that enuretics are characterized by excessively deep sleep. It was found that the time needed to awaken 100 enuretic subjects did not differ significantly from the time needed to awaken 100 control subjects. Boyd suggested that enuretic children, resenting being disturbed for toileting, may decline to respond to the parent, though not deeply asleep. She suggested, furthermore, that the notion that wet children sleep more deeply than do dry children is based on a lack of comparison, since parents seldom try to waken their non-enuretic children. Boyd's findings are supported by a number of sleep studies based on EEG tracings (see Ditman and Blinn, 1955; Murphy, Nickols, and Hammar, 1970). Pierce, Whitman, Maas, and Gay (1961) studied the sleep of eight enuretic boys ranging in age from five to nine years; they found that the enuretic episode is typically preceded by

30 minutes of increasing restlessness, with a change to delta deep sleep rhythm, just prior to the moment of bedwetting. Dreaming did not occur until approximately two hours after the time of initial enuresis. Pierce et al. hypothesized that an episode of enuresis is a dream equivalent; and they suggested that using amphetamines to lighten sleep may be correct on the basis that lighter sleep permits dreaming as a discharge phenomenon obviating the need for enuresis. They concluded:

> However, from a psychological point of view, from the dream content alone, we are able to state that these are disturbed children who are utilizing enuresis to discharge aggressive and sexual energy. Thus, sleep-lightening drugs are probably secondary to the identification with the physician in their therapeutic importance and indicate the necessity of a combined psychophysiological treatment approach rather than one of an either/or nature (p. 169).

It is widely stated that the failure of some children to become dry at night by age five is due to developmental variations. An unsigned editorial in the British Medical Journal (1969) stated, "Thus primary enuresis is probably in the main a combination of delayed maturation with a variety of psychosocial factors.... The question of prevention then arises. It cannot always be achieved because of the factor of delayed maturation (p. 64)." Miller (1966), concerning the thousand family study in Newcastle, concluded, "The social correlations were such that it is reasonable to think that most enuresis occurs in a child with a slow pattern of maturation when that child is in a family where he does not receive sufficient care to acquire proper conditioning (p. 688)."

MacKeith (1973), to the contrary, attributed the failure of some children to achieve dryness to "negative factors acting at the time maturation occurs (p. 364)." He refuted the argument that delayed maturation causes enuresis, postulating that maturation has occurred in nearly all children by the age of five, that night time bladder control is a behavior predestined to appear once maturation has occurred, and that it is analogous with walking, a behavior that will appear without teaching. MacKeith's position was more explicitly developed in an earlier paper (MacKeith, 1972). Based on a report by Brazelton (1962) that all but 1-1/2 percent of 1170 children trained by relatively stress-free methods had achieved nocturnal control by age five, MacKeith argued that it is inconceivable to assume that Brazelton's large sample was genetically different from other children. One must assume, therefore, that the maturation necessary for continence has occurred in at least 98-1/2 percent of all children by age five. He further stated (MacKeith, 1972),

> In the absence of extreme dehydration or administration of drugs at the time of the dry nights, a single dry night is proof that the necessary neurophysiological mechanisms for nocturnal bladder control are present and normal, and that maturation of the necessary neurophysiological mechanisms has happened (p. 220). I conclude that the bed-wetting child is not suffering from an "illness", any more than is an illiterate adult who never learned to read despite having the necessary mental mechanisms from age about seven (p. 221).

The controversy over the possible genetic etiology of enuresis may never be completely resolved. The evidence points clearly, however, to two facts: (1) a family

tendency toward enuresis can be demonstrated, and (2) the problem can be prevented for nearly all children, whatever their genetic make-up. Brazelton (1962) did not concede a physiological basis for even the minute percentage of his pediatric patients who were still untrained by the age of five years. Concerning the 16 out of 1170 children who still demonstrated disturbances of toilet functions at age five, he stated,

> Of these 16 children, 12 were enuretic after 5 years of age, 4 soiled in stress situations, and 8 had chronic constipation. There were environmental problems in all of these cases, and it was obvious that in each of these children the above symptoms reflected deeper disturbances of a psychogenic nature. But of the other 1,154 in the group, there were often similar environmental stresses present, and it is encouraging that these did not produce problems in the training area. This suggests that by allowing the child more freedom to develop his controls at his own speed, problems in such an area may be prevented, provided parental anxiety can be averted also (p. 127).

In the light of this evidence, congenital tendency seems a less parsimonious explanation of enuresis than does the communications approach of this study, seeing enuresis as one of a universe of acting-out behaviors used for signaling emotional distress when more direct channels of communication are blocked. Although the presence of enuresis may be interpreted as indicating disruption within the family, the converse may not be true. That is, absence of the symptom does not necessarily indicate that the family is functioning competently in resolving conflicts. Why some distressed children wet their beds while others remain dry is explained by MacKeith's notion that anxiety during the sensitive

learning period when most children achieve nocturnal bladder control is a critical factor impeding learning for the vast majority of enuretics trained by the usual methods (MacKeith, 1968).

It is presumed that distressed children who avoid disturbances of toilet functions through some stress-free training procedure such as Brazelton advocates, act-out the family conflict with different symptomatic behaviors. Testing this conjecture, however, exceeds the scope of the present study.

Enuresis as a Learning Disorder

Marvin Daniels (1971a), a vocal opponent of the habit deficiency theory of enuresis, has provided, nevertheless, a clear statement of the logic underlying the theory:

> Children are born incontinent. They learn to control themselves. Most children learn not to wet the bed at night. John and Mary are well along in years and still wet the bed. Therefore, John and Mary have not learned what they were supposed to learn. When children fail to learn, the fault, assuming their mental and physical faculties are intact, must lie in the teaching. It follows that enuresis is a habit of deficiency arising from improper or inadequate training (p. 26).

From the postulate that enuresis is a symptom of deficit, a failure to learn, it follows that the symptom should be attacked directly by means of conditioning. Symptom substitution cannot follow because there is no underlying conflict, only a state of deficit functioning (Werry, 1966). Experimental attempts to validate conditioning methods of treating enuresis, however, have been plagued by a trio of difficulties:

(1) successful arrest of the symptom is typically followed by a high rate of relapse (Bolton, 1972; Young and Morgan, 1973); (2) the symptom is so unstable that suggestion alone may produce improvement, as evidenced by the facts that spontaneous remission in wait list control subjects frequently exceeds the rate expected of non-subjects, and that placebo treatment often yields surprisingly positive results (Baller and Giangreco, 1970; Freyman, 1963; Kahane, 1955; Kolvin, Taunch, Currah, Garside, Nolan, and Shaw, 1972); (3) children and parents often resist treatment ferociously, suggesting that the family cannot tolerate the removal of the enuretic symptom (Bindelglas, 1974; Silberstein, 1973; Turner, Young, and Rachman, 1970), and thereby reducing sample sizes and weakening the experimental effects. Resistance, remission, and relapse are phenomena which are not readily explained by the theory of habit deficiency, and conditioning studies frequently conclude with a discussion of the questions left unanswered by the theory. For example, Freyman (1963) stated, "Growing experience with the bell apparatus has not yet produced a reliable means of predicting the outcome in each case. Neither are we quite certain about all the factors making for failure rather than success (p. 205)." Behavior therapists have often attempted to strengthen their position, therefore, by reporting the absence of substitute symptoms, usually on the basis of parental report. The argument has been succinct: if no deteriorated behavior is observed

after conditioning treatment for enuresis, it follows that no underlying conflict did, in fact, exist, and that enuresis is simply a habit deficiency requiring retraining.

It should be noted that the term conflict used in the behavior therapists' argument means psychopathology, evidence of severe disturbance within the symptom-bearing individual. This paper maintains that conflict does, in fact, exist, but that it is to be found within the enuretic child's larger social context. Unless relationships between significant persons within the family are redefined as the key to resolving family conflicts, enuresis--or any other acting-out behavior--will have communicative value. From this point of view, it is apparent that children who resume wetting after "cure" do not need substitute symptoms; they simply readopt the old one. The fact that children frequently resist, and even sabotage, treatment may be explained by the same argument. The puzzling failure of parents to cooperate with treatment procedures may indicate that the enuretic symptom has value for the entire family. Bindelglas (1974) illustrated this point in discussing a child whose mother discontinued his medication: "This case offers a good example of why there is really no basic cause for concern that symptom removal will cause more serious pathology. If the child and the family dynamics cannot tolerate the removal of the enuretic symptom, what frequently happens is that for one reason or another the medication is stopped (p. 45)." Unexpectedly high rates

of spontaneous remission and large placebo effects probably occur only within less severely disrupted families. It is postulated that if such families simply commit themselves to present or future treatment, their commitment alone may initiate the process of redefining family expectations and relationships. If children from such families are assigned to experimental rather than to control groups, it is not surprising that they respond to almost any kind of treatment (Silberstein, 1973). The present study has attempted to explore the relationships between family disruption as measured by the FBI, selected personality variables to be discussed later, and children's enuretic behavior.

In the conditioning treatment of enuresis as a habit deficiency, most studies are based on equipment devised by Mowrer and Mowrer (Mowrer, 1938) or by Crosby (1950). The most popular conditioning device consists of a urine-sensitive pad placed beneath the child's sheet. When the child begins to urinate, an electrical curcuit is completed and some kind of alarm is triggered. The prototype of this apparatus was devised by Pfaundler in 1904 to warn the attendant that the child was wet and needed attention; its therapeutic capacity was discovered by accident. The concept was rediscovered by Mowrer and Mowrer in 1938. In the procedure they outlined, the sound of the alarm causes urination to cease, wakes the child, and summons the attendant. The child is fully awakened and required to urinate. The apparatus is then reset and the child returns

to bed. Mowrer and Mowrer recommended that treatment be continued until seven dry nights occur, followed by seven further dry nights with an increased fluid intake before retiring. In 1950, Crosby devised a new instrument for the treatment of enuresis. Crosby's apparatus, similar to that described by Nye in 1830 (Glicklich, 1951), used an electrode attached to the genitals in place of the pad and delivered an electric shock to the loin area instead of sounding an alarm.

The rationale for the devices of both Mowrer and Crosby was based on the classical model of conditioning. In accord with this paradigm, the unconditioned stimulus (bladder distension stimulation) is paired with the conditioned stimulus (bladder distension stimulation) with the result that the bladder stimulus acquires the capacity to elicit the response (waking and sphincter contraction). Others have argued that the mechanism of the conditioning treatment of enuresis follows the operant avoidance pattern rather than the classical paradigm (Campbell-Fowler, 1972; Lovibond, 1964, Ch. 8; Place, 1954; Tough, Hawkins, McArthur, and Van Ravenswaay, 1971). In operant conditioning, the subject voluntarily and actively has to do something, either to obtain something or to prevent something from happening. Applying this model to the treatment of enuresis the subject is seen as learning nocturnal bladder control in order to avoid being disturbed by the unpleasant sound of

the bell or buzzer or by the unpleasant sensations of electric shock.

In early studies of the treatment of enuresis by conditioning devices, favorable results were often found, but adequate control procedures were lacking (Jones, 1960, p. 377). Forrester, Stein, and Susser (1964) remarked, "The claims of conditioning therapists to scientific validity for their methods have, however, as yet only a little more substance in controlled experiment than the claims of the psychotherapists with whom they are often at variance.... In the case of conditioning treatment for enuresis, we have searched the literature and found no trial which is acceptable by the usual criteria (p. 158)." Werry and Cohrssen (1965) concurred: "Most of the literature on enuresis is remarkable for the absence of controls, for the biased sampling, and for a lack of rigor in linking slender empirical fact with elegant theory (p. 423)." Lovibond (1960, Ch. 5) reviewed numerous studies and reached different conclusions: "Although many of the studies reviewed are deficient in the reporting of significant detail, the available evidence strongly supports the conclusion that direct conditioning methods are highly effective in arresting bed-wetting (p. 58)." Lovibond warned, however, that despite the high rate of initial arrest reported in these studies, the evidence regarding the rate of relapse is not so clear cut because of inadequate follow-up over too short a period: "It is apparent... that

the longer the follow-up period the higher the relapse rate tends to be (p. 59)."

The first controlled study of a conditioning treatment was reported in 1955 by Kahane, who found little difference between experimental and control groups. Although all 21 of his experimental subjects were dry for a month following treatment with the Mowrer apparatus, 62 percent relapsed from one to seven months following conditioning. In the wait list control group, 45 percent experienced spontaneous remission, with one relapse. Behavioral improvement, assessed by parental report, related significantly to symptom remission only in the control groups. Kahane concluded (1) that his results were discrepant from those of previous studies because of his use of control procedures, and (2) that "habit deficiency is not a heuristic concept for enuresis (p. 369)."

In the late 1950's, Lovibond began a systematic investigation of the conditioning treatment of enuresis, conducting both animal and field experiments in controlled trials. Questioning the classical conditioning rationale proposed by Mowrer and Crosby, Lovibond (1963a) tested the theory of avoidance conditioning by comparing the Mowrer and Crosby devices with a modification of the bedbuzzer apparatus known as the "twin signal". With the twin signal device, urination is signalled by the sounding of a klaxon for one second, followed after a short interval of silence by a continuous buzzer intended to summon the parent. Because

of previous resistance of parents and children to the Crosby genital electrode, pad type electrodes were used with all three instruments. It was hypothesized (1) that the twin signal, providing for escape from the aversive stimulus, would be more effective than either the Crosby or Mowrer instruments, and (2) that the Crosby device, because of the greater aversiveness of electric shock, would be more effective than the Mowrer device. Both hypotheses were supported by initial results. Two years later, however, follow-up interviews revealed a relapse rate of approximately 35 percent, with no difference among the three instruments in the rate of relapse. Lovibond noted that efficiency in acquisition is not necessarily related to resisting extinction. He concluded: "The high relapse rate following initial arrest of wetting suggests that maintenance of the original conditioning is an aspect of the total problem on which future research needs to be focused (p. 21)."

Attempting to reduce the relapse rate, Lovibond (1964, ch. 11) conducted a series of experiments to test modifications of devices and techniques. A false alarm procedure triggering the Mowrer bell for one group and the twin signal klaxon followed by buzzer for a second group was unsuccessful; although the procedure arrested all cases in the initial phase of treatment, later observations showed relapse rates ranging from 40 percent to 60 percent. In another experiment, the delay period between the two stimuli of the twin signal apparatus was eliminated; no reduction of

relapse rate was observed. A random alternation schedule was used in another experiment (Lovibond, 1963b) to test the effects of intermittent reinforcement on 16 subjects using the twin signal device. Parents were instructed to remove the apparatus from the child's bed on nights when no reinforcement was scheduled. It was found that intermittent reinforcement did not impair acquisition and that fewer children relapsed, although the reduction in relapse did not reach significance. The investigator suggested that replicating the procedure with larger numbers might produce significant differences in relapse rates favoring intermittent reinforcement.

In a separate study, Lovibond (1964, Ch. 11) reported the responses of 30 relapsed cases who were retreated with the same instrument used in the original conditioning. Unlike the successful results of retreatment customarily reported in the literature, Lovibond found that only 40 percent responded more rapidly the second time, while 30 percent responded at the same rate as before, and 30 percent unexpectedly responded much more slowly than they did in initial treatment. Some children relapsed several times, and three children failed to become dry with retreatment. The author commented, "Three subjects whose wetting had been arrested rapidly by initial treatment, and who had remained dry several months, required prolonged treatment (> 40 reinforcements) on the second occasion. No reasonable

hypothesis to account for these results can be offered (p. 130)."

Researchers studying the intermittent reinforcement techniques advocated by Lovibond have achieved differing results. Abelew (1972) in his dissertation study at Hofstra University, and Finley and Besserman (1973) found relapse rates significantly favoring intermittent reinforced subjects; but in both studies, the follow-up period lasted only 90 days. The results of a five year study published in 1970 by Turner, Young, and Rachman, however, failed to demonstrate any superiority of the intermittent reinforcement technique.

Difficulties with resistance, remission, and relapse were all evident in a study conducted by Forrester, Stein, and Susser (1964). The investigators had intended to assign randomly to experimental and control groups 118 enuretic children paired by age and sex. The experimental group was to be conditioned by means of an alarm apparatus, while the control group was to receive increasing doses of amphetamine in order to lighten sleep and to encourage waking for toileting. Before appointments could be made, however, nearly half of the intended subjects had either remitted spontaneously or had improved to the point of no longer needing treatment. The sample was further reduced when an additional 20 percent either defaulted (15 subjects) or were rejected as unsuitable for treatment (9 subjects). Only 33 of the original 118 subjects remained when results were

assessed six months later. It was found that the alarm treatment produced significantly better results that did the amphetamine treatment, the effect of which did not exceed the natural remission rate. Forrester et al. concluded that "depth of sleep may not be a determining factor in enuresis, and treatment to lighten sleep may be based on a false premise (p. 164)," and that "psychic influences are important in the control of the bladder at night, whether or not control is achieved by conditioning (p. 165)." The authors further concluded, but without stating a basis for their conclusion, "There is no evidence that alternative symptoms appear when enuresis is cured; there is much evidence that patient and family are relieved to be free of it (p. 165)."

Other attempts to counteract the problem of relapse by means of central nervous system (CNS) stimulus drugs have also proved unsuccessful (Turner and Young, 1966; Young and Turner, 1965). In 1966, Turner and Young of the Vale Drive Clinic in London reported follow-up data on 142 of 222 subjects originally cured by the pad-bell apparatus. One group had been treated by the conditioning device alone, while a different CNS stimulant drug (dexedrine or methedrine) had been added to the treatment of each of the other two groups. Follow-up over a period of from nine months to five years indicated that almost half of the subjects had relapsed to pre-treatment frequency of wetting, and that an additional 10 percent were still intermittently

wet or had relapsed in the past. Relapse rates in the groups combining drugs with conditioning were substantially higher than the relapse rate in the conditioning only group. It was concluded that stimulants facilitate the original arrest of enuresis, but that the speed of conditioning is positively related to the rate of relapse. Turner and Young noted, "We hope that it is now clear that a great deal of further research is necessary into reasons for relapse (p. 228)."

A variety of techniques have been tested by Young, Turner, and their colleagues at the Vale Drive Clinic in efforts to reduce the rate of relapse, which Young and Morgan (1973a) considered "a major drawback to the use of conditioning techniques (p. 219)." Problems with resistance and unexpected remission, as well as relapse, are constant themes in their studies. For example, in the previously cited study of Turner, Young and Rachman (1970), treatment for nearly half of the 81 subjects assigned to conditioning groups had to be terminated prematurely because parents failed to administer therapy as instructed. The authors stated,

> Twenty-five mothers reported that they could not cope, and they used the apparatus for only one or two nights. Two children persisted in switching off the alarm, and four fathers objected to treatment on the grounds that it interfered with their sleep. One child was dropped from the trial after repeated failures of equipment, and in seven cases treatment had to be terminated due to a variety of domestic problems (p. 374).

Although vacancies were filled by subsequent referrals to the clinic, the investigators were unable to achieve the full trial complement of 200 patients despite five years of research. Findings, based on 115 enuretic children assigned within two age bands to five treatment levels, including three conditioning approaches, random waking for toileting, and placebo tablets, were inconclusive. A few children in each group achieved the cure criterion irrespective of the type of treatment. Turner et al. concluded, "It is unlikely that there is a quick cure for enuresis (unless it occurs due to spontaneous remission), and in planning treatment one should make allowance for the treatment of relapsed cases... We still do not know what contributes towards the outcome of treatment and studies are required to provide more precise information about the relative importance of the postulated conditioning process, spontaneous remission and non-specific treatment agents (e.g. social pressure, arousal of the child, placebo effects) (p. 379)."

In 1965, Young investigated the relationship between personality factors and response to conditioning treatment of enuresis, finding that the rate of relapse was significantly greater among extroverts than among introverts, as defined by the Junior Maudsley Personality Inventory, and verified by the subjects' teachers. Morgan and Young (1972), in agreement with Stein and Susser (1967), supported the view that environmental stresses rather than innate personality disorders are responsible for interference with

the normal process of acquisition of bladder control. They urged that the enuretic child not be punished and that any parental attitudes likely to increase the child's stress be discouraged. Such management practices as restricting fluids and waking for toileting were viewed as detrimental to the conditioning process. In an investigation of factors influencing the rapidity of response to conditioning treatment, Young and Morgan (1973b) found no relationship between the rate of response and sex, age, the number of somatic or psychological symptoms, or failure of earlier treatment. They also failed to replicate Young's earlier finding that the extroversion/introversion dimension is related to response. Young and Morgan concluded that the strongest factor associated with slow response is a child's failure to wake to the sound of the buzzer, and that the mother is a central figure in treatment, her own anxiety being associated significantly with her child's rate of progress.

Overlearning appears to be the procedure currently advocated by the staff of Vale Drive Clinic as the most effective variation of conditioning techniques. As described by Young and Morgan (1972, 1972b), this procedure required the child to maintain or relearn bladder control while drinking up to two pints of liquid in the hour before bedtime. A four year study of the use of the overlearning technique indicated that subjects whose treatment included a period of overlearning therapy relapsed significantly less frequently than did those subjects treated by conditioning

procedures alone (Young and Morgan, 1972b). An exhaustive search of the literature, however, has failed to reveal replications of this procedure published by other investigators.

Studies by Werry and Cohrssen (1965) and DeLeon and Mandell (1966) are frequently cited as evidence that conditioning treatment for enuresis is significantly superior to psychotherapeutic treatment (see Fraser, 1972; Stehbens, 1970; Morgan and Young, 1972). The alleged superiority of conditioning compared to psychotherapy in treating enuresis, however, rests on slender evidence indeed. In Werry and Cohrssen's study, comparing the effects of no treatment, brief psychotherapy, and bedbuzzer treatment on 70 subjects drawn from the enuresis clinic of a pediatric hospital, the over-all cure rate was so low that the significance level was reached with only seven conditioned subjects achieving dryness. As the authors noted, "A four month therapeutic trial showed the bedbuzzer is significantly more often successful than brief psychotherapy and no treatment, which do not differ from each other in efficacy. However, only 30 percent of cases were cured with the bedbuzzer, and no reason for the failures could be determined (p. 430)." Werry and Cohrssen also stated that symptom substitution "was not observed in any of the cases undergoing cure, though the observation was certainly not intensive (p. 429)." No follow-up data concerning relapses were reported either in this study or in a later paper (Werry, 1966), which

suggested that the low cure rate found in Werry and Cohrssen's study "was due in part to our dealing with a more severe group in which placebo reactors had also been largely eliminated before referral (p. 225)." In the later paper, Werry (1966) also clarified his position on symptom substitution:

> Actually, one cannot but reflect that the whole concept of symptom substitution is somewhat meaningless. Obviously, human behavior is always changing and adapting in an ongoing manner and, depending on how one approaches behavior theoretically, anything could be viewed as symptom substitution. It is such an elastic concept that there are serious doubts about its utility, especially when it is used as an argument against the use of a relatively effective therapeutic procedure such as the bedbuzzer (p. 229).

DeLeon and Mandell (1966) compared conditioning and psychotherapy in treating 87 children diagnosed as functional enuretics and referred to a community mental health center. The authors failed to reveal by what criteria subjects were assigned to treatment levels, but the procedure was evidently not random, since the group numbers did not approach equality. Conditioning was used to treat 56 children, while the psychotherapy and no treatment control groups contained 13 and 18 subjects respectively. Length of time spent in treatment also differed among the three groups. In the conditioning group, treatment was terminated for some subjects after 90 days of failing to reach the cure criterion of 13 successive dry nights, but "some subjects remained in treatment as much as 6 or 12 months before reaching the success criterion." Treatment time was

restricted to 90 days, however, for the control group and for the psychotherapy groups, who received 12 hours of therapy within that span. A cure rate of 86 percent was achieved in the conditioning group, a result significantly superior to the rates observed in the other two groups. Although nearly 80 percent of the conditioned subjects later relapsed, the authors noted that children were less wet in relapse than they had been prior to treatment, and that the re-training time was rapid relative to initial training. It was suggested that firm conclusions concerning the efficacy of psychotherapy for functional enuresis await "the exploration of other related parameters such as the form of the therapy, the number of therapeutic sessions, intersession time, and individual differences among therapists as to skill and experience (p. 330)."

Four years later, DeLeon and Sacks (1972) reported follow-up data on 21 of the 44 enuretic children from the previous study, (DeLeon and Mandell, 1966), who had been successfully treated by conditioning procedures. These data were compared with follow-up data obtained on 8 of the 11 children who had received psychotherapy in the original study. It was found that the two groups were not different either in the percentage dry or the severity of wetting. In an effort to explain these unexpected results, DeLeon and Sacks compared the ages of the two groups, finding that the mean age of the "recaptured" psychotherapy group was significantly higher than that of the conditioned group.

They concluded, "For the psychotherapy group, then, the reduction in the percentage of subjects who were wetting and in the severity of wetting is consistent with the age changes reported in the literature. Thus, despite the possibility of an interaction between intercurrent age effects and those of initial training, it is clear that the conditioning procedure produced rapid cures which were maintained over a four year period (p. 300)."

This conclusion is questionable. One may suspect experimental bias in a rationale which attributes the improvement of one group to treatment effects, while discounting the similar improvement of a second group as due to maturational effects alone. The investigators pointed out, "The recaptured subjects did not represent a biased subsample of the original conditioned group (p. 299)," in regard to age or pre-treatment severity of enuresis. Questions concerning the validity of the original study may be raised, therefore, by the subsequent finding that the mean ages were significantly different when this "unbiased subsample" was compared with 73 percent of the subjects who had received psychotherapy.

Spontaneous remission and almost complete absence of relapse nullified experimental differences in a study reported by Baller and Giangreco in 1970. A special pad-light apparatus was used to treat 40 enuretic deaf children in a training institution. The children were randomly assigned to experimental and control groups. Because the

conditioning devices available were limited in number, only two or three children could be treated at the same time, and more than a year elapsed before the entire experimental group had completed treatment. Unexpectedly, it was found that by the time treatment had ended, all subjects, both experimental and control, had achieved and were maintaining dryness, with one temporary relapse. This finding was attributed to "vicarious sharing in an experience of victory (p. 548)." Whatever the dynamics involved, it is clear that conditioning theory alone is not a sufficient explanation.

In a study of 200 children treated with the pad-bell apparatus, Forsythe and Redmond (1970) achieved a long term cure rate of less than 60 percent; but cures were unusually well-maintained, in comparison with other studies, and few subjects refused to cooperate. Only 30 of the initially cured 132 children relapsed over a period ranging from one to two years, and only 13 of those who relapsed failed to respond to retreatment. No explanations were offered for their comparatively low rate of relapse. One may conjecture, however, that unless this population differed considerably from the subjects of other studies, some fortuitous procedure in the management of the families, such as a positive relationship with the therapists, may have been involved. One may also question whether a theory of habit deficiency is an adequate explanation of the 45 subjects who failed to respond to treatment at all.

Dische (1971) stressed the importance of sympathetic handling of enuretic children and their parents. Encouragement and "simple measures" such as advising the parents, establishing rapport with the child, and charting dry behavior, produced dryness in 37 percent of her 126 subjects with only one temporary relapse. Most of the remaining patients responded to the buzzer, with a subsequent relapse of 21 of 70 successfully treated patients. Dische concluded, "It would seem that children becoming dry on simple measures remain so. One may surmise that particularly in those aged 8-14 years (20 of the 47) the attainment of dryness in a reasonable time is attributable to the alteration of the emotional climate (p. 35)." It was suggested that simple measures should be tried before other treatment is given, that parents and children will readily cooperate with buzzer treatment if adequate explanation and supervision is given, and that social support for the family is essential to successful outcome of treatment. "It is obvious that easier relationships are established when the family is helped with its various problems by the same team. It is doubtful whether some parents could have co-operated in the treatment of the child were they not being simultaneously helped with their other difficulties (p. 36)." Dische also noted that simple measures alone produce better results than do the antidepressant drugs, as reported in published studies.

The search for a safe, reliable drug to be used alone or in conjunction with conditioning treatment has not yet been successful. Sleep-lightening drugs have proved ineffective (Turner and Young, 1966; Young and Turner, 1965), and the tricyclic antidepressants such as imipramine ('Tofranil') have yielded high rates of relapse. Poussaint and Ditman (1965) found that only 11 of 47 cases treated with imipramine remained dry after two months of medication, in a follow-up period of from one to three months. Shaffer, Costello, and Hill (1968) found that 20 out of 56 children achieved dryness while on the drug, but all except two relapsed after it was withdrawn. Similar high rates of relapse were found also by Kardash, Hillman, and Werry (1968), Miller, Champelli, and Dinello (1968), and Martin (1971). The exact action of imipramine on the CNS is still unknown. Some have suggested that it works by relieving the child's depression (Silberstein, 1973), or because of its anticholinergic action, making it difficult for the patient to urinate (Kardash et al., 1968; Prutting, 1973). Martin (1971; 1974) hypothesized that the drug compensates for the immaturity of the enuretic's neural pathways by changing the level of sleep so that all the factors necessary for initiating urination never materialize. Others have warned that serious side effects and the possibility of accidental fatal poisoning indicate that the drug should not be used solely for its effect on enuresis (Fraser, 1972; Parkin and Fraser, 1972; Prutting, 1973).

In 1969, McConaghy conducted a controlled trial of imipramine, amphetamine, pad and bell conditioning, and random awakening in the treatment of enuresis. Imipramine initially produced a significantly superior response, compared with placebo, but there was considerable relapse when the drug was gradually withdrawn. Amphetamine proved of little value. It was concluded that conditioning is the treatment of choice.

Kolvin, Taunch, Currah, Garside, Nolan, and Shaw (1972) conducted a study having two purposes: (1) to undertake a descriptive analysis of an unselected (non-patient) sample of bedwetters; and (2) to compare the results obtained from treatment with imipramine, a buzzer and pad, and a placebo. Subjects were 94 children, aged eight to ten years, and wetting at least three times each week, as reported by parents on a school survey questionaire.

The descriptive analysis revealed that males exceeded females in a ration of 60:40, that there had been a slight delay in a major motor milestone (learning to walk), and that there was an excess of children of lower socioeconomic status. In one-third of the families, one parent had an emotional disturbance; and approximately 30 percent of the children themselves were rated as being psychiatrically disturbed. According to mothers' reports, however, the enuretic group was assessed as cheerful and outgoing, showing little extreme behavior, except that a high proportion of the children demonstrated easily hurt feelings,

and they were high-strung, over-reactive, or highly modest. A family history of enuresis was found in more than 60 percent of the cases, and more than 75 percent of the children were primary enuretics. The authors warned, however, "That the symptom continues the same does not mean that the cause has remained the same (p. 719)." In summary, the authors stated, "This analysis suggests that enuresis is basically a delayed learning of a habit pattern and that there may also be an important familial component involved. It is concluded that the major factor in enuresis is a disorder of development, which may be compounded by psychological features (p. 724)."

In the controlled trial of Kolvin et al., it was found that children receiving imipramine relapsed rapidly after the drug was withdrawn. The conditioned subjects achieved an over-all rate of improvement of approximately 59 percent which was maintained at the final observation, two months after the end of treatment. In an unexpected and unexplainable finding, the children receiving placebo achieved an over-all rate of improvement almost equaling the conditioned group, and this improvement also was well-maintained at the final observation. It is evident, again, that enuresis is an unstable symptom, frequently affected by suggestion in a manner that is difficult to explain in terms of learning deficiency theory.

A different kind of conditioning approach, based on successive approximation, was proposed by Muellner (1960).

Arguing that most five year old children, as compared to two-year-olds, have doubled the functional capacity of the bladder through the exercise of voluntary urinary control, he suggested a regimen of bladder training. In the procedure Muellner outlined, fluids are forced during the day and the child is encouraged to hold the urine as long as possible. A satisfactory bladder capacity should be achieved within three to six months, depending on the size of the organ and the cooperation of the parents.

Studies of the Muellner technique have produced conflicting results. Hagglund (1965) found that the regimen failed to demonstrate a significant therapeutic effect or a significant change in bladder capacity. Kimmel and Kimmel (1970) reported the cure of three trial subjects. In a later controlled study (Paschalis, Kimmel, and Kimmel, 1972) based on 31 subjects, 15 children achieved cure status, eight children showed significant improvement, and eight others failed to respond. Rocklin and Tilker (1973) failed to confirm the results reported by Kimmel and Kimmel (1970); although all subjects improved over time, control subjects recording base-rate behavior did not differ from the reinforced experimental subjects in the increased frequency of dry nights. Starfield (1972) of Johns Hopkins recommended the procedure as an approach to the "successful and permanent cure of the bedwetting symptom (p. 348)." Werry and Cohrssen (1965), however, questioned the rationale of the Muellner technique:

> Muellner does not explain how this failure of adequate learning occurs except to imply that it is purely fortuitous or, in short, that enuresis is a 'maturational' type of disorder since children normally show a variation in the speed with which they acquire different skills. However, hereditary factors could influence this sensorimotor control, as, indeed, might a high degree of anxiety which, by making the bladder irritable, could reduce its functional capacity. Why some children with reduced bladder capacity wet the bed while others waken and go to the toilet is still not clear since the hypothesis of deeper sleep in enuretic children has little valid support (p. 424).

In an experiment based on the concept of operant avoidance conditioning, Tough, Hawkins, McArthur, and Van Ravenswaay (1971) devised a "higher magnitude punisher than the bell alone" for treating first an eight year old boy, diagnosed as cerebral palsied, legally blind, severely emotionally disturbed, and mentally retarded, and then his normal four year old brother. The purpose of the study was to obtain a faster response than the "modal treatment lasting 2-3 months, with a cure rate as low as 30 percent." On hearing the alarm, the mother was instructed to strip the child, wet him thoroughly in a tub of cold water, drawn previously, and change his sheets. The older child experienced his first dry night after ten nights of cold baths, administered on an average of 37 seconds after the alarm sounded. The entire family was instructed to praise him enthusiastically during breakfast following a dry night. Wetting was eliminated by the 22nd night.

The younger child also experienced his first dry night after 10 nights of cold baths, followed by almost complete suppression of enuretic behavior. Contrary to advice, the

mother removed the equipment prematurely. When wetting resumed after a few weeks, she elected to postpone further treatment. More than a year later, when the mother agreed to resume training, "the contingency was applied very inconsistently due to malfunctions of the apparatus and the child's urinating off the pad upon several occasions. Finally the mother became discouraged, felt she was expecting too much from the child, and terminated both training and data recording (p. 573)." The authors concluded that using cold baths to punish enuretic behavior produces remission much more rapidly than is typically reported. They suggested that punishment procedures, if used, should be milder than the application of electric shock to the genitals, yet stronger than the bell alone. The family dynamics obviously involved in this case were not discussed.

Hurley and Drummond (1972) shared the apprehensions of Tough et al., regarding the genital electrode device, saying, "It is stated that the apparatus will cure the problem in 72-83 percent of enuretic children, depending on the state of the child's meatus or spinal cord tumour. Nothing is mentioned, however, about the possible psychological effects of having one's genitals shocked, particularly during adolescence. The difference between the shock-treatment method and spanking the child promptly after each bedwetting episode is obvious. The parent does not need to remain

awake waiting for the child to void. Surrogate spankers are hard to find (p. 748)."

Benjamin, Serdahely, and Geppert (1971) suggested that classical conditioning is clearly not the method by which most children learn to be dry through the night, and that the operant conditioning model is a likely alternative explanation. On the hypothesis that the operant conditioning model is implicitly used by parents in night training, ninety parents were asked to rate their youngest night-trained child on a questionaire describing parent-child interactions concerning night training. Significant results indicated that efficient night training is associated with a discriminative stimulus (switch from diapers) and rewarding success with positive interpersonal reinforcers, the most effective being hugging and kissing. Negative interpersonal reinforcers, such as shaming, rejecting, spanking, and name calling, significantly retarded learning. The learning model proposed by Benjamin et al. is clearly congruent with the approach of this study. It is evident that parents who consistently have employed positive interpersonal reinforcers, avoiding negative interpersonal reinforcers in encouraging their children to become dry at night, are likely to have avoided the disruption in relationships postulated by this paper to be basic to the problem. It is not surprising, therefore, that practices communicating positive regard of parent for child are also associated with efficient night training. It was expected that by means of

PET, the treatment proposed for this study, parents of enuretic children would learn these skills and how to use them, thereby initiating the process of redefining family relationships, resolving conflicts, and changing problem behavior.

In summary, it has been shown that the learning deficiency theory of enuresis rests on the assumption that no underlying conflict, defined as individual psychopathology, exists. Psychopathology in children, following the generally accepted definition of Glidewell, Mensh, and Gildea (1957), is related not so much to the type of symptom as it is to the number, duration, and severity of such symptoms, the most valid relationship being with the total number of symptoms exhibited. Unless the enuretic child also exhibits (or the parents complain about) several other symptoms in addition to bedwetting, he is considered to be persisting in immature behavior simply because he has not yet learned how to control his bladder at night. Two pieces of evidence are used to support this argument: (1) although a genuine though small excess of emotionally disturbed children probably exists in the total enuretic population (Werry and Cohrssen, 1965; Werry, 1967), the evidence against a significant incidence of emotional disorder in enuretic children is impressive (Fraser, 1972; Mahone and Laferte, 1973; Meadow, 1970; Tapia, Jekel, and Domke, 1964); and (2) most investigators report the absence of symptom substitution following successful treatment of enuresis by means of

conditioning devices. In this paper, however, it has been emphasized that learning deficiency theory does not adequately explain the frequent occurrence of family resistance to treatment, unexpected remission, and especially, high rates of relapse.

Daniels (1971a) urged that the matter of relapse rates should be reexamined, pointing out,

> In Lovibond's groups, most relapses occurred within twelve months after the initial course of treatment, but a good number of enuretic children relapsed much later than that. Why should children relapse after they have presumably learned or even "over-learned" a response which supposedly brings such satisfaction to them and their parents? If the original problem was simply one of not having developed a habit, how is it that the new-formed habit does not persist? Do some children need or want to remain enuretic (p. 27)?

Daniels argued that the relapse rate, that is, the extinction rate of the acquired behavior, does not fit the paradigm derived from animal experimentation, since the response to retreatment following relapse often occurs more slowly than did the original conditioning, instead of more rapidly, as expected. It has already been noted in this paper that some relapsed cases fail to respond at all to further courses of treatment, even though they achieved "cure" status in the initial treatment (see Forsythe and Redmond, 1970). In a further argument, Daniels maintained that reports denying the occurrence of symptom substitution are unreliable, since they are based almost entirely upon parental report. Werry (1967), as previously noted, also attacked the hypothesis of symptom substitution, although

from a different perspective, arguing that the concept is so elastic as to be, for all practical purposes, irrefutable and non-falsifiable.

Enuresis as a Symptom Communicating Distress

If most cases of enuresis, therefore, are not adequately explained as the product of physical disorder, or of habit deficiency, or of psychopathology, what other reasonable hypothesis of etiology can be proposed? Daniels (1971b) maintained that enuresis is, in fact, psychogenic in origin. He viewed bedwetting as a message-oriented behavior, combining both a plea for help and a protest, which translates into the vernacular as "Piss on you!" Whatever the child's particular problems in living, Daniels maintained that enuretic behavior occurs under two conditions: (1) when the usual channels of communication are blocked, and (2) when the mother focuses a high degree of attention on urinary activities. The child does not believe that he can get through to his parents in the ordinary course of events; that is why he resorts to enuretic body language. It is important to point out that the enuretic appeal signifies that the child has not lost hope entirely. Since he is still actively protesting and has not lost hope, the child is seen as a good therapeutic risk. It is suggested that his enuretic behavior would no longer be necessary if the family could learn new ways of communicating, thereby

initiating the process of redefining relationships and resolving conflicts.

It is apparent that treatment consistent with the rationale of this study cannot be arbitrarily imposed on subjects; rather, it requires the voluntary and strenuous efforts of parents to change long-standing patterns of dealing with family members. These patterns, though faulty and producing stress, have presumably been reinforcing, as evidenced by the fact that they have continued to exist. It is evident, therefore, that resistance to change may be anticipated regardless of the kind of treatment presented, according to the principle of family homeostasis discussed previously. Remission prior to treatment may also occur in some children whose parents simply commit themselves to treatment. To the extent that the family is able to learn and to use new skills in communication, however, enuretic behavior is expected to decrease and to cease; relapse is not expected to occur while more direct channels of communication remain open.

PET, the treatment selected as appropriate to the rationale of this study, may result, therefore, in the same resistance, remission, and perhaps also relapse that were unexplainable in terms of habit deficiency theory. Seeing enuretic behavior as communication appears, nevertheless, to be the most parsimonious explanation, since failures as well as successes are accounted for by this approach. It is also evident that this communications

approach is broad enough to include the minority of enuretic children who exhibit a sufficient number of symptoms to be labelled "disturbed". Labels are irrelevant, however, when one looks beyond the individual symptom-bearer to the disrupted relationships provoking the problem behavior. The communications approach emphasizes the concept of children as members of families and parts of groups, looking at the forces impinging on the individual from the environment.

Nearly all the literature on enuresis mentions emotional factors as contributing to the condition, but it has been shown that many authors reject psychogenic etiology on the grounds that most enuretics are not severely disturbed. Others argue that enuresis is a sign of disturbance in the child's emotional life (Biggar, 1966; Glicklich, 1951; McAuley, 1969; Schacter, 1968; Sperling, 1965; Stokvis, 1954). Descriptive studies of bedwetters indicate that the symptom seldom exists in isolation (Katz, 1972; Murphy, Nickols, Eddy, and Umphress, 1971; Starfield, 1972, Wolff, 1971). No single personality pattern is typical of the enuretic (Daniels, 1971b; Sperling, 1965, Wolff, 1971); but Sperling (1965) postulated that they share a common inability to tolerate emotional tension, with an urge for immediate discharge of this tension and for immediate gratification. Murphy et al. (1971) found that enuretics exhibited both significantly greater submissiveness and significantly greater aggressiveness than did clinic control patients; this apparent contradiction was interpreted as supporting

the theory that enuresis is an expression of hostility in a submissive child. Stein and Susser (1967) postulated that enuresis is the involuntary manifestation of persistent anxiety; and Greenacre (1945) stated that urination is one of the readiest outlets of anxious tension, closely related to weeping. According to Bolton (1972), enuresis "may at times be almost the only obvious expression of anxiety in a child whose infantile demands are not being met and can only maintain his dependence on his mother in this way (p. 691)." Taylor (1972), postulating that anxiety is the causal factor in excessive frequency of urination, described the successful desensitization of an adolescent girl who reported sensations of urinary urgency in response to anxiety-provoking items rather than the usual reports of anxiety. Murphy et al. (1971), failing to demonstrate greater anxiety among enuretics than among clinic controls, suggested that the personality test they used to measure anxiety may not be valid. It should also be noted, however, that anxiety may not be demonstrated by some enuretic children by reason of its having been converted to the symptom of urinary urgency and discharged through bedwetting. By way of analogy, Neal Miller postulated in his studies of visceral learning that rises in blood pressure are self-reinforcing because they muffle the full effects of the patient's anxiety (Jonas, 1972).

Stress during the years of early childhood appears to be a critical factor in producing enuretic behavior. In 1958,

Cust found that enuretics were significantly more likely to have had severe illnesses, often leading to hospital admission, between the ages of one and three years than were non-enuretic controls. MacKeith (1968, 1973) specified anxiety, illness, disturbances within the family, and anxiety-provoking toilet training practices as the critical negative factors preventing the emergence of dry behavior at the time maturation usually occurs. Douglas (1970), in a longitudinal study in Britain, investigated the relationship between enuresis and family disruption for a sample of 4701 children born within the same week. He found that death of the mother, divorce, and separation were all associated with significantly high rates of bedwetting ($p < .001$), persisting up to age 15, as compared with the rates of enuresis in unbroken families. In other recent studies (Murphy, Nickols, Umphress, Hammar, Eddy, and Chapman, 1971; Stein and Susser, 1967; Umphress, Murphy, Nickols, and Hammar, 1970), it has been confirmed that family disruption during early childhood has occurred significantly more often among enuretics, compared to non-enuretic controls.

Benjamin, Stover, Geppert, Pizer, and Burdy (1971) compared three groups of hospitalized children: enuretics, wet-organics, and dry-organics. They found that enuretics were significantly different from the two groups demonstrating physical anomalie in being angry, jealous of their siblings, and concerned about the relationship of their parents. In interpreting these findings, Benjamin et al. hypothesized

that three conditions are necessary for the persistence of bedwetting: (1) the child has the feeling that he has been or is about to be abandoned; (2) the feeling of abandonment must occur during the critical age range of two and a half to five years; and (3) parental reaction to bedwetting, either positive or negative, temporarily reassures the child against abandonment and thus reinforces the habit. The authors proposed that symptoms such as poor peer relations, poor school adjustment, and anger and dissatisfaction are not directly related to enuresis but are rather correlates of insecurity, the feelings of abandonment. In a second study, Benjamin et al. (1971) compared children from a residential treatment institution with children from a pediatric outpatient practice, testing the hypothesis that enuresis is significantly associated with loss of an important child-caring person during the critical age. Such loss may have occurred by reason of death, divorce, hospitalization, foster home placement, military service, adoption, loss of a beloved baby-sitter, etc. Significant findings confirmed that enuresis is more prevalent among children separated from an important child-caring person at the critical age than among those without loss, or whose loss occurred at a different age. Enuretics, compared with non-enuretics, exhibited significantly greater fear of abandonment. The authors suggested that (1) parents should be helped to become aware of the child's fear of abandonment, to help the child express his fear, and to offer realistic

reassurance against it; and (2) the parents should be encouraged to discover and discontinue whatever they do in handling bedwetting to reassure against abandonment, reinforcing constructive behaviors instead.

In studying the families of enuretic adolescents, Umphress et al. (1970) found that, compared with the families of non-enuretic controls, parents have had difficulty with child-rearing and tended to have a punitive, rejecting approach to the child. At the same time their discipline was inconsistent and acting-out was encouraged. Poor sibling relationships and parental preference for other children were noted frequently. The parents also tended to continue direct interference with the handling of the enuretic problem, thereby discouraging the child from developing a mature attitude toward his difficulty. Stein and Susser (1967), comparing the families of enuretic and non-enuretic ten year olds, found that maternal inadequacy was a significantly different characteristic of the families of enuretics, and that the more extreme the family disorder, the longer the bedwetting persisted. Although deficient mother-child relationships appear to be central to the etiology of enuresis, Stein and Susser (1967) warned against the fallacy of holding either parent exclusively responsible:

> In families where one parent is inadequate or hostile to stability, the second parent can also be expected to contribute to family disorder. Neurotic persons may choose neurotic spouses, but they also seem to generate them. No two-way relationship in the nuclear family is independent of any other. Where one set of two-way

> relations is disturbed, other relations as between mother and child are likely to suffer (pp. 191-192).

Vogel and Bell (1968), exploring the nature of disrupted parent-child relationships, compared matched groups of families containing a disturbed child with families in which children were free of clinically manifest disturbance. They found that in the disturbed families, a particular child had become involved in the tensions existing between the parents. It was suggested that a particular child might be selected as the family scapegoat, the symbol of unstated conflicts between the parents. To be a satisfactory scapegoat, the child must persist in a problem behavior such as bedwetting, which is reinforced strongly enough so that it continued in spite of the hostility and anxiety it produces in the child. Although the child might be criticized or even punished for his behavior, the parents implicitly supported the persistence of the behavior they criticized.

> This permission took various forms: failure to follow through on threats, delayed punishment, indifference to and acceptance of the symptom, unusual interest in the child's symptom, or considerable secondary gratification offered to the child because of his symptom. The secondary gratification usually took the form of special attention and exemption from certain responsibilities (p. 420).

The phenomenon Vogel and Bell described is an explicit form of the double bind concept discussed previously (Jackson and Weakland, 1961). Although the child who is caught in this paradox may become profoundly disturbed, the authors pointed out that the procedure has survival value for the parents: "For the parents, scapegoating served as a personality-

stabilizing process. While the parents of these children did have serious internal conflicts, the projection of these conflicts onto the children served to minimize and control them (p. 424)."

Common maternal characteristics of the mothers of enuretic children have been described in a number of studies. Umphress et al. (1970), comparing the mothers of wet and dry children, found that the mothers of bedwetters were significantly more likely to demonstrate frustration and anger, as well as a greater degree of preoccupation and concern with toilet training. Other qualities defining these mothers included a low degree of perceived similarity with their own mothers (Nilsson, Almgren, Kohler, and Kohler, 1973); deep-seated conflicts concerning the reproductive function and motherhood (Nilsson et al., 1973); and as cited above, a disturbed relationship with the child (Stein and Susser, 1967). Pierce, Mangelsdorf, and Whitman (1969) suggested that the mothers of enuretic boys support the habit of enuresis through their own guilt over rejecting the boy and their own depreciating attitudes toward males. Pierce et al. (1969) also pointed out that a symptom serving such a crucial function in the parent-child relationship may prevent the parent from entering treatment to alter it.

The nature of the relationship between the enuretic child and his mother is described differently by various authors. Weiss and English (1957) stated, "The child has not formed an emotional bond to his mother of sufficient strength to

enable him to exert the necessary control (p. 27)." Kendall and Karafin (1973) suggested that enuresis may be treated by psychotherapy in an attempt "to break the strong maternal-child bond (p. 137)." Silberstein (1973) stated that enuresis is more common "among the children of parents who are either absent frequently or are emotionally disengaged from their children (either overinvolved or underinvolved) (p. 368)." It is possible that all three views may be accurate descriptions of the relationship of the enuretic child and his mother. Emotional disengagement from the child, in Silberstein's words, has appeared either as under-involvement or as overinvolvement, that is, as lack of a strong mother-child bond, or as a bond strong enough to preclude other attachments.

One may ask, "What causes deficient parent-child relationships? Do some parents deliberately withhold from one or more of their children the positive support needed for healthy emotional development?" An answer to these questions may be suggested by the fact that enuresis tends to run in families, despite the lack of evidence confirming a congenital tendency (see pp. 38-39), and despite the strong evidence indicating that the problem can be prevented for nearly all children regardless of genetic make-up (see pp. 41-42). Perhaps the enuretic child, protesting rejection and seeking reassurance against his fears by bedwetting, grows up to be the parent of an enuretic child with similar problems. In other words, if a child does not learn from

parents how to encourage mature behavior and mastery without arousing fears of abandonment, and without making the issue one of power versus submission, his own parenting may be deficient in the same areas, regardless of good intentions. From this point of view, it may be argued that enuresis is, in fact, a learning deficiency, indicating that parents have not learned how to create a secure emotional environment for their children.

To summarize, enuresis has been considered as a physical disorder, as a learning deficiency, and as a symptom communicating emotional distress. It has been argued that the communications approach to the symptom provides an adequate explanation of the failures as well as of the successes resulting from various methods of treatment. From the communications point of view, enuresis has been discussed as a symptom indirectly expressing a protest or a plea for help. It has been suggested that the enuretic symptom relates specifically to an early fear of abandonment and is maintained partly because of the parents' management practices in reassuring against abandonment and partly because the symptom itself may temporarily reduce anxiety in a self-reinforcing manner. From the postulate that deficient parent-child relationships are central to the problem, it has been argued that enuresis may be viewed as a learning deficiency of the parents, who lack the skills to create a secure emotional climate for their children. Although no specific personality pattern typical of the enuretic child

can be demonstrated, the bedwetter may exhibit other traits related to his basic anxiety and insecurity, including such variables as poor relations with siblings and peers, poor school adjustment, conflict with parents, low self esteem, and anger and dissatisfaction. Since deficient parenting tends to run in families, because of the lack of adequate models, it is presumed that parents will exhibit personality traits similar to those expected in their children.

Treatment consistent with the rationale of this study involves teaching parents new skills in communicating with their children (and with each other), thereby initiating the process of redefining relationships, resolving conflicts, and reducing problem behavior. PET has been presented and defended as an appropriate treatment model for intervening in family relationships in order to influence interpersonal distances, to resolve conflicts by means of direct methods of communication, and, subsequently, to reduce symptomatic behavior. The schemata technique, and specifically the FBI, has been presented and defended as an appropriate method of measuring interpersonal distances and, hence, of defining relationships. A communications approach to enuresis as a symptom of deficient family relationships has been presented and defended, supporting the selection of enuresis as a message-oriented behavior appropriate for investigation in this study. Although no personality pattern typical of the enuretic child or the parent can be demonstrated, several variables of personality have been presented as possible

correlates of the anxiety and insecurity presumed to be central to the problem of enuresis. Measures of anxiety and of self concept have, accordingly, been selected as instruments appropriate for cross-validating changes in the definition of relationships and in the frequency of enuretic behavior.

CHAPTER III

HYPOTHESES WITH RATIONALE

Based on a critical review of the literature, it has been argued that in comparison with dry children, the history of the enuretic child is different, and that the "something different" is either still continuing, or that the child is somehow obtaining secondary gains from persisting in enuretic behavior. It has also been argued that enuresis, an acting-out behavior symptomatic of disrupted parent-child relationships, is a covert message protesting the fear of being abandoned and appealing for help.

It has been reasoned that teaching the family new ways of communicating and of resolving conflicts should produce changes in the definition of relationships and thus changes in the perceptions of interpersonal distances within the family; relationships should become more positive, and should be reflected by the closer perception of interpersonal distances. As the family learns to communicate more directly, enuresis should no longer be needed as an undercover message indicating distress. Parents and children alike, as the stress on individual members of the family is alleviated, should exhibit a reduction in manifest anxiety and an enhancement in self concept.

HYPOTHESES

1. In contrast to the perceptions of fathers in the control group (control fathers), fathers in the experimental group (experimental fathers) will perceive closer interpersonal distances within the family, including measures of Family Average distance, Father-Child Average distance, Father-Wet Child Average distance, Father-Dry Child Average distance, Mother-Child Average distance, Mother-Wet Child Average distance, Mother-Dry Child Average distance, Father-Mother distance, Father-Wet Subject distance, and Mother-Wet Subject distance.
2. In contrast to the perceptions of mothers in the control group (control mothers), mothers in the experimental group (experimental mothers) will perceive closer interpersonal distances within the family, including measures of Family Average distance, Father-Child Average distance, Father-Wet Child Average distance, Father-Dry Child Average distance, Mother-Child Average distance, Mother-Wet Child Average distance, Mother-Dry Child Average distance, Father-Mother distance, Father-Wet Subject distance, and Mother-Wet Subject distance.
3. In contrast to the perceptions of boys in the control group (control boys), boys in the experimental group (experimental boys) will perceive closer interpersonal distances within the family, including measures of Family Average distance, Father-Child Average distance, Father-Wet Child Average distance, Father Dry-Child

Average distance, Mother-Child Average distance, Mother-Wet Child Average distance, Mother-Dry Child Average distance, Father-Mother distance, Father-Self distance, and Mother-Self distance.

4. In contrast to the perceptions of girls in the control group (control girls), girls in the experimental group (experimental girls) will perceive closer interpersonal distances within the family, including measures of Family Average distance, Father-Child Average distance, Father-Wet Child Average distance, Father-Dry Child Average distance, Mother-Child Average distance, Mother-Wet Child Average distance, Mother-Dry Child Average distance, Father-Mother distance, Father-Self distance, and Mother-Self distance.
5. Experimental fathers, in contrast to control fathers, will demonstrate a more positive self concept, as measured by the total and subscale scores of the Tennessee Self Concept Scale, and less manifest anxiety, as measured by the Manifest Anxiety Scale.
6. Experimental mothers, in contrast to control mothers, will demonstrate a more positive self concept, as measured by the total and subscale scores of the Tennessee Self Concept Scale, and less manifest anxiety, as measured by the Manifest Anxiety Scale.
7. Experimental boys, in contrast to control boys, will demonstrate a more positive self concept, as measured by the total and subscale scores of the Piers-Harris

Children's Self Concept Scale, and less manifest anxiety, as measured by the Children's Manifest Anxiety Scale.

8. Experimental girls, in contrast to control girls, will demonstrate a more positive self concept, as measured by the total and subscale scores of the Piers-Harris Children's Self Concept Scale, and less manifest anxiety, as measured by the Children's Manifest Anxiety Scale.
9. In the two-week period following the completion of PET instruction for the experimental parents and prior to the beginning of PET instruction for the control parents, experimental boys will achieve a greater number of dry nights than will control boys.
10. In the two-week period following the completion of PET instruction for the experimental parents and prior to the beginning of PET instruction for the control parents, experimental girls will achieve a greater number of dry nights than will control girls.

CHAPTER IV

METHODS

The purpose of this study was to investigate the effects of changes in family interpersonal relationships on the behavior of enuretic children and their parents. It was evident from the search of the literature that an essential first step involved the establishing of criteria by which to define a subject population.

Subjects

In most studies, children are not diagnosed as enuretic until they have attained the age of at least three to four years. For the purposes of this study, six years was arbitrarily selected as the minimum age limit, on the grounds that subjects younger than six years of age might not respond validly to testing materials. Pilot data had indicated that six-year-olds responded to the Family Bond Inventory (FBI) in an organized non-random manner, and that their ranked scores on measures of self concept and manifest anxiety were closely approximated by their teacher's rankings for these variables.

It was apparent that the frequency of enuretic behavior must be established for this study in order to ensure that the severity of the problem was comparable for all subjects. In other studies, enuresis has been defined as bedwetting occurring as frequently as several nights each week or as

seldom as only once a month. For the purposes of this study, only those subjects were included whose parents reported a wetting frequency of at least three nights each week.

Since children demonstrating organic pathology have customarily not been defined as enuretic, some researchers have required potential subjects to undergo a preliminary urological work-up in order to exclude cases with organic lesions. Because it has been established that organic causes of enuresis are rare, and that urological investigation may be traumatic for children and costly for parents, a preliminary medical examination was not required of subjects in this study. It was hoped that cases of organic origin would be avoided by excluding (1) retardates, defined by placement in special classes at school, and (2) grossly disabled children, also defined by placement in special classes at school. It was assumed, in the event that children with organic involvement were not excluded by the special class restriction, that random assignment of subjects would ensure their equal representation in experimental and control groups. In practice, 24 of the 29 experimental families and 24 of the 29 control families reported previous consultations with family physicians or specialists concerning bedwetting.

Most researchers have not differentiated between primary and secondary enuretics but have provided the same treatment for both types. For the purposes of this study, no distinction was made between primary and secondary enuretics. It

was assumed, in the event that any real differences between the two types did, in fact, exist, that random assignment of subjects would ensure their equal representation in experimental and control groups. In practice, parental reports indicated that eight of the 29 experimental children and eight of the 29 control children had been dry previously for a period as long as six months and should be classified as secondary enuretics.

Subjects (Ss) were obtained by two different methods: (1) a classified advertisement was placed in the "Personals" column of the two local daily newspapers having the largest circulation, offering free confidential help to parents of bedwetters, aged six or older, in connection with a university research project; and (2) a series of telephone calls concerning the project was made to the disc jockey of the local morning radio show having the largest radio audience. Parents responding to either method of publicizing the project were interviewed briefly by telephone in order to establish the child's age, wetting frequency, and school class placement. If the child appeared to fit the established criteria, the parents were invited to come in for an intake interview.

At the intake interview, conducted by the author, parents were informed that PET classes would be offered in two series, each series to consist of eight weekly sessions, with the second series beginning two weeks after the completion of the first series. It was stated that because large numbers

of parents were expected to be involved in the study, families would be randomly assigned to one of the series in order to keep the class sizes manageable. Parents were asked to choose one of two evenings each week on which identical classes would be held. Parents were further informed that all parents and children would be tested at the end of the first series of classes, and that after the tests were administered, they would be asked to record their children's dry nights over a two-week period. Both spouses of families having two parents were urged, but not required, to attend the classes. Parents were also informed that an instructor other than the author would be teaching the classes.

Because it was anticipated that some families might drop out before data could be collected, applications were accepted from 66 families in order to ensure reaching the full complement of 30 families in each group. When more than one child in the same family qualified as a subject, the child wetting most frequently, according to parental report, was selected. If the wetting frequency of qualified siblings was not different, the S was selected by tossing a coin. Families were not informed that only one of their enuretic children had been included; testing and other data were collected from qualified siblings in the same manner as from Ss.

After the random assignment of 33 families to the experimental group and 33 families to the control group, four

experimental families were lost. One mother reported the spontaneous remission of her child; one mother stated that pressures of a new job and moving house had overcrowded her schedule; two families missed the first session, attended at the second session, and did not return, one without explanation, and the other stating, "We came one time and it didn't help." Four families were subsequently lost from the control group as well, two because the child was ill and could not be tested, and two others by reason of having started conditioning treatment during the waiting period. One of the two families involved in conditioning treatment dropped out, and the other family requested permission to continue in the project. Data were collected, but not used, from the family continuing in the study after conditioning treatment had been initiated.

A total of 100 parents and 58 children from 58 families eventually served as Ss. The parents from the 29 experimental group families included 22 fathers and 28 mothers for a total of 50 parents. The parents from the 29 control group families included 21 fathers and 29 mothers, also totaling 50 parents. The 29 children of the experimental group included 20 boys and 9 girls. The 29 control group children included 15 boys and 14 girls. The 58 child Ss ranged in age from 6·0 (six years, no months) to 16·1 (16 years, one month). The mean age of the experimental group children was 8·10, while in the control group, a mean age

of 8·11 was observed. Only one child in the experimental group and three children in the control group exceeded the age of 12 years.

Materials

Family Bond Inventory (FBI). The FBI used materials comprised of a field and circles representing family members. The field consisted of bond paper, yellow, 8-1/2 by 11 inches, manufactured by Boise Cascade Company. One-half inch circles, white, self-adhesive unprinted labels, stock number R-808, manufactured by Avery Label Company, Azusa, California 91702 were used to identify family members. Each S was given a waxed paper sandwich bag, manufactured by Cutrite Paper Company, containing approximately 20 circles, and an FBI test booklet.

Three different forms of the FBI were used: (1) a Primary Form for children aged six to nine years, (2) a Secondary Form for children aged ten years and older, and (3) a Parents' Form. The Primary Form consisted of a cover page, designating the test form and including a blank for the child's name, and a second page, blank except for the words "Page A" appearing near the upper edge of the 8-1/2 inch side of the paper. Four wire staples, spaced along the left edge of the 8-1/2 inch side of the paper, were used to fasten the pages into a booklet. Directions were not included in the Primary Form, on the grounds that young children were not expected to be able to read and follow

directions. The Primary Form was administered individually, therefore, and the directions were read to the child by an examiner. The Secondary Form and the Parents' Form resembled the Primary Form with two exceptions: (1) it was stated on the cover page that the circles in the envelope received were to represent the S and the other members of the S's family, and (2) a page entitled "Directions for Page A", facing Page A, was included in each booklet.

For all three forms of the FBI, directions for Page A required a separate circle to be marked to identify the S and each member of the S's family; the marked circles were then to be fixed to Page A "the way you see your family". The S was also asked to draw a line around the circle representing himself. Instructions for all three forms of the FBI have been reproduced in Appendix A.

Tennessee Self Concept Scale (TSCS). Developed by William Fitts in 1964, the TSCS, as reviewed by Suinn (Buros, 1972, pp. 367-369), was ranked among the better measures combining group discrimination with self concept information, despite its deficiencies in reporting internal consistency data and its unsophisticated manual. Suitable for Ss having at least a sixth grade reading level, the TSCS is a self-administering instrument consisting of 100 self-descriptive statements, of which 90 assess the self concept and 10 assess self criticism (the self criticism items are all MMPI Lie Scale items). For each item, the respondent chooses one of five response options ranging from

"completely false" to "completely true". Retest reliability, as reported by Bentler (Buros, 1972, pp. 366-367), is in the high .80's, sufficiently large to warrant confidence in individual difference measurement (p. 366)."

Although the Clinical and Research Form of the TSCS provides scores for 29 variables, only 13 of these were used in the present study to compare the experimental and control parents of enuretic children. The dimensions of self compared in this study included Total Positive, Self Criticism, Identity, Self-Satisfaction, Behavior, Physical Self, Moral-Ethical Self, Personal Self, Family Self, and Social Self. Other comparisons were based on two of the empirical scales, General Maladjustment and Personality Integration, and an over-all measure of stress called the Number of Deviant Signs.

Piers-Harris Children's Self Concept Scale (CSCS). Developed by Ellen V. Piers and Dale B. Harris in 1969, the CSCS, as reviewed by Bentler (Buros, 1972, pp. 306-307), was considered to be psychometrically adequate and was recommended for research studies of change in self concept. Although the CSCS was designed for children in grades 3-12, Bentler noted that children below the third grade level can take the test when the items are read by the examiner. The CSCS consists of 80 declarative statements of the type "I am a happy person"; the child responds "yes" or "no". There appear to be no consistent sex or grade differences

in means. The internal consistency of the scale ranges from .78 to .93 and the retest reliability from .71 to .77. Although the CSCS was designed to be unidimensional, a principal components analysis yielded combinations of items that can be scored to yield "cluster" scores; the manual suggested that the cluster scores are sufficiently tentative that their main application should be in research.

In the present study, seven scores from the CSCS were used to compare the enuretic children of experimental parents, who had completed PET instruction, with the enuretic children of control parents, who were waiting for PET instruction. The seven CSCS scores used to compare experimental and control children included the total score and six cluster scores: Behavior, Intellectual and School Status, Physical Appearance and Attributes, Anxiety, Popularity, and Happiness and Satisfaction.

Manifest Anxiety Scale (MAS). In 1951, Taylor published the results of an experiment in which the performance of adults in a classical conditioning situation was found to be related to their scores on a questionnaire relating to anxiety. The questionnaire, containing 50 items and familiarly known as the Taylor Manifest Anxiety Scale (TMAS), was subsequently published by Taylor in 1953. Since that time the instrument has been researched and validated by a substantial number of studies (see Castaneda, McCandless and Palermo, 1956).

In 1956, Bendig developed a short form of the TMAS known as the MAS, comprised of those items that seemed to be most successful in predicting clinical criteria of manifest anxiety. The MAS consists of 20 declarative statements of the type "I sometimes feel that I am about to go to pieces"; the S responds "yes" or "no". In the present study, the MAS was used to compare experimental and control parents with respect to manifest anxiety. The MAS has been reproduced in Appendix B.

Children's Manifest Anxiety Scale (CMAS). In 1956, Castaneda, McCandless, and Palermo published a scale of manifest anxiety adapted from the TMAS for use with fourth, fifth, and sixth grade children. A total of 42 anxiety items were selected and modified, and 11 additional items were included as a measure of the S's tendency to falsify responses to anxiety items. The 11 additional items, of the type "I tell the truth every single time" are referred to as the L scale. The 42 anxiety items are of the type "I often worry about what could happen to my parents"; the child responds "yes" or "no" to all 53 items. Pilot data, as mentioned previously, indicated that when CMAS items were read to six-year-olds, their ranked scores for manifest anxiety were closely approximated by the classroom teacher's rankings for this variable. Accordingly, the CMAS was used to compare experimental and control enuretic children with respect to manifest anxiety. The CMAS has been reproduced in Appendix B.

Record of Dry Nights (RDN). The RDN was printed on one side only of a plain unlined filing card, yellow, 5 by 8 inches, manufactured by Simpson Tablet Company, Everett, Washington 98201. At the top of the eight inch side of the card, there was a blank for the child's name. Under the name blank were instructions requiring the marking with "X" each dry night for a two-week period, and noting that the record might be marked by parent and child together. The remainder of the card was marked off horizontally into a one-week calendar, with a calendar for a second week appearing below the first week's calendar. Each space was marked with the day of the week and the date. The RDN was used to compare experimental and control enuretic children with respect to the frequency of dry nights over the same two week period. The RDN has been reproduced in Appendix C.

Procedures

Treatment. Authorization was obtained from Effectiveness Training Associates (ETA) to offer Parent Effectiveness Training (PET) without charge to the parents involved in this research. PET was presented in eight weekly sessions, totaling approximately 24 hours of instruction and involving approximately 25 parents per class. Although parents were assigned to one of two evening classes each week, according to their stated preference, they were encouraged to attend the alternate class in case of conflicts in schedule. Experimental parents attended the first series of classes,

while control parents waited 10 weeks for the second series to begin.

A qualified instructor, operating under the franchise of ETA, was employed by the author to conduct the classes. Although the author was also qualified to teach PET, a different instructor was employed in order to prevent possible contamination of experimental effects resulting from experimenter bias.

Textbooks (Gordon, 1970) and the companion workbooks (Gordon, 1972), customarily provided to fee-paying participants in PET, were not issued to the parents in this study. It was postulated that parents might differ in their ability to pay for textual materials and might also differ in the amount of leisure time available for studying textual materials. Accordingly, no fees were charged and no textual materials were issued, in order to avoid possible contamination of experimental effects due to the extraneous variables of financial status and availability of leisure time. In practice, however, all families either purchased the textbook from local bookstores or were able to borrow copies; and nearly all parents, according to self-report, completed the usual reading assignments. Workbooks are not sold separately, however, and are available only to fee-paying participants in PET. In practice, and in accordance with the authorization previously obtained from ETA, workbook and textual materials were covered by the instructor's presentations to the classes. It may be argued, therefore,

that PET as presented to the parents in this study did not differ from PET as customarily presented to fee-paying participants.

The eight weekly class sessions of PET, following the course outline suggested to qualified instructors by ETA, included lectures, discussions, demonstrations, tape recordings, and frequent opportunities to practice communication skills in small groups. These communication skills, as presented previously, included listening on a feeling level and with deep understanding; avoiding "roadblocks to communication", i.e., negative interpersonal reinforcers; stating parental needs without ambiguity and without blaming; and resolving conflicts by facilitating the process of creating solutions which meet the needs of all family members concerned, in a "no-lose" process.

Testing. In order to avoid possible contamination of experimental effects due to pretesting, no pretests were administered on this study. All tests were administered within the same week to all four groups of Ss: (1) experimental parents, following their instruction in PET, (2) experimental children, the enuretic children of experimental parents, (3) control parents, waiting for instruction in PET, and (4) control children, the enuretic children of wait list control parents. Because of the randomization procedure, the responses of control Ss were expected to represent the pre-treatment behavior of the experimental Ss. Conversely,

the responses of experimental Ss, when compared with the responses of control Ss, were expected to reflect treatment effects.

Instruments were presented to all Ss in a fixed order: (1) the FBI, (2) the self concept measure (TSCS or CSCS), and (3) the manifest anxiety measure (MAS or CMAS). Children under the age of ten years were individually tested in a private room. The Primary Form of the FBI was presented as a game. Usually the examiner marked the circles, according to the child's instructions, to indicate the identity of the family member represented by the specific circle, but some children preferred to mark the circles themselves. The statements of the self concept and manifest anxiety measures were read to the child by an examiner, with the child responding verbally. Children were encouraged to ask questions if they seemed uncertain of the meaning of any words. Some children marked their own responses to the statements, while others preferred to have the examiner circle the indicated option.

Children aged ten and older, as well as adults, were tested in small groups of children or adults, not exceeding four Ss per group. Members of the same family were not tested in the same small group. When possible, instructions were given to the group as a whole, but examiners were available to answer any individual questions.

All testing of parent Ss and enuretic child Ss from both the experimental and control groups was completed within one week after the end of the first series of PET classes.

Scoring. In scoring the FBI, distances between the center points of the circles were measured in centimeters, and seven average scores were computed: (1) a Family Average distance, obtained by summing the distance between all possible pairs of family members and dividing by the number of pairs; (2) a Father-Child Average distance, obtained by summing the distances between the father and each child and dividing by the number of measurements; (3) a Father-Wet Child Average distance, obtained by summing the distances between the father and each enuretic child aged four years or older and dividing by the number of measurements; (4) a Father-Dry Child Average distance, obtained by summing the distances between the father and each non-enuretic child and dividing by the number of measurements; (5) a Mother-Child Average distance, obtained by summing the distances between the mother and each child and dividing by the number of measurements; (6) a Mother-Wet Child Average distance, obtained by summing the distances between the mother and each enuretic child aged four years or older and dividing by the number of measurements; (7) a Mother-Dry Child Average distance, obtained by summing the distances between the mother and each non-enuretic child and dividing by the number of measurements. Three simple measurements were also

recorded for the FBI: (1) Father-Mother distance, (2) Father-Wet S distance (called the Father-Self distance in scoring the responses of children), and (3) Mother-Wet S distance (called the Mother-Self distance in scoring the responses of children).

Scoring of the self concept and manifest anxiety measures followed the procedures suggested by the testmakers. As mentioned previously (see p. 97), 13 scores of the Clinical and Research Form of the TSCS were used to compare aspects of self concept demonstrated by experimental and control parents of enuretic children. Seven scores of the CSCS (see p. 98) were used to compare aspects of self concept demonstrated by experimental and control enuretic children. The MAS yielded a single measure of adult manifest anxiety. The CMAS yielded both a Lie (L) scale, measuring the S's tendency to falsify responses and an Anxiety(A) scale.

The data from the RDN were obtained by telephoning the parents on the day following the last night of the specified two-week period, but parents were also requested to return the RDN cards. Only the total number of dry nights for the two-week period was recorded for each S.

Analysis of Data

Data from parents and children were analyzed by means of separate factorial analyses of variance (ANOVA), consisting of a 2 X 2 (treatment level by sex) design. Experimental fathers were compared with control fathers, experimental

mothers with control mothers, experimental boys with control boys, and experimental girls with control girls.

One-tailed subsequent *t* tests, using the multiple comparison method for *a priori* orthogonal tests as described by Kirk (1968, pp. 73-76), were computed to test the differences between means for which directionality had been predicted, based on the results of ANOVA.

The $p \leq .05$ level of significance was selected as the basis for accepting or rejecting the hypotheses of this experiment.

CHAPTER V

RESULTS

The purpose of this study was to investigate the effects of changes in family interpersonal relationships on the behavior of enuretic children and their parents. Definitions of relationships within the family, quantified by measures of interpersonal distances, were expected to change in experimental families, contrasted with control families, as a result of instructing experimental parents in Parent Effectiveness Training (PET), the independent variable.

Measures were taken on 24 dependent variables for parents, including 10 variables related to interpersonal distances and 14 variables related to self concept and manifest anxiety. For children, measures were taken on 21 dependent variables, including 10 variables related to interpersonal distances, 10 variables related to self concept and manifest anxiety, and a single measure of enuretic behavior. Experimental fathers, mothers, boys, and girls were compared with the corresponding group of control *Ss*.

Family Bond Inventory (FBI) - Parents

Neither F tests of two-way (treatment level by sex) analysis of variance (ANOVA) nor subsequent *t* tests of planned comparisons revealed any significant differences

in interpersonal distances as perceived by fathers in the experimental group (experimental fathers) compared with fathers in the control group (control fathers). Hypothesis 1, predicting that experimental fathers will perceive closer interpersonal distances than will control fathers, therefore, was not supported for any measure.

Although F tests of ANOVA failed to demonstrate significant differences in interpersonal distances as perceived by mothers in the experimental group (experimental mothers) compared with mothers in the control group (control mothers), subsequent one-tailed *t* tests of planned comparisons indicated that for the Father-Mother distance, experimental mothers placed symbols representing self and husband significantly ($p \leq .05$) closer together than did control mothers. Thus, Hypothesis 2, predicting that experimental mothers will perceive closer interpersonal distances than will control mothers, was supported for the variable Father-Mother distance but was not supported for the other measures of interpersonal distance.

A summary of *t* tests for planned comparisons of interpersonal distances as perceived by fathers is presented in Table 1 and by mothers in Table 2.

FBI - Children

No significant main effects for A (experimental vs. control groups) or for B (males vs. females) were revealed by F tests of interpersonal distances perceived by experi-

TABLE 1. MEAN SCORES (IN CENTIMETERS) AND *t* TESTS OF DIFFERENCES IN INTERPERSONAL DISTANCES PERCEIVED BY EXPERIMENTAL FATHERS AND BY CONTROL FATHERS (N = 43)

Distance	Experimental Fathers	Control Fathers	df	*t*
FAMILY AVERAGE	3.69	3.79	95	- .21
FATHER-CHILD AVERAGE	4.28	4.33	92	- .07
MOTHER-CHILD AVERAGE	4.12	4.61	94	- .86
FATHER-MOTHER	2.70	2.58	91	.18
FATHER-WET *S*	4.00	4.37	92	- .49
MOTHER-WET *S*	4.06	4.62	94	- .69
FATHER-WET CHILD AVERAGE	3.98	5.00	92	-1.29
MOTHER-WET CHILD AVERAGE	4.06	4.51	94	- .63
FATHER-DRY CHILD AVERAGE	5.36	3.95	73	1.57
MOTHER-DRY CHILD AVERAGE	4.97	4.14	75	1.14

No value reaches the .05 level of significance.

mental boys, compared with control boys, and by experimental girls, compared with control girls. However, three significant AB interaction effects (treatment level by sex) were observed: (1) Family Average Distance ($F = 3.85$, $df = 1/54$, $p \leq .05$), (2) Mother-Child Average distance ($F = 3.85$, $df = 1/54$, $p \leq .05$), and (3) Mother-Wet Child Average distance ($F = 3.97$, $df = 1/54$, $p \leq .05$). Graphs of the AB interaction effects are presented in Figures 1-3.

TABLE 2. MEAN SCORES (IN CENTIMETERS) AND *t* TESTS OF DIFFERENCES IN INTERPERSONAL DISTANCES PERCEIVED BY EXPERIMENTAL MOTHERS AND BY CONTROL MOTHERS (N = 57)

Distance	Experimental Mothers	Control Mothers	df	*t*
FAMILY AVERAGE	3.38	3.97	95	-1.40
FATHER-CHILD AVERAGE	4.06	4.69	92	-1.02
MOTHER-CHILD AVERAGE	3.40	3.99	94	-1.18
FATHER-MOTHER	2.58	3.84	91	-1.97*
FATHER-WET *S*	4.64	4.00	92	.94
MOTHER-WET *S*	3.65	4.00	94	- .50
FATHER-WET CHILD AVERAGE	4.57	4.63	92	- .08
MOTHER-WET CHILD AVERAGE	3.64	3.50	94	.22
FATHER-DRY CHILD AVERAGE	4.14	4.90	73	- .94
MOTHER-DRY CHILD AVERAGE	3.48	3.96	75	- .76

*$p \leq .05$

The results of subsequent one-tailed *t* tests of planned comparisons indicated that Hypothesis 3, predicting that experimental boys will perceive closer interpersonal distances than will control boys, was not supported for any measure. Contrary to the hypothesized direction of the difference, however, experimental boys did perceive significantly ($p \leq .05$) greater interpersonal distances than did control boys on a number of measures: for (a) Family

FIGURE 1. FAMILY AVERAGE DISTANCE IN CENTIMETERS PERCEIVED BY EXPERIMENTAL AND CONTROL ENURETIC CHILDREN

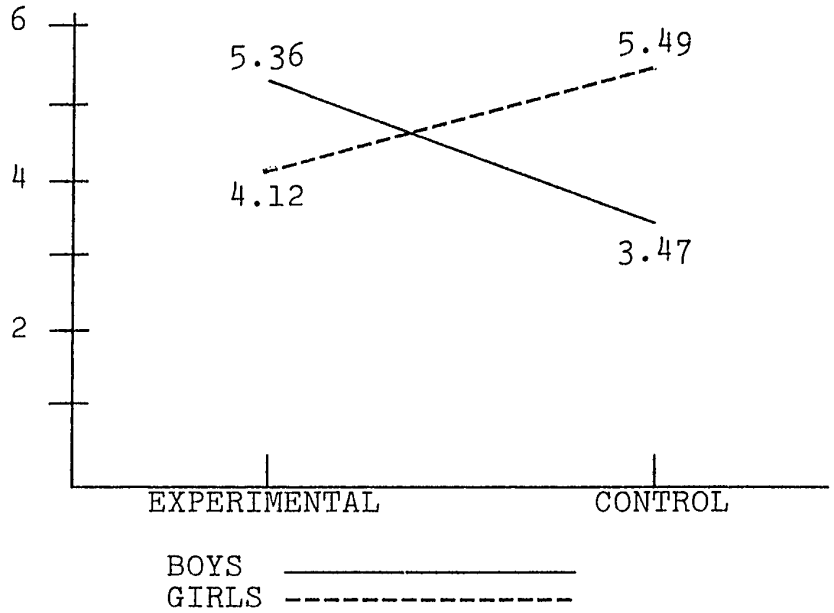


FIGURE 2. MOTHER-CHILD AVERAGE DISTANCE IN CENTIMETERS PERCEIVED BY EXPERIMENTAL AND CONTROL ENURETIC CHILDREN

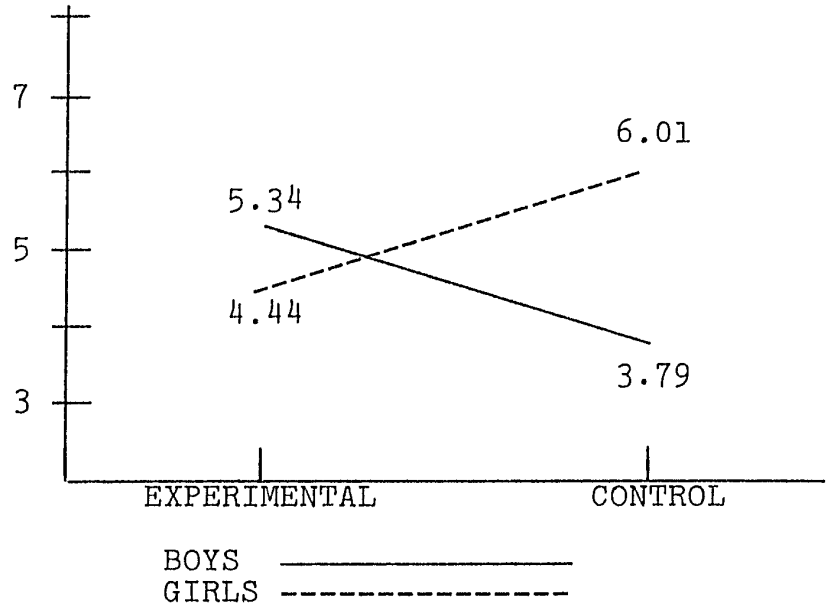
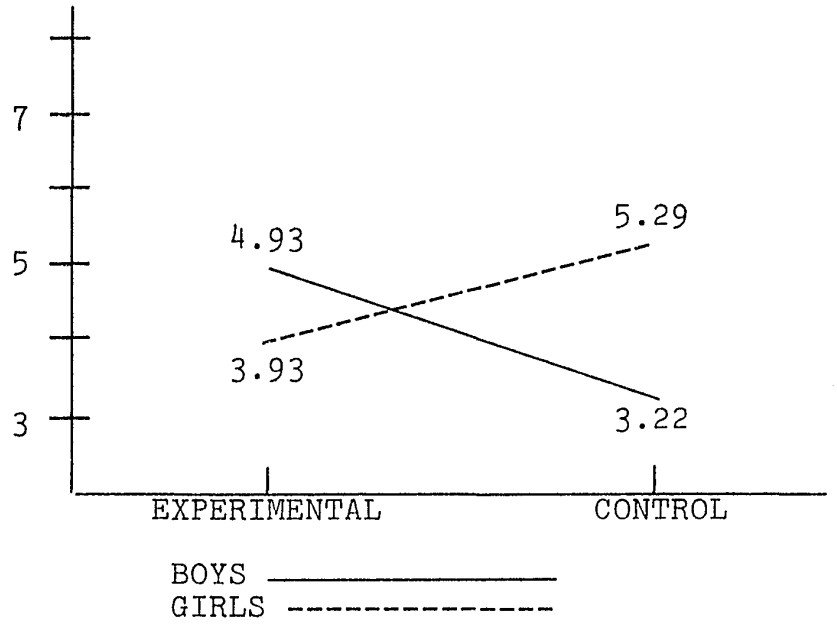


FIGURE 3. MOTHER-WET CHILD AVERAGE DISTANCE IN CENTIMETERS PERCEIVED BY EXPERIMENTAL AND CONTROL ENURETIC CHILDREN



Average distance, the mean for experimental boys was 5.36 centimeters compared to a mean of 3.47 centimeters for control boys; for (b) Father-Mother distance, experimental boys perceived a mean distance of 4.08 centimeters, compared to a mean of only 2.28 centimeters perceived by control boys; for (c) Mother-Wet Child Average distance, the means for experimental and control boys were 4.93 and 3.22, respectively; for (d) Father-Dry Child Average distance, means of 7.75 and 4.35 were observed; and for (e) Mother-Dry Child Average distance, the mean for experimental boys was 6.83, compared to 4.18 for control boys. A summary of *t* tests for planned comparisons of interpersonal distances

TABLE 3. MEAN SCORES (IN CENTIMETERS) AND *t* TESTS OF DIFFERENCES IN INTERPERSONAL DISTANCES PERCEIVED BY EXPERIMENTAL BOYS AND BY CONTROL BOYS (N = 35)

Distance	Experimental Boys	Control Boys	df	*t*
FAMILY AVERAGE	5.36	3.47	54	1.82*
FATHER-CHILD AVERAGE	6.45	4.70	54	1.59
MOTHER-CHILD AVERAGE	5.34	3.79	54	1.56
FATHER-MOTHER	4.08	2.28	54	1.67*
FATHER-SELF	6.02	4.31	54	1.49
MOTHER-SELF	4.80	3.33	54	1.49
FATHER-WET CHILD AVERAGE	5.82	4.41	54	1.32
MOTHER-WET CHILD AVERAGE	4.93	3.22	54	1.78*
FATHER-DRY CHILD AVERAGE	7.75	4.35	41	2.33*
MOTHER-DRY CHILD AVERAGE	6.83	4.18	41	1.98*

*$p \leq .05$

as perceived by experimental boys and by control boys is presented in Table 3.

Hypothesis 4, predicting that experimental girls will perceive closer interpersonal distances than will control girls was not supported for any measure. A summary of *t* tests for planned comparisons of interpersonal distances as perceived by experimental girls and by control girls is presented in Table 4.

TABLE 4. MEAN SCORES (IN CENTIMETERS AND t TESTS OF DIFFERENCES IN INTERPERSONAL DISTANCES PERCEIVED BY EXPERIMENTAL GIRLS AND BY CONTROL GIRLS (N = 23)

Distance	Experimental Girls	Control Girls	df	t
FAMILY AVERAGE	4.12	5.49	54	-1.06
FATHER-CHILD AVERAGE	5.33	6.88	54	-1.12
MOTHER-CHILD AVERAGE	4.44	6.01	54	-1.26
FATHER-MOTHER	2.89	2.12	54	.57
FATHER-SELF	5.36	5.51	54	- .11
MOTHER-SELF	4.13	4.80	54	- .54
FATHER-WET CHILD AVERAGE	5.10	5.94	54	- .63
MOTHER-WET CHILD AVERAGE	3.93	5.29	54	-1.13
MOTHER-DRY CHILD AVERAGE	4.70	5.60	41	- .54

No value reaches the .05 level of significance

Manifest Anxiety Scale (MAS) and Tennessee Self Concept Scale (TSCS) - Parents

Two-way (treatment level by sex) ANOVA was used to compare the scores of experimental fathers with control fathers and of experimental mothers with control mothers on manifest anxiety and each of the self concept variables.

For manifest anxiety, significant main effects were observed for treatment level ($F = 9.61$, $df = 1/96$, $p \leq .01$) and for sex ($F = 5.88$, $df = 1/96$, $p \leq .05$). Experimental

parents demonstrated a significantly greater degree of manifest anxiety than did control parents, and mothers in both the experimental and control groups demonstrated a significantly greater degree of manifest anxiety than did the fathers in both treatment levels. The results of ANOVA for parental scores of manifest anxiety are presented in Table 5.

TABLE 5. ANALYSIS OF VARIANCE FOR PARENTAL MAS SCORES

Source	Sum of Squares	df	Main Square	F
Treatment	357.678	1	357.678	9.61**
Sex	218.830	1	218.830	5.88*
Treatment X Sex	7.768	1	7.768	.21
Within	3572.736	96	37.216	
Total	4157.012	96		

*$p \leq .05$
**$p \leq .01$

Subsequent one-tailed *t* tests of planned comparisons indicated that experimental fathers and experimental mothers, in contrast to their control group counterparts, demonstrated a greater degree of manifest anxiety at the $p \leq .05$ and $p \leq .01$ levels of significance, respectively. A summary of the results of subsequent *t* tests of planned comparisons based on ANOVA of parental manifest anxiety scores is

presented in Table 6 for fathers and for mothers.

TABLE 6. MEAN SCORES AND *t* TESTS OF DIFFERENCES FOR PARENTAL MAS SCORES

Parent	N	Experimental $\bar{X}$	Control $\bar{X}$	df	*t*
Fathers	43	6.59	3.33	96	1.75*
Mothers	57	10.14	5.76	96	2.71**

*$p \leq .05$
**$p \leq .01$

Of the 13 variables of self concept used to compare experimental fathers with control fathers and experimental mothers with control mothers, significant ($p \leq .05$) treatment effects were observed for nine variables, including Total Positive, Self-Satisfaction, Behavior, Physical Self, Moral-Ethical Self, Personal Self, Family Self, Social Self, and General Maladjustment. For each of these nine variables, contrary to the direction predicted, the differences consistently favored the control parents with probabilities ranging from $p \leq .05$ to $p \leq .01$. The four variables of self concept for which experimental parents did not differ significantly from control parents included Self Criticism, Identity, Personality Integration, and Number of Deviant Signs. Tables 7-19 present the results of ANOVA for each of the 13 variables of the TSCS used to compare experimental fathers with control fathers and experimental mothers with

control mothers; subsequent *t* tests based on the ANOVA of parental scores on the TSCS are summarized for fathers in Table 20 and for mothers in Table 21.

TABLE 7. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: SELF CRITICISM

Source	Sum of Squares	df	Mean Square	F
Treatment	58.281	1	58.281	1.65
Sex	.000	1	.000	.00
Treatment X Sex	23.260	1	23.260	.66
Within	3386.304	96	35.274	
Total	3467.845	99		

No value reaches the .05 level of significance.

TABLE 8. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: TOTAL POSITIVE

Source	Sum of Squares	df	Mean Square	F
Treatment	9159.641	1	9159.641	7.72**
Sex	828.380	1	828.380	.70
Treatment X Sex	151.589	1	151.589	.13
Within	113961.984	96	1187.104	
Total	124101.594	99		

**$p \leq .01$

TABLE 9. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES. IDENTITY

Source	Sum of Squares	df	Mean Square	F
Treatment	440.316	1	440.316	2.85
Sex	272.745	1	272.745	1.76
Treatment X Sex	3.063 8	1	3.063	.02
Within	14844.288	96	154.628	
Total	15560.412	99		

No value reaches the .05 level of significance.

TABLE 10. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: SELF-SATISFACTION

Source	Sum of Squares	df	Mean Square	F
Treatment	1291.376	1	1291.376	5.81*
Sex	17.322	1	17.322	.08
Treatment X Sex	90.915	1	90.915	.41
Within	21327.456	96	222.161	
Total	22727.069	99		

*$p \leq .05$

TABLE 11. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORE: BEHAVIOR

Source	Sum of Squares	df	Mean Square	F
Treatment	1441.147	1	1441.147	11.70**
Sex	85.173	1	85.173	.69
Treatment X Sex	1.914	1	1.914	.02
Within	11827.104	96	123.199	
Total	13355.338	99		

**$p \leq .01$

TABLE 12. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: PHYSICAL SELF

Source	Sum of Squares	df	Mean Square	F
Treatment	305.379	1	305.379	4.53*
Sex	.383	1	.383	.01
Treatment X Sex	2.393	1	2.393	.04
Within	6474.720	96	67.445	
Total	6782.875	99		

*$p \leq .05$

TABLE 13. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: MORAL SELF

Source	Sum of Squares	df	Mean Square	F
Treatment	278.487	1	278.487	3.77*
Sex	251.595	1	251.595	3.40
Treatment X Sex	.000	1	.000	.00
Within	7094.688	96	73.903	
Total	7624.770	99		

*$p \leq .05$

TABLE 14. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: PERSONAL SELF

Source	Sum of Squares	df	Mean Square	F
Treatment	298.488	1	298.488	4.06*
Sex	143.359	1	143.359	1.95
Treatment X Sex	.096	1	.096	.00
Within	7060.704	96	73.549	
Total	7502.647	99		

*$p \leq .05$

TABLE 15. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: FAMILY SELF

Source	Sum of Squares	df	Mean Square	F
Treatment	436.009	1	436.009	5.41*
Sex	101.251	1	101.251	1.26
Treatment X Sex	37.323	1	37.323	.46
Within	7738.656	96	80.611	
Total	8313.239	99		

*$p \leq .05$

TABLE 16. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: SOCIAL SELF

Source	Sum of Squares	df	Mean Square	F
Treatment	498.406	1	498.406	6.76**
Sex	191.687	1	191.687	2.60
Treatment X Sex	18.279	1	18.279	.25
Within	7083.168	96	73.783	
Total	7791.540	99		

**$p \leq .01$

TABLE 17. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: GENERAL MALADJUSTMENT

Source	Sum of Squares	df	Mean Square	F
Treatment	586.546	1	586.546	6.05**
Sex	4.785	1	4.785	.05
Treatment X Sex	1.053	1	1.053	.01
Within	9310.368	96	96.983	
Total	9902.752	99		

**$p \leq .01$

TABLE 18. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: PERSONALITY INTEGRATION

Source	Sum of Squares	df	Mean Square	F
Treatment	15.025	1	15.025	1.08
Sex	13.446	1	13.446	.96
Treatment X Sex	1.262	1	1.262	.09
Within	1340.064	96	13.959	
Total	1369.797	99		

No value reaches the .05 level of significance.

TABLE 19. ANALYSIS OF VARIANCE FOR PARENTAL TSCS SCORES: NUMBER OF DEVIANT SIGNS

Source	Sum of Squares	df	Mean Square	F
Treatment	47.922	1	47.922	.64
Sex	27.203	1	27.203	.36
Treatment X Sex	1.764	1	1.764	.02
Within	7211.904	96	75.124	
Total	7288.793	99		

No value reaches the .05 level of significance.

TABLE 20. MEAN SCORES AND *t* TESTS OF DIFFERENCES IN TSCS SCORES OF FATHERS N = 43)

Variable	Experimental Fathers	Control Fathers	df	*t*
Self Criticism	36.05	35.48	96	.31
Total Positive	325.82	347.67	96	-2.08*
Identity	118.82	123.48	96	-1.23
Self-Satisfaction	100.18	109.38	96	-2.02*
Behavior	106.82	114.81	96	-2.36**
Physical Self	66.32	70.19	96	-1.55
Moral-Ethical Self	67.36	70.81	96	-1.31
Personal Self	64.27	67.90	96	-1.39
Family Self	63.73	69.19	96	-1.99*
Social Self	64.18	69.57	96	-2.06*
General Maladjustment***	93.00	97.62	96	1.54
Personality Integration	10.68	11.24	96	- .49
Number of Deviant Signs	10.00	8.33	96	.63

*$p \leq .05$
**$p \leq .01$

***General Maladjustment is an inverted scale; i.e., lower scores indicate a greater degree of maladjustment than do higher scores.

TABLE 21. MEAN SCORES AND *t* TESTS OF DIFFERENCES IN TSCS SCORES OF MOTHERS (N = 57)

Variable	Experimental Mothers	Control Mothers	df	*t*
Self Criticsm	36.96	34.45	96	1.60
Total Positive	334.14	350.97	96	-1.84*
Identity	122.57	126.38	96	-1.16
Self-Satisfaction	102.93	108.24	96	-1.35
Behavior	109.00	116.34	96	-2.50**
Physical Self	66.64	69.83	96	-1.46
Moral-Ethical Self	70.64	73.93	96	-1.44
Personal Self	62.00	65.34	96	-1.47
Family Self	67.00	69.97	96	-1.25
Social Self	67.86	71.48	96	-1.59
General Maladjustment***	92.32	97.48	96	-1.98*
Personality Integration	9.71	10.72	96	-1.02
Number of Deviant Signs	10.79	9.66	96	.49

*$p \leq .05$
**$p \leq .01$

***General Maladjustment is an inverted scale; i.e., lower scores indicate a greater degree of maladjustment than do higher scores.

In summary, Hypothesis 5, predicting that experimental fathers will demonstrate a more positive self concept and less manifest anxiety than will control fathers, was not supported on any measure. Contrary to the hypothesized direction of the difference, however, experimental fathers demonstrated a less positive self concept, as measured by a number of variables of the TSCS, and a greater degree of manifest anxiety, as measured by the MAS, than did control fathers: (a) Total Positive, the mean score for experimental fathers was 325.82, compared with a mean for control fathers of 347.67; for (b) Self-Satisfaction, means for experimental vs. control fathers were 100.18 and 109.38; for (c) Behavior, experimental fathers averaged 106.82 and control fathers, 114.81; for (d) Family Self, means of 63.73 and 69.19 were observed; for (e) Social Self, 64.18 and 69.57; and for (f) Manifest Anxiety, the mean for experimental fathers was 6.59, in contrast to the control fathers' mean of only 3.33.

Hypothesis 6, predicting that experimental mothers will demonstrate a more positive self concept and less manifest anxiety than will control mothers, was not supported on any measure. Contrary to the hypothesized direction of the difference, however, experimental mothers significantly ($p \leq .05$) demonstrated a less positive self concept, as measured by a number of variables of the TSCS, and a greater degree of manifest anxiety, as measured by the MAS, than did control mothers: for (a) Total Positive,

the mean score for experimental mothers was 334.14, compared with a mean for control mothers of 350.97; for (b) Behavior, means for experimental vs. control mothers were 109.00 and 116.34, respectively; for (c) General Maladjustment, an inverted scale in which lower scores indicate a greater degree of maladjustment than do higher scores, experimental mothers averaged 92.32 and control mothers, 97.48; and for (d) Manifest Anxiety, the mean for experimental mothers was 10.14 while control mothers averaged 5.76.

Children's Manifest Anxiety Scale (CMAS) and Piers-Harris Children's Self Concept Scale (CSCS) - Children

Two-way (treatment level by sex) ANOVA was used to compare the scores of experimental boys with control boys and of experimental girls with control girls with respect to manifest anxiety and each of the seven self concept variables. No significant differences in manifest anxiety or self concept scores were found, either in F tests of ANOVA or in the subsequent *t* tests of planned comparisons.

Hypothesis 7, predicting that experimental boys will demonstrate a more positive self concept and less manifest anxiety than will control boys, was not supported in any measure. Hypothesis 8, predicting that experimental girls will demonstrate a more positive self concept and less manifest anxiety than will control girls was not supported in any measure.

Record of Dry Nights (RDN) - Children

When total numbers of dry nights, recorded for each enuretic S over the same two-week period, were compared by means of two-way ANOVA (A = experimental vs control, B = male vs. female), a significant ($p \leq .05$) AB interaction effect was observed. The results of ANOVA for the RDN are presented in Table 22, and Figure 4 presents a graph of the AB means; the results of subsequent t tests of planned comparisons based on the ANOVA of the RDN are summarized in Table 23.

TABLE 22. ANALYSIS OF VARIANCE FOR CHILDREN'S RDN SCORES

Source	Sum of Squares	df	Mean Square	F
Treatment	12.556	1	12.556	.90
Sex	30.177	1	30.177	2.17
Treatment X Sex	68.827	1	68.827	4.96*
Within	749.628	54	13.882	
Total	861.188	57		

*$p \leq .05$

FIGURE 4. NUMBER OF DRY NIGHTS ACHIEVED IN THE SAME TWO-WEEK PERIOD BY EXPERIMENTAL AND CONTROL ENURETIC CHILDREN

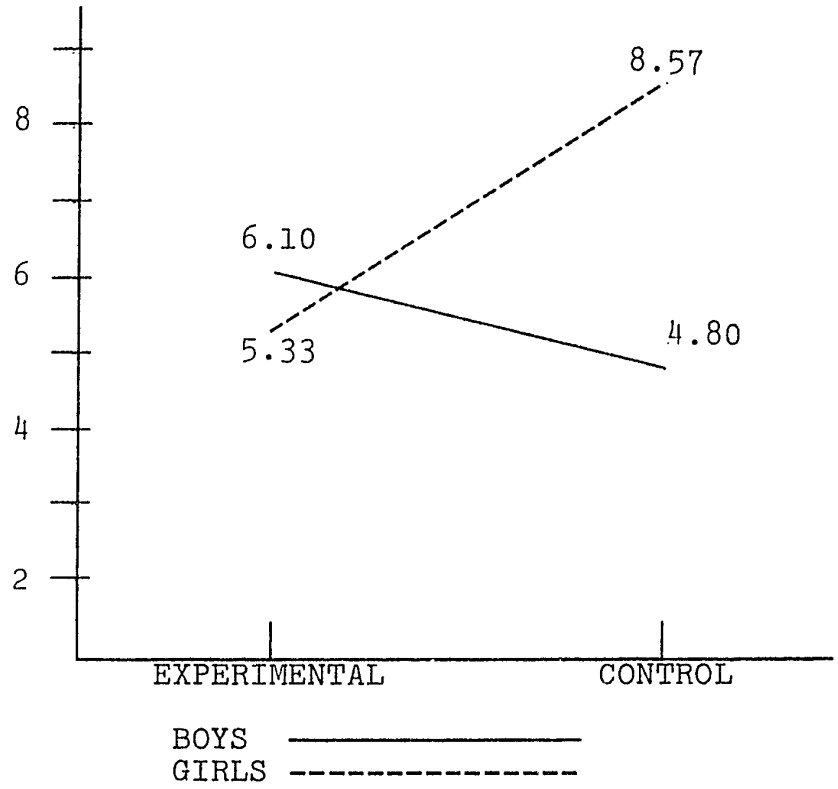


TABLE 23. MEAN SCORES AND *t* TESTS OF DIFFERENCES FOR CHILDREN'S RDN SCORES

Sex	N	Experimental	Control	df	*t*
Boys	35	6.10	4.80	54	1.02
Girls	23	5.33	8.57	54	-2.03*

*$p \leq .05$

Hypothesis 9, predicting that experimental boys will achieve a greater number of dry nights than will control boys was not supported. Although experimental boys tended to wet less frequently than did control boys, the tendency did not approach significance ($.20 > p > .15$). Hypothesis 10, predicting that experimental girls will achieve a greater number of dry nights within a given two-week period than will control girls was not supported. Contrary to the hypothesized direction of the difference, experimental girls achieved significantly ($p \leq .05$) fewer dry nights than did control girls.

CHAPTER VI

DISCUSSION

The purpose of this study was to investigate the effects of changes in family interpersonal relationships on the behavior of enuretic children and their parents. It was postulated that definitions of relationships are the basis of behavior, and that family relationships are interdependent. The redefinition of relationships was measured by changes in interpersonal distances, a quantitative measure of the qualitative construct called interpersonal relationship. Interpersonal distances, indicating definitions of relationships within the family, were expected to change in the experimental families as a result of instructing experimental parents in Parent Effectiveness Training (PET), a system emphasizing communication skills as fundamental to the process of improving relationships and resolving conflicts within the family. Advocates of PET claim that relationships within the family will improve as parents learn (1) to listen with deep understanding, (2) to send verbal messages congruent with their feelings, and (3) to use their listening and sending skills to facilitate the process of creating "no-lose" solutions to family conflicts.

In accord with the literature concerning schemata techniques for defining relationships, improvement in relationships was expected to be reflected by the closer placement of circles symbolizing family members. A series

of hypotheses was accordingly formulated, predicting that parents and children of the experimental group would perceive interpersonal distances within the family as closer than would their counterparts in the control group.

It was also postulated that improvement in family relationships should be reflected in various aspects of personality. Accordingly, a second series of hypotheses was formulated, predicting that experimental Ss would demonstrate a more positive self concept and a lesser degree of manifest anxiety than would their counterparts in the control group.

Based on a search of the literature concerning enuresis, a rationale was developed explaining bedwetting as an acting-out behavior, communicating distress, and symptomatic of disrupted family relationships. It was expected that the improvement in relationships resulting from more effective methods of communication should nullify the message-oriented value of enuresis. Accordingly, a final pair of hypotheses was formulated, predicting that experimental boys and girls would achieve more dry nights within a given two-week period than would their counterparts in the control group.

The Family Bond Inventory (FBI), used in this study to measure subtle definitions of relationships within the family, is essentially an unobtrusive measure involving a projective technique. Ss for the most part appeared to be unaware of what was being measured by the FBI, and even the

few who surmised the purpose of the instrument did not know what constituted a typical response. It seems reasonable to assume, therefore, that the results of the FBI were uncontaminated and reflected real differences in definitions of relationships.

For eight weeks prior to testing, the parents in the experimental group had spent time together, learning new skills and exploring solutions to their mutual problems. The significantly closer relationship between parents, therefore, as perceived by experimental mothers in contrast to control mothers, was an expected result of treatment. Unexpectedly, however, the closer relationship between the Father-Mother dyad perceived by experimental mothers was not confirmed by other members of the family; the perceptions of experimental fathers, contrasted with control fathers, and of experimental girls, compared with control girls, were not different, whereas experimental boys defined the relationship between their parents as significantly more distant than did control boys. According to Fullmer (in press), discrepant perceptions of the same interpersonal relationship are _prima facie_ evidence of conflict within the family, and this very conflict may be expected to produce unstable behavior.

Contrary to the direction of changes in family interpersonal distances hypothesized for children, experimental boys perceived greater distances than did control boys on five of the ten FBI measures; five of these differences

were significant at the .05 level of probability, and the other five differences did not exceed the .10 level of probability. Assuming that measures of control children represent the pre-treatment perceptions of experimental children, it appears that experimental boys moved clearly from a closer position to more distant definitions of relationships.

According to the converse of the rationale linking closer interpersonal distances with a reduction in enuretic behavior, it follows that boys perceiving more distant relationships should also demonstrate an increase in enuretic behavior. However, experimental boys did not, in fact, differ significantly from control boys in wetting frequency; mean Record of Dry Nights (RDN) scores for experimental and control boys were 6.10 and 4.80, respectively.

According to the rationale linking closer interpersonal distances with a more positive self concept and a reduction in manifest anxiety, it also follows that boys perceiving more distant relationships within the family should demonstrate a less positive self concept and an increased degree of manifest anxiety. In fact, however, experimental boys did not differ significantly from control boys in manifest anxiety or in any of the self concept variables; the differences for these variables slightly favored the experimental boys but did not approach significance.

One possible interpretation of experimental findings for

boys is inescapable: perhaps the family interpersonal distances perceived by boys are not related to self concept, to manifest anxiety, or to enuretic behavior, since boys' perceptions of distances changed without corresponding changes in the other dependent variables. A more likely interpretation of experimental findings for boys can be based on Fullmer's theory that discrepant perceptions of the same interpersonal distances validate the existence of conflict within the family. According to the rationale of the present study, experimental Ss, following exposure to PET, were expected to redefine family relationships as the key to resolving conflicts and changing problem behavior One must assume that conflict still exists in experimental families following eight weeks of exposure to PET, as evidenced by the fact that family members perceived the same relationships differently. Therefore, it follows that the process of redefining relationships had not been completed by the time measures were obtained from experimental Ss, and that the hypothesized changes in self concept, manifest anxiety, and enuretic behavior should not be expected to occur until after the process of redefining relationships and resolving conflicts has been completed.

It was noted previously that experimental girls, compared with control girls, did not significantly change their perceptions of family interpersonal distances. According to the rationale linking interpersonal distances with the other dependent variables, therefore, experimental

girls should also not differ from control girls in self concept, manifest anxiety, or in enuretic behavior. Experimental girls did not, in fact, differ from control girls in any of the variables of self concept or manifest anxiety; the differences for these variables slightly favored the experimental girls but did not approach significance. Unexpectedly, however, the frequency of enuretic behavior was significantly greater for experimental girls than for control girls, with mean dryness scores of 5.33 and 8.57, respectively.

Again, one possible interpretation of experimental findings for girls is unavoidable: perhaps the family interpersonal distances perceived by girls are not related to enuretic behavior, to self concept, or to manifest anxiety, since experimental girls wet more frequently than did control girls without corresponding changes in the other dependent variables. However, on the basis of Fullmer's theory that discrepant perceptions of the same relationship demostrate the existence of conflict, producing unstable behavior, a more likely interpretation may be offered. The greater wetting frequency of experimental girls, compared with control girls, may itself be seen as unstable behavior, another piece of evidence that the process of redefining relationships, resolving conflict, and changing problem behavior had not been completed by the time measures were obtained.

A further question may be asked. Why did experimental girls, failing to perceive changes in family interpersonal distances, wet their beds more frequently than did control girls, while experimental boys, compared with control boys, perceived greater interpersonal distances and did not change in enuretic behavior? Perhaps the very fact that experimental boys did change their perceptions of interpersonal distances kept them from wetting as frequently as did experimental girls, who failed to perceive changes in interpersonal distances. In other words, perhaps the greater distances perceived by boys are an implicit recognition of the conflict which girls continue to act-out with increased enuretic behavior. According to this reasoning, it follows that experimental boys were progressing in the process of dealing openly with conflict, and that a later measure of their enuretic behavior should show a reduction in frequency.

Experimental fathers, compared with control fathers, did not change in their perceptions of family interpersonal distances. It would follow, therefore, according to the rationale linking interpersonal distances with the other dependent variables, that experimental fathers should also not differ from control fathers in any of the variables of self concept or in manifest anxiety. In fact, however, experimental fathers demonstrated a significantly lower level of self concept and a higher degree of manifest anxiety than did control fathers. Again, two possible

interpretations must be recognized: (1) perhaps the family interpersonal distances perceived by fathers are not related to self concept or to manifest anxiety; or (2) the depressed self concept and elevated manifest anxiety demonstrated by experimental fathers, compared with control fathers, may be seen as unstable behaviors, indicating that the process of redefining relationships, resolving conflict, and ultimately reducing the enuretic behavior of their children had been initiated but not completed by the time measures were obtained.

Contrary to expectation, the closer distance between self and husband perceived by experimental mothers, compared with control mothers, was not linked with a corresponding increase in self concept scores and a decrease in manifest anxiety scores. In fact, experimental mothers scored significantly lower on the self concept measure and significantly higher on the manifest anxiety measure than did the control mothers. An inspection of Table 2 indicates that experimental mothers did not demonstrate extensive changes in perceptions of family interpersonal distances, unlike their enuretic sons, who changed significantly on half of the measures. It appears again, despite the possibility that distance measures may not be related to the other dependent variables, that the process of redefining relationships, resolving conflict, and ultimately reducing the enuretic behavior of their children had been initiated but not completed by the time measures were obtained.

There are several other plausible explanations for the unexpected findings that experimental fathers and mothers scored significantly lower in self concept and higher in manifest anxiety than did their counterparts in the control group. First, it appears that parents exposed to PET reassessed themselves both as parents and as persons. It is reasonable to assume that reassessment may be a preliminary step in the process of changing. Second, parents of the experimental group, throughout their PET course, were encouraged to use new communication skills, esentially changing their methods of relating with family members. It has been pointed out frequently that change provokes anxiety (Fullmer, 1964; Jackson and Weakland, 1961; Kline, 1962; Schaffer, Wynne, Day, Ryckoff, and Halperin, 1962). The higher degree of manifest anxiety demonstrated by experimental parents, in contrast to control parents, may indicate that the process of changing was well underway by the time tests were administered. Third, the higher manifest anxiety scores of experimental parents may also have reflected separation anxiety, that is, the apprehension of no longer meeting with a valued and supportive group of peers, attempting to deal with a mutual, not yet solved, problem.

The trust developed in the parent peer group after eight weeks of spending time together may also have contributed to the lower self concept scores of experimental parents, contrasted with control parents. Analogous to the paradigm

of maturity described by Kline (1962), it is reasonable to assume that control parents, prior to beginning instruction in PET, might have been more defensive in evaluating themselves than were experimental parents, who had already developed confidence and trust in the parent peer group.

Possible relationships among dependent variables for each group of Ss have already been explored. In view of the interdependency of family relationships and of behaviors postulated by the present study, it is likely that relating experimental findings across groups of Ss may yield further interpretations. After eight weeks of instruction in PET, attempting to employ new communication skills in relating to their children, mothers and fathers in the experimental group, compared with control parents, were highly anxious and held a low opinion of self-esteem. Although mothers felt closer to their husbands at the end of treatment, fathers did not confirm the closer distance perceived by their wives.

Enuretic sons responded to the changes in their parents by defining family relationships as more distant and by continuing to wet their beds at the same rate. Enuretic daughters responded to similar changes in their parents by failing to confirm any changes in family relationships and by wetting their beds more frequently. Perhaps the rate of enuretic behavior for both experimental boys and girls increased in response to the greater anxiety of their parents, compared with control parents. It is also

possible that the fact that experimental boys perceived greater interpersonal distances than did control boys somehow offset for experimental boys the effects of variables increasing the enuretic behavior of experimental girls.

Nevertheless, it appears that with the sole exception of the closer Father-Mother relationship perceived by mothers, the initial effects of PET on the behavior of enuretic children and their parents, as measured immediately following eight weeks of instruction, were either negative or benign.

On the other hand, it may be argued that similar to the findings of Bates (1974), the greater distances perceived by experimental boys may reflect a temporary increase in interpersonal distances, and may be expected to decrease over time to a "healthy distance", necessarily undefined for lack of previous research findings establishing interpersonal distance norms for children. It follows, according to this argument, that healthy distance would be closer than that perceived by the control boys in this study. It also follows that despite the slight tendency for experimental girls to perceive smaller, but non-significant, interpersonal distances than did control girls, the expected temporary increase in distances perceived by girls was delayed for some unknown reason and should still occur, prior to the establishment of healthy distance.

Another, possibly more parsimonious, explanation of the interpersonal distances perceived by experimental boys and

girls may also be based on the concept of healthy distance. Perhaps, as hypothesized, the enuretic girls of this study were, in fact, too distant in their relationships with parents; the slightly smaller distances perceived by experimental girls, therefore, could be interpreted as a tendency to move toward healthy distance. Conversely, it could be argued that the enuretic boys of this study were, in fact, too close in their relationships with one or both parents prior to treatment; the greater distances perceived by experimental boys, therefore, could also be interpreted as a movement in the direction of healthy distance. Perhaps the greater involvement of experimental mothers with their husbands, implied by the closer distance between parents perceived by experimental mothers, compared to control mothers, was a crucial factor in permitting their enuretic sons to redefine family relationships as consistently more distant than did control boys.

In terms of this argument, one must question the assumption that closeness necessarily indicates a positive relationship. Perhaps the enuretic protest of the wet child signals a too close, overprotective relationship with one parent and/or a too distant, hostile relationship with the other parent. Healthy distance, according to this rationale, would involve two factors: (1) a degree of closeness, indicating positive affect and support, assuring the child that he is an unconditionally acceptable member of the family; and (2) a degree of distance, also indicating

positive affect and support, permitting the child to grow toward maturity, competence, and independence.

It is possible that the positive effects of PET, as customarily presented in eight weeks of instruction, may be enhanced over time, as family members adapt to changes and improve their communication skills. It is also possible that for families demonstrating the long-standing conflicts assumed to underlie the enuretic protest of the wet child, an eight week treatment was not lengthy enough to achieve the hypothesized changes. In Bates' (1974) study, significant decreases in interpersonal distances perceived by disadvantaged students were observed only in Ss who had been exposed to three semesters of treatment. The findings of the present study indicated that the process of change had been initiated but not completed when measures were obtained. Whether the passage of time alone would enhance the effects of PET, or whether a more lengthy treatment is needed to achieve change are questions exceeding the scope of the present study. Nevertheless, the expectation of redefining the disrupted relationships and of resolving the long-standing conflicts presumably signaled by the symptomatic behavior of enuretic children within a time span of only eight weeks appears to have been unrealistic.

Another weakness of the present study involves the difficulty of controlling extraneous variables for a symptomatic behavior as volatile as is enuresis. Some of the extraneous influences were unavoidable, since, as

pointed out previously, the mere commitment of parents to enter treatment may institute a treatment effect, influencing the enuretic behavior of control children. Therefore, it may not be valid to assume that the number of dry nights achieved by control children did, in fact, represent the pre-treatment dry behavior of experimental children. A grand mean of 2.41 dry nights in two weeks was reported by parents prior to the random assignment of families to experimental and control groups, in contrast to a grand mean of 6.20 dry nights for the two-week period measured by the RDN. A two-tailed t test of differences between the two grand means revealed a highly significant increase in dry behavior for all children ($t = 5.17$, df = 1/54, $p \leq .001$). In the experimental group, dry behavior increased from an initial mean of 2.05 to 5.72 ($t = 5.17$, df = 54, $p \leq .001$) while in the control group, dry behavior increased from an initial mean of 2.76 to 6.69 ($t = 6.70$, df = 54, $p \leq .001$).

If a control group design had not been used in the present study, the increase in dry behavior between pre-treatment level and post-treatment level would certainly have been interpreted as a treatment effect, indicating that enuretic children wet less frequently after their parents had been instructed in PET. It is apparent from the findings of this controlled study, however, that enuresis is a volatile symptom, readily influenced by extraneous variables. For example, it appears that testing the

children just before starting to record dry nights may have influenced the enuretic behavior of all children, thereby reducing treatment effects on the measure of dry behavior.

CHAPTER VII

SUMMARY AND SUGGESTIONS FOR FUTURE RESEARCH

The purpose of this study was to investigate the effects of changes in family interpersonal relationships on the behavior of enuretic children and their parents. It was reasoned that through instruction in Parent Effectiveness Training (PET), parents would learn new skills for communicating with their children and each other, thereby resolving conflict and strengthening relationships within the family. Changes in definitions of relationships, assessed by measuring the interpersonal distances placed by Ss between symbols representing members of the family, were expected to be reflected (1) by a decrease in interpersonal distances, (2) by a decrease in a selected symptomatic behavior (enuresis) of children, (3) by a decrease in the degree of manifest anxiety demonstrated by parents and their enuretic children, and (4) by a more positive self concept demonstrated by parents and children alike.

Ss were 35 boys, 23 girls, and 100 parents from 58 families, randomly assigned by families to treatment and wait list control groups. Child Ss ranged in age from six to 16 years and wet their beds three or more times each week, according to parental report. Retardates and severely physically handicapped children, defined by placement in special classes at school, were excluded. Although enuretic siblings meeting the criteria were tested, data were

used from only one child per family. If siblings differed in initial enuretic behavior, the child wetting more frequently was selected as S; if siblings did not differ in wetting frequency, the S was selected randomly.

At the conclusion of the customary eight week course in PET for parents in the treatment group, instruments measuring interpersonal distance, manifest anxiety, and self concept were administered to all Ss. After testing was completed, during the week following the end of treatment, the number of dry nights achieved by all children was recorded for the same two-week period. For all variables, experimental fathers, mothers, sons, and daughters were compared with their counterparts in the control group. It was assumed that observations of control Ss represented pre-treatment measures of experimental Ss.

The results of this study, following the instruction of parents in PET, indicated that:

1. Mothers defined the relationship between self and husband as closer, but fathers and daughters did not confirm that the relationship between parents had changed. Sons also disagreed, perceiving the father-mother relationship, as well as many of the other intrafamily relationships, as more distant. The fact that different members of the family perceived the same relationships discrepantly was interpreted as evidence of conflict within the family, producing unstable behavior, and indicating that the

process of change had been initiated but not completed when measures were obtained.

2. Mothers and fathers exhibited a greater degree of manifest anxiety and a less positive self concept; the changes in parental personality variables were interpreted as unstable behaviors, further evidence of conflict, indicating that the process of change had been initiated but not completed by the time the data were collected.

3. Sons and daughters did not change in manifest anxiety or in self concept, despite the greater anxiety and lower self concept of their parents.

4. The treatment, PET, did not change the frequency of enuretic behavior demonstrated by sons; the treatment did, however, increase the rate of enuretic behavior observed for daughters. The greater enuretic frequency of daughters was viewed as an unstable behavior, indicating that the process of change had been initiated but not completed when observations were made.

5. The greater interpersonal distances perceived by sons were not coupled with a corresponding change in the frequency of enuretic behavior, whereas the unchanged interpersonal distances perceived by daughters were accompanied by an increase in wetting frequency. This finding lays strong evidence for the conclusion that family interpersonal distances are not directly related to enuretic behavior. As a feasible alternative argument, however, it was suggested that the fact that boys redefined family

relationships as more distant may have offset for them the effects of variables producing a decrement in dry behavior for girls.

Whether a decrease in interpersonal distances perceived by children would be linked with a decrease in enuretic behavior, as hypothesized, is a question left unanswered by this study, since a reduction in these distances did not occur.

A number of other questions raised by the present study might be profitably investigated in future research:

1. Are the effects of the customary eight week course in PET enhanced over time, or is a more lengthy treatment needed to accomplish positive changes in family interpersonal relationships? What is an appropriate time line for achieving changes in relationships and subsequent changes in symptomatic behaviors?

2. What are the norms of interpersonal distances for children? Do the distances change at different age levels? What interpersonal distances are characteristic of emotionally secure children who are developing steadily in competence and maturity? In other words, what is the quantification of healthy distance at various age levels?

Research directed toward answering these questions would provide a valuable foundation for a series of studies relating changes in family interpersonal relationships, assessed by measuring interpersonal distances, with changes in various problem benaviors of distressed and acting-out children.

APPENDIX A

INSTRUCTIONS FOR THE FAMILY BOND INVENTORY

PRIMARY FORM (TO BE READ BY THE EXAMINER TO THE CHILD)

Make believe this dot is your father. We'll mark it "F" for father.

Make believe this dot is your mother. We'll mark it "M" for mother.

Make believe this dot is you. We'll mark it ____ for _____.

Make believe these dots are the other kids in your family. Tell me their names, and I'll mark a dot for each one.

Now place the dots on the page the way you see your family.

Now peel the dots off the paper backing and stick them on Page A the same way you placed them before.

Circle the dot that stands for you.

SECONDARY FORM

COVER PAGE: The white gummed dots in the envelope represent you and the other members of your family.

Directions For Page A

How many family members, including yourself, are there in your family? ____

How many of the children are boys? ____ How many of the children are girls? ____

1. Mark a gummed dot to represent each member of your family according to this code:

   M = Mother

   F = Father

   B = Brother

   S = Sister

2. Now mark the oldest boy or girl #1, the next oldest #2, and so forth.

3. Without removing the paper backing from the dots, place the dots on Page A the way you see your family.

4. When you have finished arranging the dots, remove the paper backing and stick each dot on Page A according to your arrangement.

5. Draw a line closely around the dot which represents yourself.

PARENTS' FORM

COVER PAGE: The white gummed dots in the envelope represent you and the other members of your family.

DIRECTIONS FOR PAGE A

How many family members, including yourself, are there in your present family? ____ How many of your children are sons? ____ How many of your children are daughters? ____

1. Mark a gummed dot to represent each member of your present family, according to this code:

   M = Mother

   F = Father

   S = Son

   D = Daughter

2. Now indicate the birth order of your children by marking the oldest #1, the next oldest #2, and so forth.

3. Without removing the paper backing, arrange the dots on Page A the way you see your family.

4. When you have finished arranging the dots, remove the paper backing and stick each dot on Page A according to your arrangement.

5. Draw a line closely around the dot which represents yourself.

APPENDIX B

INSTRUMENTS MEASURING MANIFEST ANXIETY

CHILDREN'S MANIFEST ANXIETY SCALE (CMAS) (No title was included on the actual instrument)

_____
Name

Instructions: Read each question carefully, Put a circle around the word YES if you think it is true about you. Put a circle around the word NO if you think it is not true about you.

1. YES NO It is hard for me to keep my mind on anything.
2. YES NO I get nervous when anyone watches me work.
3. YES NO I feel I have to be best in everything.
4. YES NO I blush easily.
5. YES NO I like everyone I know.
6. YES NO I notice my heart beats very fast sometimes.
7. YES NO At times I feel like shouting.
8. YES NO I wish I could be very far from here.
9. YES NO Others seem to do things easier than I can.
10. YES NO I would rather win than lose in a game.
11. YES NO I am secretly afraid of a lot of things.
12. YES NO I feel that others do not like the way I do things.
13. YES NO I feel alone even when there are people around me.
14. YES NO I have trouble making up my mind.
15. YES NO I get nervous when things do not go the right way for me.
16. YES NO I worry most of the time.

17. YES NO I am always kind.

18. YES NO I worry about what my parents will say to me.

19. YES NO Often I have trouble getting my breath.

20. YES NO I get angry easily.

21. YES NO I always have good manners.

22. YES NO My hands feel sweaty.

23. YES NO I have to go to the toilet more than most people.

24. YES NO Other children are happier than I.

25. YES NO I worry about what other people think of me.

26. YES NO I have trouble swallowing.

27. YES NO I have worried about things that did not really make any difference later.

28. YES NO My feelings get hurt easily.

29. YES NO I worry about doing the right things.

30. YES NO I am always good.

31. YES NO I worry about what is going to happen.

32. YES NO It is hard for me to go to sleep at night.

33. YES NO I worry about how well I am doing in school.

34. YES NO I am always nice to everyone.

35. YES NO My feelings get hurt easily when I am scolded.

36. YES NO I tell the truth every single time.

37. YES NO I often get lonesome when I am with people.

38. YES NO I feel someone will tell me I do things the wrong way.

39. YES NO I am afraid of the dark.

40. YES NO It is hard for me to keep my mind on my school work.

41. YES NO I never get angry.

42. YES NO Often I feel sick in my stomach.

43. YES NO I worry when I go to bed at night.

44. YES NO I often do things I wish I had never done.

45. YES NO I get headaches.

46. YES NO I often worry about what could happen to my parents.

47. YES NO I never say things I shouldn't.

48. YES NO I get tired easily.

49. YES NO It is good to get high grades in school.

50. YES NO I have bad dreams.

51. YES NO I am nervous.

52. YES NO I never lie.

53. YES NO I often worry about something bad happening to me.

MANIFEST ANXIETY SCALE (MAS) (No title was included on the actual instrument)

_____
Name

Instructions: Read each question carefully. Put a circle around the word YES if you think it is true about you. Put a circle around the word NO if you think it is not true about you.

1. YES NO I believe I am no more nervous than most others.

2. YES NO I work under a great deal of tension.

3. YES NO I cannot keep my mind on one thing.

4. YES NO I am more sensitive than most people.

5. YES NO I frequently find myself worrying about something.

6. YES NO I am usually calm and not easily upset.

7. YES NO I feel anxiety about something or someone almost all the time.

8. YES NO I am happy most of the time.

9. YES NO I have periods of such great restlessness that I cannot sit long in a chair.

10. YES NO I have sometimes felt that difficulties were piling so high that I could not overcome them.

11. YES NO I find it hard to keep my mind on a task or job.

12. YES NO I am not usually self-conscious.

13. YES NO I am inclined to take things hard.

14. YES NO Life is a strain for me much of the time.

15. YES NO At times I think that I am no good at all.

16. YES NO I am certainly lacking in self-confidence.

17. YES NO I certainly feel useless at times.

18. YES NO I am a high-strung person.

19. YES NO I sometimes feel that I am about to go to pieces.

20. YES NO I shrink from a crisis or difficulty.

APPENDIX C

RECORD OF DRY NIGHTS (RDN)

PLEASE PRINT: NAME _____
(LAST) (FIRST)

INSTRUCTIONS: Please use "X" to mark each DRY NIGHT from May 5 to May 18. Mark only the nights on which the bed is dry. This record may be marked by parent and child together.

Sun May 5	Mon May 6	Tue May 7	Wed May 8	Thu May 9	Fri May 10	Sat May 11
Sun May 12	Mon May 13	Tue May 14	Wed May 15	Thu May 16	Fri May 17	Sat May 18

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