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THE RELATIONSHIP OF MOTHER AND FATHER RESPONSIVENESS TO INFANT COMPLIANCE

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THE RELATIONSHIP OF MOTHER AND FATHER RESPONSIVENESS TO INFANT COMPLIANCE

By

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ABSTRACT

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RESPONSIVENESS TO INFANT COMPLIANCE

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The purpose of the present study was to determine the relationship between infant compliance with parental commands and parent responsiveness (i.e., both positive and negative) and nonresponsiveness. It was hypothesized that positive and negative responsiveness would be positively related to infant compliance, whereas nonresponsiveness would negatively predict infant obedience. In addition, the study sought to determine whether maternal versus paternal responsiveness differed in the manner in which they predicted infant compliance. Also of interest was whether infants would be found to comply with a greater amount of prescriptive versus proscriptive commands. Finally, an attempt was made to differentiate how the type of command, i.e., prescriptive or proscriptive, affected the relationship between infant compliance and parental responsiveness.

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Fifteen 20-month-old infants and their mothers and fathers were recruited to participate in the present study. Parent-infant interaction was rated on four separate occasions, in the infants' own homes. Two observational situations occurred when both parents were home with their infants (who were the only children in the family), while the other two sessions took place when only mothers and infants were at home. Each observation session lasted forty minutes. Parent and infant interaction was rated by means of a continuous observation scale (Parent-Infant Responsiveness, Command, and Compliance Record) which was used to provide data regarding parent responsiveness and infant compliance.

Multiple regression analyses were performed in order to determine which parental behaviors predicted infant compliance, as well as to establish the direction of the relationship between parent responsiveness and infant obedience. T-tests were conducted as a means of measuring the degree to which infants differed with regard to the manner in which they complied with paternal versus maternal commands, and prescriptions versus proscriptions.

The major results were that all forms of responsiveness as well as nonresponsiveness on the part of the parents predicted both infant compliance and noncompliance. Specifically, maternal proscriptive commands, and

compliance with infant prescriptions were found to predict infant compliance with maternal prescriptions, with the latter but not the former variable. Maternal proscriptions negatively predicted compliance while maternal compliance with infant prescriptions positively predicted the same behavior. It was also found that positive affect predicted infant compliance with prescriptions in the same session, while it predicted noncompliance to proscriptions across sessions. Similarly, negative maternal contact positively predicted infant obedience across time, but predicted noncompliance to prescriptions within the same session. The relationship between paternal responsiveness and infant compiance took a somewhat different form. Paternal compliance with infant prescriptive and proscriptive commands predicted infant compliance with these commands. In one instance, maternal behavior was found to predict noncompliance with paternal commands, within the same session. Maternal compliance with infant prescriptions was found to negatively predict infant compliance with paternal commands. Paternal behavior did not significantly predict infant compliance with maternal commands. Finally, it was found that, for the most part, infants do not differ with respect to the degree to which they comply with maternal versus paternal commands. However, infants were found to typically comply with a

significantly greater number of parental prescriptions versus proscriptions.

It was concluded as a result of the present study that parental responsiveness was related to infant compliance, but in a rather complex fashion. In order to accurately predict infant compliance, one must take into consideration the type of parental responsiveness which is to be used to make the predictions, the parent (mother or father) who is giving the commands, as well as the type of command (prescriptive or proscriptive) presented to the infant. Implications of the present findings as well as the need for future research, especially longitudinal in nature, regarding this topic were discussed.

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CHAPTER I

INTRODUCTION

Positive parental contingent responsiveness to infant behavior or signals has been related to a number of aspects of infant development including the formation of secure attachments and the attainment of various intellectual achievements (Clarke-Stewart, 1973, 1978; Ainsworth, 1973; Yarrow, Klein, Lomonaco, and Morgan, 1975; Yarrow, Rubenstein, Pedersen, and Jankowski, 1972; Beckwith, 1972; Rubenstein, 1967; Lewis and Goldberg, 1969). However, a controversy exists as to whether positive responsiveness is also correlated with the development of infant compliance with parental commands. In particular, there is a controversy as to whether positive versus negative responsiveness fosters infant compliance. Positive responsiveness is defined in this case as any behavior which is designed to respond to another's behavior in a supportive, accepting manner; whereas negative responsiveness is comprised of responding to someone's behavior in a punitive or rejecting fashion.

Those who support the role of positive responsiveness in the development of infant compliance maintain that

by responding to the infant's signals in a positive way, a person, typically a parent, becomes important to that infant as an attachment figure (Ainsworth, Bell, and Stayton, 1974; Stayton, Hogan, and Ainsworth, 1971) or as someone who has acquired reinforcement value (Moss, 1967). It is the attachment bond or reward value, depending on one's theoretical orientation, which in turn creates a willingness in the infant to comply with parental commands.

In contrast to the position mentioned above, a number of researchers and theorists contend that compliance is only achieved through negative responsiveness to noncompliance. Specifically, rule enforcement (Lytton, 1977), and punishment including physical intervention, threats of punishment, and withdrawal of love (Freud, 1923/1960, 1933; Bailey, 1977) are said to foster infant compliance. In essence, the infant complies to avoid physical punishment and as a defense against losing his or her parent's love.

Whichever theoretical position one takes in regard to the origins of infant compliance, the willingness to comply is considered to be an essential step in the socialization of the infant (Stayton et al., 1971). According to Hogan (1973), a person is not considered to be socialized, or an accepted member of society, until he or she obeys its rules, prohibitions, and values.

Therefore, it is of major importance that a determination be made regarding which behaviors are related to infant obedience or compliance. It is interesting to note that the little that is known regarding this topic almost exclusively refers to mother-infant interaction, totally disregarding the father's role with respect to infant compliance. It is the purpose of the present study to determine the relationship of positive and negative responsiveness to infant compliance, as well as to compare the role of maternal and paternal responsiveness in the development of infant obedience.

Responsiveness and Infant Compliance

According to Stayton et al. (1971), infants reared in a positive, responsive manner should obey their parents' commands to a greater degree than infants raised by punitive, rejecting methods. In order to test their hypothesis, Stayton et al. observed 25 infants and their mothers from the time the infants were nine months of age until they reached their first birthday. The mother-infant pairs were observed in their own homes for four hours every three weeks. The mothers in the study were rated as to the degree to which they accepted, cooperated with, and were sentitive to, their infants' signals. Also measured were the mothers' use of verbal commands, and the degree

to which their infants complied with their requests. Instances of punishment of noncompliance were also noted.

As a result of their study, Stayton et al. (1971) found that infant compliance was strongly and positively related to maternal acceptance, cooperation, and sensitivity. They also discovered that these three variables were highly intercorrelated, and in general measured the responsiveness of the infant's social environment. Stayton et al. (1971) also related punishment or disciplinary practices to infant compliance but they failed to find a significant correlation between these two variables.

One can conclude from the results by Stayton et al. (1971) that positive, rather than negative, responsiveness is related to infant compliance. A number of studies appear to confirm this viewpoint. As a result of a study regarding the compliance of three- to eight-year-old children, Crandall, Orleans, Preston, and Rabson (1958) found that rewarding compliance predicted compliance to a far superior degree than punishing noncompliance. Similarly, Jason (1976) discovered that the use of praise significantly increased the compliance of 12-to-24-month-old children, while Minton, Kagan, and Levine (1971) found that punishment of noncompliance was positively related to the disobedience of 27-month-old males.

Although the research cited above appears to question, if not negate, the relationship between negative

responsiveness and infant compliance, a number of studies seem to refute this conclusion. In particular, it has been shown that negative responsiveness alone (Bailey, 1977) or in conjunction with positive responsiveness (Lytton, 1977) is significantly related to infant obedience.

As a means of determining the variables correlated with infant compliance, Bailey (1977) observed 15 mothers and their 13½-to-14½-month-old infants in their own homes on six occasions. Among other items, Bailey measured the degree to which positive reactions to infant compliance and negative reactions to noncompliance were related to infant obedience. According to Bailey, positive responses to infant compliance included behaviors such as giving praise or concrete rewards, while negative responses to disobedience consisted of various punitive actions such as physically forcing compliance, physically punishing the child, and using love withdrawal statements. Positive responsiveness also included maternal compliance with infant commands.

As a result of her study, Bailey (1977) established a positive relationship between infant compliance and only one variable, i.e., punishment of noncompliance. According to Bailey, she was unable to compute the correlation between infant obedience and the more positive

maternal behaviors since the mothers in her study did not display these behaviors in a consistent and reliable enough manner to permit this analysis. Bailey therefore concluded that the lack of consistency made it unlikely that a significant relationship between positive responsiveness and infant compliance existed.

It is evident that Bailey's (1977) results directly contradict the Stayton et al. (1971) finding that positive, rather than negative, responsiveness was significantly related to infant compliance. One of the reasons for the disparity between the two studies may be the fact that they employed different measures of positive and negative responsiveness. This appears to be the case since Stayton et al. used a global measure of positive responsiveness wich included any instance of responsive behavior, whereas Bailey limited her measure of positive responsiveness to maternal compliance and offering praise and reward for infant compliance. However, regarding negative responsiveness, Bailey used the broader measure. Specifically, in Stayton et al.'s study negative responsiveness was comprised of only one variable, i.e., forced physical compliance, whereas Bailey's concept not only included forced compliance, but also physical punishment, withdrawal of love statements, and the issuance of additional commands. It is interesting to note that the

more extensive measures of positive and negative responsiveness were significantly related to infant compliance, whereas the less inclusive measures of these variables failed to achieve significant results. Therefore, it is possible that both positive and negative responsiveness are related to infant compliance if they are measured in a broad enough manner. Lytton's (1975, 1977, 1979) studies of this general topic appear to demonstrate the validity of this statement.

As a result of a study which explored the relationship between parental behavior and the compliance of their two-and-one-half-year-old sons, Lytton (1977) discovered that both positive and negative parental responses predicted their children's compliance. In particular, the children's compliance was predicted by such positive behaviors as maternal compliance, and the use of psychological rewards (e.g., praise, approval) in response to the boys' obedience, as well as by negative responsiveness to noncompliance in the form of any behavior used to consistently enforce rules. However, Lytton (1975, 1979) also found that although physical control and other negative actions (e.g., verbal disapproval) facilitated both compliance and noncompliance, they exerted a greater positive effect on noncompliance. Similarly, positive actions (e.g., verbal expressions of love, approval,

positive contact, play, etc.) were found to enhance compliance more than noncompliance.

Although Lytton's (1975, 1977, 1979) studies support the position that both positive and negative responsiveness are related to compliance, they also demonstrated that this relationship is a complex one, and thus may account for the great deal of controversy as to the exact nature of the roles which positive and negative responsiveness play in promoting infant obedience. For example, as has already been noted, Bailey (1977) established a positive relationship between punitive behaviors and infant compliance. However, Lytton (1977) found that two of the behaviors which Bailey used to represent punishment were negatively correlated with compliance in his study. Specifically, Lytton discovered that withdrawal of love was negatively (but not significantly) related to compliance, while physical punishment negatively predicted compliance. In addition, in contrast to Bailey, Lytton and others (e.g., Jason, 1976; Crandall et al., 1958) have found that certain responsive behaviors of a positive nature were positively related to compliance. In particular, Lytton established a positive relationship between parental compliance with infant commands and infant compliance, whereas Bailey was unable to correlate these two variables (as a result of the variable nature of maternal

compliance in her study). Also unlike Bailey, Lytton and a number of other researchers (Jason, 1976; Crandall et al., 1958) found that compliance was significantly related to the use of psychological rewards.

It is apparent from the studies reviewed above that a consensus has not yet been reached regarding the specific positive and negative parental responses which are related to infant compliance. One of the reasons for the discrepancy in findings may be the fact that a number of studies based their results on subjects of different ages. For instance, Bailey (1977) observed 13½-to-14½-month-old subjects, whereas Lytton (1975, 1977, 1979) studied the behavior of two-and-one-half year olds. Therefore, age differences may account for the contradictory findings of these two researchers. However, a number of studies which produced divergent results observed subjects who overlapped or were similar in age. Both Bailey and Stayton et al. (1971) studied subjects who were close to one year of age, while Jason's (1976) sample represented an age range which also included subjects who were the same age as Bailey's infants. Therefore, age alone cannot explain the differences found in the compliance literature.

Another factor which may have elicited the diverse results in the compliance research is the effect of various sample differences such as sex, temperament, and

language comprehension or intelligence. With respect to sex, a number of researchers (e.g., Minton et al., 1971; Stayton et al., 1971) have found sex differences regarding infant compliance. For example, Minton et al. found that males tended to violate more prohibitions than females. However, the relationship between sex and compliance is called into question by the fact that neither Bailey (1977) nor Crandall et al. (1958) found a relationship between these two variables. Therefore, the effect of sex on compliance remains uncertain. It is unlikely that additional sample differences such as temperament, language comprehension, and intelligence produced the variability in the compliance literature since neither temperament (Bailey, 1977) nor various cognitive differences including language comprehension and intelligence (Crandall et al., 1958; Bailey, 1977) were found to be related to compliance.

One other possible explanation for the discrepancies found in the compliance literature is the failure of all of the infant (i.e., under two years of age) studies to ascertain the effect of the father's behavior on infant compliance. This may be a major oversight if the father's behavior influences the relationship between the mother's behavior and infant compliance, i.e., the relationship which has been the focus of the infant compliance research to date. As a part of a study of the

effect of parental behavior on infant development, Clarke-Stewart (1978) found that the father's actions affected certain aspects of mother-infant interaction. For example, Clarke-Stewart found that fathers' talking and playing with infants at one age was highly associated with mothers' talking and playing with the children at a later age. Therefore, it may be speculated that paternal behavior may also elicit changes in mother-infant interaction with respect to compliance. Support for this supposition is found in Lytton's (1978) study of the correlates of the compliance behavior of two-and-one-half year old males.

Lytton (1979) found that fathers do exert an influence on maternal behavior related to child compliance. For example, Lytton found that father presence increased the likelihood of the child's compliance with maternal directions. However, when Lytton (1977) studied the relationship between parental (both mothers and fathers) behavior and compliance to both parents (taken as a whole), he found that only maternal behaviors significantly predicted compliance. This finding is somewhat confounded by Lytton's inability to include paternal compliance with children's commands as a variable in his analysis as a result of problems with missing data. This exclusion may have seriously affected the results of Lytton's study

since he found that not only maternal but paternal compliance as well was significantly related to child compliance. Lytton also failed to separate the parental variables which predicted compliance with maternal versus paternal commands since he used an overall measure of compliance (i.e., a summation of paternal and maternal commands that were complied with by their children). Therefore, the question remains as to which maternal and paternal behaivors predict compliance to either parent.

Statement of Purpose and Hypotheses

It is evident that the compliance literature to date is fraught with controversy and contradictions regarding the role of positive and negative responsiveness in the development of infant obedience. Several factors appear to be responsible for this discordance, including the use of varying definitions of positive and regative responsiveness, as well as observing subjects of different ages, and excluding fathers. It was the purpose of the present study to resolve some of the controversy with respect to this issue. Specifically, the present study sought to determine the relationship between positive and negative responsiveness and infant compliance with parental commands. The study also compared the relationship between mothers' and fathers' behavior and infant obedience. Therefore, the major hupothesis tested by the present study was as follows:

Hypothesis 1: Maternal and paternal responsiveness are positively related to infant compliance with parental commands.

Contained within the major hypothesis are several specific hypotheses as follows:

Hypothesis 1a: Positive responsiveness is positively related to compliance with parental commands.

Hypothesis 1b: Negative responsiveness is positively related to infant compliance with parental commands.

Hypothesis 1c: Nonresponisveness is negatively related to infant compliance with parental commands.

CHAPTER II

METHOD

Subjects

The sample was comprised of 15 first and only born infants (10 males, 5 females) and their mothers and fathers. The average age of the infants was 20 months (range: 18-22 month). The families were selected from the Lansing, Michigan, area and surrounding communities. The families were all from the lower-middle to upper-middle class. Two methods were used to locate families willing to participate in the present study. One method was to send letters to prospective families describing the general nature of the study (see Appendix A for a copy of the letter sent to parents). Enclosed with the letters was a post card which interested families returned to the author of the present study. All families who indicated interest in the study were included in the sample which was studied. A second method of locating subjects was to call families on the telephone, outline the nature of the study and subject requirements (identical to those listed in the "letter to parents"), and ask if the families would agree to participate. All families who agreed to

be subjects were included in the present study. Approximately 75 familes were contacted by phone or letter. Since 15 (out of 75) families agreed to participate, a return rate of 20% was achieved. The names of all of the families included in this research were obtained from Lamaze class lists and county birth records. Once a family agreed to participate in the study, they were contacted by phone, at which time the four observation sessions were scheduled.

First born infants were chosen as the subjects (along with their parents) of the present study to control for the effect of birth order on parent behavior. This decision was necessary since a number of researchers (e.g., Cohen and Beckwith, 1977; Rubenstein, 1967) have found that mothers are more responsive to first born than later born children. It was also decided that infants without siblings would only be included in the study in order to eliminate the effect of the presence of other siblings on the parent's ability to respond to his or her children. In addition, as a means of measuring the presence of sex differences regarding infant compliance, both male and female infants were included in the study. An attempt had been made to include an equal number of males and females in the present study. However, this attempt was made impossible by the fact that during the time period allowed

for subject recruitment (two months) many more families with males volunteered for the study than families with females. Also, any family which met the requirements for the study was included. Therefore, the ratio of males to females (10:5 or 2:1) in the present study represents the proportion of families with males to females which agreed to participate in the study.

Infants approximately 20 months in age were chosen as the subjects (along with their mothers and fathers) for a number of reasons. By 20 months of age infants are fairly mobile and at least somewhat verbal, and thus better able to interact with their parents. Also, an age was chosen at which fathers were known to interact with their infants to a similar degree as mothers, at least when the father is present in the home. For example, by the time infants reach 20 months of age, Clarke-Stewart (1978) found that fathers play as often with the infants as their mothers. Both mothers and fathers were also (along with their infants) included as subjects in the present study as a means of comparing the manner in which the behavior of each of the parents related to infant compliance. Fathers were also included in the study as a result of the fact that no one to date has measured the relationship between paternal behavior and the compliance of children under two years of age.

An attempt was made to choose subjects of the same socioeconomic status (in this study, middle class) by selecting parents who either owned their own home or were enrolled in, or had graduated from college, since there is some evidence that socioeconomic status interacts with parental use of commands. For example, whereas Tulkin and Kagan (1972) and Beckwith (1972) found no social class differences regarding the use of verbal prohibitions, Minton et al. (1971) found that lower class mothers, as determined by education level, prohibited more behaviors than upper class mothers. Minton et al. also found that the children of more educated mothers were more compliant than the children of less educated mothers.

Observation Method

The Parent-Infant Responsiveness, Command, and Compliance Record

The Parent-Infant Responsiveness, Command, and Compliance Record (PIPCCR), developed by the author, was used to record positive and negative responsiveness, non-responsiveness, commands (prescriptions and proscriptions), compliance, and parents' presence and absence in the room in which the infant was present. Positive responsiveness consisted of six behaviors including verbalizations, play, positive affect, and positive contact, as well as compliance to prescriptive (do's) and proscriptive (don't's)

commands. Negative responses were represented by negative affect, negative contact, and prescriptive and proscriptive commands. Nonresponsiveness included noncompliance to prescriptive and proscriptive commands. Two types of commands (prescriptive and proscriptive) were included in the PIRCCR as a means of determining whether the type of command affected the relationship between parental responsiveness and infant compliance. Definitions of each of the PIRCCR categories are presented in Appendix B.

The PIRCCR was used to record parent behavior directed toward the infant and vice versa. It was not used to record mother-father interaction. An observer recorded each behavior in the order in which it occurred within a ten-second recording interval. Behaviors which occurred simultaneously were given the same number. Recording was continuous, i.e., the observer moved to the next ten-second interval as soon as the preceding interval had expired (signalled by a taped "beep" which the observer listened to by means of an earphone attached to a portable tape recorder which she carried during the observation session). A behavior was recorded more than once in an interval only if it was preceded by another category of behavior. Two forms of the PIRCCR were used. Form 1 was used to record infant behavior, whereas Form 2

was used to record both parent and infant actions. PIRCCR observer instructions and scoring forms are presented in Appendix B.

PIRCCR Rater Selection and Training, and Inter-rater Reliability

The PIRCCR raters consisted of three females, two of whom were graduate students (one the author of the study), and one of whom was an undergraduate student at Michigan State University. The undergraduate student received independent study credit for her participation, whereas the graduate student was paid $3 an hour for her work. A decision was made to select female raters as a means of preventing any possible rating differences, as well as subject reactions as a function of the difference in the sex of a rater.

Raters were trained over a two-month period of time. Prior to training the actual raters used in the present study, four other raters were trained over a nine-month period as a means of pilot-testing training techniques, as well as providing extensive pilot-testing of the ease of administration of the PIRCCR (e.g., with respect to the continuing recording method, and the 10-second rating interval). Since pilot-testing determined that there were no particular difficulties with respect to the training of raters or the ease of administration

of the PIRCCR, the raters participating in the present study were then trained.

Raters were trained by the following method. First, they were asked to memorize the rating categories of the PIRCCR. One rater was asked to memorize the infant behaviors presented in Form 1 of the PIRCCR (see Appendix B), and was entitled the infant rater. The other two raters memorized the parent and infant behaviors presented in Form 2 of the PIRCCR (see Appendix B), and were labeled the family raters. It is to be noted that the infant rater was kept unaware of the parental behaviors under study, whereas both types of raters were kept unaware of the exact nature of the study. The infant rater was kept uninformed of the parental behavior under study in order to eliminate the effect of this knowledge on her ratings, thus providing an unbiased rating of infant compliance, i.e., unaffected by the knowledge of how responsive parents were acting. In addition, both family and infant raters were kept unaware of the major purpose of the present study (i.e., to relate parent responsiveness to infant compliance) as an additional means of obtaining unbiased ratings. One exception to this practice was the fact that one of the two family raters was the author of the present study. However, it was decided that any bias resulting from this fact would be controlled by having

two instead of one family raters. The two family raters divided the subjects an equally as possible (one family rater observed eight families--including three girls and five boys, while the other family rater observed families with two girls and five boys, i.e., seven families in all), i.e., as evenly as was possible according to number and sex of infant. The infant rater observed all fifteen infants.

Once the raters had mastered the PIRCCR categories, they were taken separately by the author to observe pilot families. The author rated simultaneously with the rater under training during these visits. Every 12 PIRCCR intervals or two minutes, the author and other rater would stop rating and compare their ratings. Any differences in rating would be discussed at that time. Rating would then continue. Training sessions typically lasted one hour. Both the infant and family rater were trained by the author using this method. At the end of the training period, when it appeared that the raters understood the PIRCCR categories and were able to record behavior with apparent ease, inter-rater reliability (correlation) was then ascertained. Infant rater reliability was computed over seven observation sessions, whereas the reliability of family ratings was computed over six sessions (all sessions were approximately one hour in length). Reliability testing was carried out according to the same

format as rater training, i.e., reliability was established between the author and the infant rater, as well as between the author and the family rater. The results of the reliability tests are presented below.

Inter-rater reliabilities for family raters regarding the 16 categories of behavior of the PIRCCR-Form 2 ranged from .65 to 1.0, with the exception of one category, noncompliance to infant proscriptions, which never occurred during reliability testing. The family raters were in total agreement that this behavior did not occur. The mean reliability over the remaining 15 categories was .90. Interrater reliabilities for family raters are presented in Table 1.

Inter-rater reliabilities for infant raters regarding Form 1 of the PIRCCR ranged from .40 to .98 with a mean reliability of .82 for the total four categories. The only category to receive a reliability of less than .82 was infant compliance with proscriptions. The rather low reliability (r = .40) of this category was attributed to its extremely low occurrence rate during reliability testing. Inter-rater reliabilities for infant raters are presented in Table 2.

Procedure

The 15 first and only born infants (10 males, 5 females) and their parents were observed in their own

TABLE 1.--Inter-rater reliabilities for family raters for the 16 categories of the PIRCCR, Form 2 (over 7 observation periods)

Category	Reliability $\underline{r}$
1. Verbalizations	.98
2. Contact-Positive	.95
3. Affect-Positive	.88
4. Play	1.00
5. Contact-Negative	1.00
6. Affect-Negative	1.00
7. Prescriptive-Command	.88
8. Compliance with Infant Prescriptions	.97
9. Noncompliance with Infant Proscriptions	.70
10. Proscriptive-Command	.92
11. Compliance with Infant Proscrliptions	.65
12. Noncompliance with Infant Proscriptions*	**
13. Infant Compliance with Parental Prescriptions	.89
14. Infant Noncompiance with Prescriptions	.80
15. Infant Compliance with Parental Proscriptions	.92
16. Infant Noncompliance with Proscriptions***	1.00
Average Reliability over the 16 Categories	.90

*Categories 1-12 are parent behaviors.

**Zero occurrence but 100% agreement.

***Categories 13-16 are infant behaviors.

TABLE 2.--Inter-rater reliabilities for infant raters for the four categories of the PIRCCR, Form 1 (over 6 observations)

Category	Reliability
1. Infant Compliance with Prescriptions	.98
2. Infant Noncompliance with Prescriptions	.93
3. Infant Compliance with Proscriptions	.40
4. Infant Noncompliance with Proscriptions	.97
Average Reliability Over the 4 Categories	.82

homes on four separate occasions, for 40 minutes (240 consecutive 10-second intervals) per visit. Two visits consisted of family rating sessions, once when mother and infant were at home (Situation 1), and once when both mother and father were present with their child (Situation 2). The other two visits were comprised of infant rating sessions (where only infant behavior was recorded) which occurred one time when the infant was home with just his or her mother (Situation 3), and another time when the infant and both parents were present (Situation 4). The order of the four visits was randomly varied. For each family, all of the four visits were carried out within a two-week period. All observation sessions were carried out during a time of day which was basically unstructured for the infant, i.e., not during a major caretaking

activity such as meals and baths. Also, ratings were temporarily stopped during the rating sessions for diaper changes. At the end of the fourth visit each family was paid $5 for their participation in the study.

The families were observed in their own homes as a means of determining what occurs in their typical and natural environment. In addition, infants were observed in dyadic interaction with their mothers and in triadic interaction with both their mothers and fathers as a result of the fact that parent-infant interaction has been found to typically occur in this manner (Clark-Stewart, 1978). Although it would have been of interest to observe infants at home alone with their fathers, it has been found that this circumstance does not typically occur (Clarke-Stewart, 1978). Therefore, this condition was not included in the present study since only typically occurring interactions were of interest. It was also necessary to include a separate mother-infant observation since it has been found that mothers tend to be much less active with their infants when their husbands are present (Clarke-Stewart, 1978). Therefore, as a means of measuring the effect of father presence on mother-infant interaction, mothers were observed with their infants while the fathers were present and absent. This format was also included as a means of permitting some measurement

of the degree to which the infants' behavior was affected by the presence and absence of their fathers.

Infant behavior was rated separately (infant ratings) and in conjunction with parental behavior (family ratings) for a number of reasons. First, as noted earlier, separate ratings of infant compliance, i.e., without knowledge of the degree to which parents were responding to their infants' behavior, provided an unbiased record of infant obedience (unbiased by parent behavior). Secondly, the procedure of having two types of ratings provided the means by which parent behavior in one session (e.g., Situation 1) could be related to an unbiased measure of infant behavior in another session (e.g., Situation 3). In essence, this procedure enabled one to relate parent behavior exhibited during one time or situation to infant behavior enacted at another time or session, i.e., across time. Finally, having two types of ratings (family and infant) provided some means of comparing the ease and reliability of individual (i.e., infant ratings) versus family (dyadic and triadic) rating.

Data Coding

Data collected by means of the PIRCCR were coded according to the following procedures. Each instance of maternal and paternal responsiveness behavior was coded in the following manner. A parental behavior was scored

as being responsive in nature only if it directly followed an infant behavior within the same 10-second interval. If more than one parental behavior occurred after an infant behavior, all of the behaviors were coded as being responsive. Parental responsiveness behaviors were only scored if the parent was in the same room as the infant at the time of the interaction. Parental compliance to infant prescriptions and proscriptions were automatically scored as responsive, while parental noncompliance to these commands were automatically scored as nonresponsive. Infant compliance to parental prescriptions and proscriptions were coded as they occurred, as were all instances of noncompliance to parental commands.

Data Reduction

The raw data collected by means of the PIRCCR were reduced for each of the four observation situations. Specifically, parental responsiveness categories of behavior and infant compliance to parental commands were summarized as described below.

Parental Responsiveness

The raw data were the number of responsive behaviors exhibited by mothers and fathers during an observation session. To control for differences in responsiveness frequencies among parents during the same observation

situation, a responsiveness ratio was computed which represented the proportion of instances in which the parents responded to, rather than ignored, their infants' behavior by means of the following formula:

$$\frac{\text{Frequency of responsiveness behavior}}{\text{Total of all instances of responsiveness and nonresponsiveness/session}}$$

Each of the following 10 categories of parental responsiveness were reduced to the form of a proportion by means of the preceding formula:

1. Verbalizations
2. Contact-Positive
3. Affect-Positive
4. Play
5. Contact-Negative
6. Affect-Negative
7. Prescription-Command
8. Compliance with Infant Prescriptions
9. Proscription-Comand
10. Compliance with Infant Proscriptions

Infant Compliance

The raw data were the frequency of infant compliance with parental prescriptive and proscriptive commands for each session. As a means of controlling for

differences in frequencies regarding compliance and noncompliance among the infants in the study, i.e., within the same situation or type of session, a compliance ratio was computed for each session for each of the 15 infants. The following formula was used to create a compliance ratio for both prescriptive as well as proscriptive compliance:

$$\frac{\text{Frequency of compliance (to prescriptions or proscriptions)}}{\text{Total compliance + noncompliance instances (to prescriptions or proscriptions) per session}}$$

A proportion of noncompliance to prescriptions and proscriptions (computed separately) was computed as follows:

$$\text{Noncompliance (proportion)} = 1 - \text{compliance proportion}$$

Since noncompliance represented the inverse of compliance as computed by the formulas outlined above, all correlations between compliance and responsiveness are identical to the correlations between noncompliance and responsiveness, except that the direction of the correlation is reversed. Therefore, in order to avoid redundancy in presenting results of the data analyses to be discussed below, only correlations referring to compliance were itemized.

Statistical Analyses

In order to determine which parent responsiveness variable predicted infant compliance, a stepwise multiple regression analysis was used. Measures of infant compliance were employed as the criterion variables while measures of parental responsiveness behaviors served as the predictor variables. Selected as significant predictors were those variables which met the following criteria: (1) each overall stepwise *F* was significant at the .05 level or better, (2) within any one stepwise regression, the overall *F* of the first step in the regression, as well as any steps following, must be significant at the .05 level or better, up to and including the final significant step, (3) the *F* ratio for the Beta (standardized partial-regression coefficient) of the predictor variable was significant at the .05 level or better.

Pearson product-moment correlational analyses were employed to study the relationship between observational sessions with respect to parent responsiveness and infant compliance. These correlations were used to determine whether there was a significant (.05 level or better) correlation across sessions, thus justifying the summation of behavior across observations.

In order to determine the presence of sex differences in infant compliance behavior, a one-way analysis

of variance was conducted for each compliance variable in all four sessions. The resulting F ratios were considered to be significant if they reached the .05 level or better. If no significant sex differences were found, male and female compliance scores were summed.

As a means of determining differences in the degree to which infants complied with maternal versus paternal commands, a number of t-tests for correlated samples were computed. T-tests were also conducted to determine infant compliance differences regarding prescriptive versus proscriptive commands. T-tests were considered to be significant if they reached a .05 level of significance or better for a two-tailed test.

In an attempt to reduce the number of parental responsiveness predictor variables from 10 to a lesser number, numerous coefficient alphas were computed. In the coefficient alpha tests the 10 responsiveness variables were treated as 10 test items, which were inter-correlated as a means of measuring the degree to which the items measured a single concept or type of responsiveness. This analysis provided the means by which redundant categories (i.e., measuring the same type of responsiveness) could be summed, thus reducing the overall number of predictor variables to be entered in the stepwise multiple regressions. Responsiveness behaviors were summed if they achieved a coefficient alphas of .60 or better.

CHAPTER III

RESULTS

Parent Responsiveness Item-Analysis--Coefficient Alphas

As a result of the fact that none of the coefficient alphas regarding the 10 responsiveness items reached the .60 level of significance, the 10 responsiveness variables were treated separately. Therefore, the results of the multiple regression analyses presented below are based on stepwise multiple regressions in which all 10 responsiveness variables were entered (as predictor variables).

Infant Compliance Behavior--Sex Differences

One-way analyses of variance of sex differences with respect to infant compliance with parental prescriptions and proscriptions revealed no significant differences. Therefore, male and female compliance ratios (with respect to prescriptions as well as proscriptions) were summed for each observation situation. The infant compliance criterion variables which were entered into the stepwise multiple regression analyses (the results of which are reported later on in this exposition) were thus representative of an overall measure of infant

compliance rather than a measure of male or female compliance.

Predictors of Infant Compliance

In order to determine the parental responsiveness variables which predicted infant compliance to parental commands, several stepwise multiple regression analyses were conducted using ten PIRCCR responsiveness items as predictor variables, and two infant compliance variables (infant compliance to prescriptions and proscriptions) as criterion variables. Significant parental predictors (determined according to the criteria outlined in the Method section) were determined for infant compliance in each of the four observational situations. As outlined in the Method section, four observations were conducted comprising the following situations:

1. Situation 1: family rating: mother and infant present in the home
2. Situation 2: family rating: mother, father, and infant present in the home
3. Situation 3: infant rating: mother and infant present in the home
4. Situation 4: infant rating: mother, father, and infant present in the home

Within this general rubric, parental responsiveness in Situations 1 and 2 was used to predict infant compliance in all four situations. Specifically, the following multiple regressions were conducted:

1. Maternal Responsiveness Situation 1 predicting infant compliance in Situations 1 and 3

2. Maternal Responsiveness Situation 2 predicting infant compliance in Situations 2 and 4

3. Paternal Responisveness Situation 2 predicting infant compliance in Situations 2 and 4

4. Parental Responsiveness (mother and father) predicting infant compliance to mothers in Situation 2

5. Parental Responsiveness Situation 2 predicting infant compliance to fathers in Situation 2

The results of the preceding multiple regressions are described below.

Maternal Responsiveness Predicting Infant Compliance to Maternal Prescriptions

As hypothesized, infant compliance to maternal prescriptions was significantly predicted by two positive responsiveness behaviors. Specifically, maternal positive affect and compliance to infant prescriptions predicted infant compliance to maternal prescriptions (within the same situation, i.e., Situation 1). Also, as expected, maternal nonresponsiveness as measured by noncompliance to infant prescriptions negatively predicted infant compliance. Contrary to prediction, negative responsiveness in the form of maternal proscriptions and negative contact predicted infant noncompliance to maternal prescriptions rather than compliance, i.e., within the same situation

(Situation 1). These results are presented in Table 3. However, when negative responsiveness was used to predict infant compliance in Situation 3, i.e., across time or observational sessions, it was found that negative responsiveness had a somewhat different relationship to infant compliance than it had in Situation 1. In particular, contrary to Situation 1, negative contact positively predicted infant compliance to prescriptions in Situation 3, whereas, like Situation 1, maternal proscriptive commands predicted noncompliance in Situation 3 (see Table 4). Both Situations 1 and 3 represented conditions where mothers were alone with their infants. In contrast to the situations where mothers were home alone with their infants, maternal responsiveness (both positive and negative) failed to significantly predict infant compliance to prescriptions in Situations 2 and 4 (when both mothers and fathers were home with their infants).

Maternal Responsiveness Predicting Infant Compliance to Maternal Proscriptions

Only one responsiveness variable was found to predict infant compliance to maternal proscriptions. Specifically, positive affect in Situation 1 negatively predicted infant compliance in Situation 3 or across time (see Table 5). Therefore, rather than predicting

TABLE 3.--Infant compliance with maternal prescriptions in Situation 1 and significant Situation 1 maternal responsiveness predictor variables based upon stepwise multiple regression analysis

Child Criterion Variable	Parent Responsiveness Predictors	Multiple r	r^2	Simple r	Beta Weight	F for Beta Weight	Significance Level
Infant Compiance with Prescriptions	Proscriptive Commands	.644	.415	-.644	-.348	7.28	.05
	Positive Affect	.794	.630	.548	.515	18.25	.001
	Negative Contact	.863	.744	-.566	-.412	11.10	.01
	Compliance With Infant Prescriptions	.931	.867	.337	.378	9.17	.01

TABLE 4.--Infant compliance with maternal prescriptions in Situation 3 and significant Situation 1 maternal responsiveness predictor variables based upon stepwise multiple regression analysis

Child Criterion Variable	Parent Responsiveness Predictors	Multiple r	r^2	Simple r	Beta Weight	F for Beta Weight	Significance Level
Infant Compliance with Prescriptions	Proscriptive Commands	.599	.359	-.599	-.763	16.31	.01
	Negative Contact	.783	.613	.294	.530	7.87	.05

TABLE 5.--Infant compliance with maternal proscriptions in Situation 3 and Significant Situation 1 maternal responsiveness predictor variables based upon stepwise multiple regression analysis

Child Criterion Variable	Parent Responsiveness Predictor	Multiple r	r^2	Simple r	Beta Weight	F for Beta Weight	Significance Level
Infant Compliance with Proscriptions	Positive Affect	.546	.298	-.546	-.546	5.52	.05

compliance, positive responsiveness in this case predicted noncompliance to maternal proscriptive commands.

Paternal Responsiveness Predicting Infant Compliance to Paternal Prescriptions

As predicted, positive responsiveness in the form of paternal compliance with infant prescriptions (in Situation 2) predicted infant compliance with paternal prescriptive commands, but only across time (i.e., in Situation 4). Also, as expected, noncompliance with infant prescriptions (comprising a measure of paternal nonresponsiveness) negatively predicted infant compliance (see Table 6).

Paternal Responsiveness Predicting Infant Compliance to Paternal Proscriptions

Similar to prescriptions, infant compliance with paternal proscriptions (in Situation 4) was predicted by paternal compliance with infant proscriptions only across time or in Situation 2. In addition, paternal noncompliance with infant proscriptions or nonresponsiveness predicted infant noncompliance rather than compliance with proscriptions across time or in Situation 4 (see Table 7).

TABLE 6.--Infant compliance with paternal prescriptions in Situation 4 and significant Situation 2 paternal responsiveness predictor variables based upon stepwise multiple regression analysis

Child Criterion Variable	Parent Responsiveness Predictor	Multiple r	r^2	Simple r	Beta Weight	F for Beta Weight	Significance Level
Infant Compliance With Prescriptions	Compliance with Infant Prescriptions	.549	.302	.549	.549	5.61	.05

TABLE 7.--Infant compliance with paternal proscriptions in Situation 4 and significant Situation 2 paternal responsiveness predictor variables based upon stepwise multiple regression analysis

Child Criterion Variable	Parent Responsiveness Predictor	Multiple r	r^2	Simple r	Beta Weight	F for Beta Weight	Significance Level
Infant Compiance with Proscriptions	Compliance with Infant Proscriptions	.635	.404	.635	.635	8.80	.05

Parental (Mother and Father) Responsiveness Predicting Infant Compliance to Either Parent

Contrary to prediction, maternal responsiveness when both parents were present with the infant (in Situation 2) failed to predict infant compliance with prescriptions and proscriptions within the same situation. Similarly, paternal responsiveness also failed to predict infant compliance within the same session (Situation 2). Therefore, as a means of determining whether this lack of significant results was elicited by excluding the effect of the other parent's behavior on the infant's tendency to comply with a parent's commands, both maternal and paternal responsiveness behaviors were used to predict infant compliance with maternal commands in Situation 2. The same procedure was also carried out to predict infant compliance with paternal commands. As a result of these analyses, only one instance was found in which prediction was significantly improved by including both parents' behavior in the analyses. Specifically, maternal compliance with infant prescriptions was found to negatively predict infant compliance with paternal prescriptions (see Table 8).

TABLE 8.--Infant compliance with paternal prescriptions in Situation 2 and significant Situation 2 parental responsiveness predictor variables based upon stepwise multiple regression analysis

Child Criterion Variable	Parent Responsiveness Predictor	Multiple r	r^2	Simple r	Beta Weight	F for Beta Weight	Significance Level
Infant Compliance with Paternal Prescriptions	Maternal Compliance with Infant Prescriptions	.605	.366	-.605	-.605	7.51	.05

Infant Compliance with Maternal Versus Paternal Commands

No significant differences were found in the degree to which infants complied with maternal versus paternal prescriptions. Infants complied with approximately 58% of maternal as well as paternal prescriptions (averaged for all four situations). In addition, there were no significant differences in the degree to which infants complied with maternal versus paternal proscriptions in three of the four observation situations. However, in Situation 2, infants complied with a significantly ($p \leq .05$) greater degree of paternal versus maternal proscriptions (see Tables 9 and 10). On the average, infants complied with 25% of maternal proscriptions (based on the averaging of Situations 1-4) and 35% of paternal proscriptions (averaging Situations 2 and 4).

Infant Compliance with Prescriptions Versus Proscriptions

In all but one situation (i.e., Situation 2), infants complied with a significantly ($p \leq .02$) greater degree of parental prescriptions versus proscriptions. However, although infants complied with a significantly ($p \leq .001$) greater number of maternal prescriptions versus proscriptions in Situation 2, they did not significantly

TABLE 9.--Mean and standard deviation scores for infant compliance with parental (Mother and Father) prescriptions and proscriptions used in t-test analyses

	Situation(s)	Infant Compliance with Parental Commands: Prescriptions $\bar{X}$	Prescriptions SD	Proscriptions $\bar{X}$	Proscriptions SD
Mother	1	.60	.15	.31	.32
	2	.69	.19	.26	.23
	3	.53	.20	.26	.22
	4	.51	.28	.17	.35
	1-4	.58	--	.25	--
Father	2	.58	.24	.50	.40
	4	.57	.26	.20	.32
	2 & 4	.58	--	.35	--

TABLE 10.--Comparison of infant compliance with paternal versus maternal commands by means of t-tests for correlated samples

Comparison	T-Score	df	Significance Level
Maternal Situation 1 Proscriptions X Paternal Situation 2 Proscriptions	-1.37	14	ns
Maternal Situation 2 Proscriptions X Paternal Situation 2 Proscriptions	-2.51	14	.05
Maternal Situation 3 Proscriptions X Paternal Situation 2 Proscriptions	-1.75	14	ns
Maternal Situation 4 Proscriptions X Paternal Situation 2 Proscriptions	-2.04	14	ns
Maternal Situation 4 Proscriptions X Paternal Situation 4 Proscriptions	- .25	14	ns
Paternal Situation 4 Proscriptions X Paternal Situation 2 Proscriptions	-2.51	14	.05

differ in the degree to which they complied with paternal prescriptions and proscriptions (see Tables 9 and 11).

TABLE 11.--Comparison of infant compliance with prescriptions versus proscriptions by means of t-tests

Comparison	Situation	t-score	df	Significance level
Maternal Prescriptions X Proscriptions	1	3.05	14	.01
Maternal Prescriptions X Proscriptions	2	6.43	14	.001
Maternal Prescriptions X Proscriptions	3	2.97	14	.02
Maternal Prescriptions X Proscriptions	4	2.86	14	.02
Paternal Prescriptions X Proscriptions	2	.51	14	ns
Paternal Prescriptions X Proscriptions	4	3.43	14	.01

CHAPTER IV

DISCUSSION OF RESULTS

A major part of this study was designed to answer the question of whether parental responsiveness predicted infant compliance. A critical issue in the interpretation of the results was whether positive and negative responsiveness were both positively related to infant compliance while nonresponsiveness was negatively related to infant obedience. Another facet of the present study was to compare maternal and paternal responsiveness in their ability to predict infant compliance. A number of secondary issues were also explored including whether the type of command, i.e., prescriptive versus proscriptive, would influence the relationship between parental responsiveness and infant compliance. An attempt was made to further delineate infant compliance behavior by ascertaining the degree to which infants complied with prescriptions versus proscriptions, and maternal versus paternal commands. Also of interest was whether there would be any sex differences in terms of infant compliance with parental commands.

Parental Responsiveness and Infant Compliance

Maternal Responsiveness and Infant Compliance with Maternal Commands

As hypothesized, maternal responsiveness in the form of both positive and negative actions predicted infant compliance to maternal prescriptions and proscriptions. However, contrary to expectation, positive and negative responsiveness were not always positively related to infant compliance, i.e., at times predicting noncompliance rather than compliance. For example, although positive affect predicted infant compliance to prescriptive commands within the same session, it also predicted noncompliance to maternal proscriptions across time. Although a number of studies (Jason, 1976; Lytton, 1977, 1979) have found that positive affect (e.g., expressions of love, approval, praise) is positively related to infant compliance, the negative relationship between positive affect and compliance with proscriptions has not been previously determined. The novelty of this finding appears to be primarily related to the failure of previous studies to differentiate types of infant compliance, i.e., prescriptiove versus proscriptive. The benefit of making such a distinction between commands is made clear by the fact that positive affect related differently to infant compliance with prescriptions and proscriptions. One

explanation for positive affect predicting noncompliance to proscriptions is that this variable may represent a reward or reinforcer for behavior, i.e., with the expectation that the continuance of the behavior is desired. Since proscriptions call for the discontinuance of action, any behavior, such as positive affect, which promotes action would be likely to inhibit compliance with proscriptions. Also, rewarding infant behavior through positive affect may lead the infant to believe that all behavior is acceptable, thereby making the infant unwilling to accept any restriction of his or her behavior.

Another positive responsiveness behavior, i.e., compliance with infant prescriptions, was found, as expected, to predict infant compliance with maternal prescriptions. In essence, it appears that a mutual reciprocity in compliance behavior is established between mother and infant. Likewise, maternal nonresponsiveness to infant prescriptions predicts infant noncompliance, i.e., mutual nonresponsiveness. Since maternal compliance with infant prescriptions was found to predict infant compliance to maternal prescriptions, it was expected that maternal compliance with infant proscriptions would predict infant proscriptive compliance. This hypothesis was supported by the fact that Lytton (1977) found that maternal compliance with infant commands (a composite score of

all types of commands) predicted infant compliance with maternal commands. However, contrary to expectation, maternal compliance with infant proscriptions did not significantly predict infant proscriptive compliance. Perhaps, as in the case of positive affect, maternal compliance with infant proscriptions facilitates a certain degree of omnipotence in the infant which leads the infant to expect that his or her actions are not to be limited by maternal proscriptions.

As with positive responsiveness, it was also predicted that negative responsiveness would be positively related to infant compliance. This expectation was only partially fulfilled. Specifically, negative contact (e.g., physical restriction, hitting, spanking) predicted infant compliance with maternal prescription across time, but not within the same session. In fact, negative contact within the same session (Situation 1) predicted noncompliance rather than compliance with maternal prescriptions. This finding is interesting in that previous studies have also demonstrated contradictory findings regarding the relationship of negative contact to infant compliance. For example, Bailey (1977) found that negative contact, among other things, was positively related to infant compliance, whereas Lytton (1977) found that negative contact in the form of physical punishment predicted noncompliance rather than compliance with commands.

One reason for this discrepancy in findings may be that negative contact affects infant compliance differently over time. For instance, negative contact may predict noncompliance, at least initially. However, over time this relationship may change so that eventually negative contact may actually predict infant compliance. This hypothesis appears to fit the results at hand since negative contact was found to predict noncompliance in the same session, but it predicted compliance across time.

In essence, negative contact may serve as a means of instructing infants as to what behaviors are expected of them. However, it may take some time before the infant actually learns the lesson. This hypothesis is in direct contradiction to Stayton et al.'s (1971) conclusion that infants do not learn to comply by means of any particular form of instruction, but rather as a result of a natural willingness to comply which is fostered by a responsive environment. In support of this conclusion, Stayton et al. found that negative contact (defined in the exact same manner as the present study) was not significantly related to infant compliance, even over a three-month period of time. However, the applicability of Stayton et al.'s (1971) findings with respect to this study is somewhat called into question by the fact that their subjects were several months younger than the infants observed

in the present study. Therefore, the role of negative contact regarding infant compliance needs to be explored in future longitudinal studies, i.e., ones which include infants of varying ages.

It was suggested above that negative responsiveness such as negative contact might serve as a means of promoting an awareness in infants of socially acceptable, and also unacceptable behavior, i.e., an awareness that would foster infant compliance. Consequently, if this assumption is correct, one would also expect that other forms of negative responsiveness would also predict compliance. For example, one would assume that responding to an infant's behavior by means of a prohibition would also facilitate obedience. However, contrary to this line of reasoning, it was found that maternal proscriptions predicted noncompliance with maternal prescriptions within the same session, as well as across time. This finding is quite surprising since Lytton (1975, 1979) found that commands (including prescriptions and proscriptions) were more positively related to compliance than noncompliance. Also, Bailey (1977) found that proscriptions were negatively related to infants' ability to persist at an activity, thus possibly promoting cessation of activity. Such an occurrence should lead to compliance with proscriptions, which call for the cessation of a prohibited activity.

Therefore, a number of studies directly dispute the negative relationship between maternal proscriptions and infant compliance with prescriptions. An explanation of this negative relationship may be related to the fact that as the infant approaches the end of the second year of life, he or she begins to develop a tendency for negativistic behavior (Lewis, 1971). It may be hypothesized that commands, particularly of a prohibitive nature, would trigger the infant's negativism, thus resulting in a tendency not to comply.

Paternal Responsiveness and Infant Compliance with Paternal Commands

Only two types of paternal responsiveness, both positive in nature, predicted infant compliance with paternal commands. Specifically, paternal compliance with infant prescriptions and proscriptions predicted infant compliance with prescriptive and proscriptive commands, but only across time (i.e., in Situation 4). Although a broader range of maternal responsiveness variables was found to predict infant compliance as well as noncompliance, it is interesting to note that there was some concordance in findings regarding maternal and paternal responsiveness. In particular, maternal as well as paternal compliance with infant prescriptions predicted infant compliance with parental prescriptions. It appears

that paternal compliance may elicit a mutual tendency to comply between fathers and their infants, as was the case suggested to occur between mothers and infants. The possibility of a mutual reciprocity with respect to compliance between parents and infants is further supported by the fact that, contrary to mothers, paternal compliance with infant proscriptions also predicted infant compliance with paternal prohibitions.

A question remains, however, as to the reason paternal and maternal behavior differed in their relationship to infant compliance. Also of interest is why a greater number of maternal versus paternal behaviors predicted infant compliance or noncompliance, as the case may be (four versus two behaviors, respectively). With respect to the fact that mothers and fathers differed in some ways in the responsiveness items which were found to predict compliance (e.g., the relationship between compliance with infant proscriptions and infant proscriptive compliance was found to be significant for fathers but not for mothers), Clarke-Stewart (1978) also found similarities as well as differences in the manner in which maternal and paternal behavior was related to infant development. For example, paternal play was found to be significantly related to infant development, whereas maternal play was not found to be significantly related

to this variable (Clarke-Stewart, 1978). Therefore, it appears that mothers and fathers may play different roles with respect to infant compliance. In fact, the results suggest that mothers may play a greater role than fathers in fostering infant obedience. As noted above, a greater number of maternal versus paternal behaviors were found to be related to infant compliance. It was also ascertained that maternal responsiveness predicted (in a negative direction) infant compliance with paternal prescriptions, whereas paternal responsiveness failed to predict infant compliance with maternal commands. However, since the direction of the realtionship between mother, father, and infant behavior could not be determined in the present study (since its nonlongitudinal nature prevented such an analysis), the possibility of mothers' playing a greater role than fathers with respect to fostering infant compliance remains to be seen.

As noted above, mothers and fathers differed to some degree with respect to the manner in which responsive behavior was related to infant compliance. It was also apparent that one parent's behavior might possibly interfere with an infant's tendency to comply with the other parent's commands. For example, maternal compliance with infant prescriptions was actually found to negatively predict infant compliance with paternal prescriptions,

within the same session (i.e., Situation 2). This result is particularly surprising since maternal and paternal compliance with infant prescriptions was found to predict compliance with their own prescriptive commands. One speculation why maternal compliance predicts infant non-compliance with paternal prescriptions may stem from the relationship between maternal compliance and infant attachment. If maternal compliance with infant prescriptions was found to foster a secure as well as superior attachment (as compared with fathers) to the mother, the ensuing relationship might not only interfere with the infant's attachment to his or her father, but also impede the infant's tendency to comply with paternal commands. However, although Stayton et al. (1971) found that infants who possessed the most secure attachment to their mothers (in contrast to infants who had a less secure attachment) tended to comply with a significantly greater degree of their mothers' commands, they did not ascertain whether maternal compliance fostered infant attachment. Also, since Clarke-Stewart (1978) found that there were no significant differences in the degree to which twenty-month-old infants were attached to their mothers versus their fathers, the role of attachment with respect to the ability of maternal compliance with infant prescriptions negatively to predict infant noncompliance with paternal prescriptions becomes rather questionable.

Infant Compliance with Maternal Versus Paternal Commands

Although maternal responsiveness was found to be a better predictor (in terms of degree or number of items) of infant compliance than paternal behavior, parents were not found, for the most part, to significantly differ with respect to the degree to which infants complied with their commands. However, infants were found to comply with a sigificantly greater degree of paternal proscriptions as compared with maternal prohibitions, but only in Situation 2. The reliability of this finding is called into question by the fact that infant compliance with maternal versus paternal proscriptions did not significantly differ in any other observation session, i.e., including Situation 4 where both parents were home with the infant as they were in Situation 2. Therefore, it appears that infants tend to comply with their parents' commands to a similar degree. Lytton's (1976) study of the compliance behavior of somewhat older children (2½-year olds) appears to support this conclusion. Specifically, Lytton found that infant compliance with maternal and paternal commands was highly correlated. However, the reason for this correlation was not ascertained in Lytton's study. One interpretation regarding the lack of difference between the extent to which infants comply

with their parents' commands is that compliance with one parent fosters compliance with the other, perhaps in a circular fashion. Additional research with respect to the factors which actually elicit infant compliance is needed in order to test this hypothesis.

Infant Compliance with Prescriptions Versus Proscriptions

For the most part, infants complied with a significantly greater degree of parental prescriptions versus proscriptions. The one exception to this finding occurred in Situation 2. Infants were found not to differ to a significant extent with respect to the degree to which they complied with paternal prescriptions and proscriptions in this situation. However, although the difference was not significant, infants complied with a greater number of prescriptions versus proscriptions (58% to 50%, respectively). Therefore, it appears that 20-month-old infants are far more likely to comply with parental prescriptions than proscriptions. It is possible to assume that prescriptive commands are less aversive in nature than prohibitions (and thus easier to comply with) since they do not require the infant to terminate what is most likely an activity which is pleasurable to the infant. In any event, it appears that it is easier for an infant to engage in a new activity (as required in complying with

a prescription) than discontinue an ongoing behavior in order to comply with a prohibition. Support for this supposition is found in Luria's (1960) research regarding the ability of adult verbal instructions (commands) to regulate infant behavior. Specifically, Luria found that an adult verbal instruction can call forth an appropriate infant response (compliance) only if it does not come into conflict with another dominating action. According to Luria, at early ages (particularly below two years of age), an adult's verbal instruction can only start an action of the child; it can neither inhibit nor switch it to some other activity. In essence, Luria found that the child's ongoing motor behavior is a more dominant or compelling stimulus than a verbal command. In fact, Luria found that when 1½-2-year-old infants were engaged in a motor activity such as squeezing a rubber ball, a request to stop the behavior (i.e., a proscription) actually resulted in the infants intensifying their actions (i.e., squeezing the ball to an even greater degree). It is interesting to note that in the present study adult proscriptions were found to predict infant noncompliance, directly supporting Luria's finding. Therefore, one can conclude that infants (including the 20-month-olds in the present study) are developmentally incapable (at least to some degree) of complying with proscriptions, whereas they

have the capacity to comply with prescriptions, i.e., if they do not occur when the infant is already engaged in an activity. However, further research with respect to infants' developmental readiness to comply with prescriptions in contrast to proscriptions is necessary in order to determine the validity of this hypothesis.

Sex Differences in Infant Compliance

Male and female infants did not significantly differ in the extent to which they complied with parental commands in any of the four observational situations. Therefore, one can conclude that neither sex is more compliant than the other. However, Minton et al. (1971) found that, with respect to the compliance of somewhat older children (27 versus 20 months), females complied with a significantly greater number of proscriptive commands than males. One explanation regarding the difference in findings between Minton et al.'s study and the present research pertains to a possible age trend with respect to infant compliance, i.e., one that interacts with the sex of the infant. In essence, as they mature, females may become much less likely to disregard prohibitions than males. This hypothesis is supported by the fact that a number of researchers have found that girls tend to comply more readily than boys with adult demands (Maccoby and Jacklin, 1974). However, not all researchers were

found to agree with this speculation. For example, Crandall et al. (1958) eliminated sex as a factor related to compliance as a result of the fact that they failed to find any sex differences in the compliance behavior of three-to-eight-year-olds. Therefore, the relationship between sex and compliance remains in question.

CHAPTER V

SUMMARY AND CONCLUSIONS

Parental responsiveness was found to be related to infant compliance, albeit in a rather complex manner. Positive and negative responsiveness not only predicted infant compliance, but noncompliance as well. Therefore in direct disagreement with Stayton et al. (1971), one can conclude that infant compliance is not related to the presence of a basically responsive environment. In contrast, one must specify the exact type of responsiveness as well as the time and situation in which it occurs in order to accurately predict infant compliance. Furthermore, since the nature of the command (prescriptive versus proscriptive) as well as the identity of who administers it (mother or father) affects the relationship between parental responsiveness and infant compliance, these factors must also be taken into consideration prior to making any predictions with respect to infant obedience. A question also remains as to the manner in which the sex of the infant affects this relationship, thereby making it necessary to include this variable in future compliance research.

Although the present study was able to extend our knowledge regarding the relationship between parental responsiveness and infant compliance, it appears to have raised as many questions as it has answered. Of particular interest is whether parental responsiveness not only predicts infant obedience, but also the question remains as to what role responsiveness plays in fostering compliance. Also unanswered is whether mothers have a greater role with respect to developing a tendency toward obedience in their infants compared with the infants' fathers. A number of additional issues regarding infant compliance also ramain to be resolved. In particular, the degree to which parental compliance enhances infant compliance and vice versa must be determined. The manner in which maternal versus paternal behavior interacts to foster as well as interfere with the extent to which infants comply with each parent's commands needs to be ascertained. For example, do certain maternal actions actually hinder the infant's willingness to comply with his or her father's commands, as the results of the present study suggest? Also of interest is whether there are any developmental trends with respect to infant compliance. Is there a linear relationship between age and infant obedience, i.e., so that the older the infant becomes, the more he or she tends to comply with commands? Similarly, does the age

of the child affect the manner in which parenatal responsiveness related to infant compliance?

Finally, no one to date has raised the issue regarding the manner in which infant compliance may be related to the future mental health, as well as intellectual development,of the infant. Specifically, is cognitive development fostered by infant compliance? In contrast, is compliance in infancy related to future intellectual deficits, such as the inability to be creative? Can one predict future mental health, particularly regarding the ability to form mutually responsive and compliant relationships, if an individual was compliant as an infant? In addition, if compliance is the cornerstone of socialization as Hogan (1973) suggests, would disturbances in infants' ability or willingness to comply predict future psychopathology? For example, since various expressions of psychological disturbance such as delinquency or the development of anti-social personality tendencies are basically instances of noncompliance with social norms (Coleman, Butcher & Carson, 1980), are their etiologies related to compliance difficulties in infancy? Only longitudinal research will be able to provide some answers to these questions.

The questions raised above not only demonstrate the vast need for future research regarding the factors

which are related to, as well as foster, infant compliance, but they also point to the importance of implementing longitudinal studies regarding this issue. A great deal of the controversy to date with respect to the variables which are related to infant compliance may be the result of the fact that a majority of studies regarding this topic (including the present study) were short-term in nature. In essence, to expand our knowledge with respect to infant compliance, as well as to increase the validity of the findings in this area, infant obedience must be studied at various ages over extensive periods of time.

In summary, the purpose of the present study was to determine the relationship between infant compliance with parental commands and parent responsiveness (positive and negative) and nonresponsiveness. It was hypothesized that positive and negative responsiveness would be positively related to infant compliance, whereas nonresponsiveness would negatively predict infant obedience. In addition, the study sought to determine whether maternal versus paternal responsiveness differed in the manner in which they predicted infant compliance. Also of interest was whether infants would be found to comply with a greater amount of prescriptive versus proscriptive commands. Finally, an attempt was made to differentiate how the type of command (prescriptive and proscriptive)

affected the relationship between infant compliance and paternal responsiveness.

Fifteen 20-month-old infants and their mothers and fathers were recruited to participate in the present study. Parent-infant interaction was rated on four separate occasions, in the infants' own homes. Two observational situations occurred when both parents were home with their infants (each infant was an only child), while the other two sessions occurred when only mothers and infants were at home. Each observation session lasted 40 minutes. Parent and infant interaction was rated by means of a continuous observation scale (the Parent-Infant Responsiveness, Command, and Compliance Record) which was used to provide data regarding parent responsiveness and infant compliance.

Multiple regression analyses were performed in order to determine which parental behaviors predicted infant compliance, as well as to establish the direction of the relationship between parent responsiveness and infant obedience. T-tests were conducted as a means of measuring the degree to which infants differed with regard to the manner in which they complied with paternal versus maternal commands, and prescriptions versus proscriptions.

The major results were that positive and negative responsiveness, as well as nonresponsiveness, predicted

both infant compliance and noncompliance. Specifically, maternal responsiveness in the form of proscriptive commands, and compliance with infant prescriptions were found to predict infant compliance with prescriptions, but in different directions. Maternal proscriptions negatively predicted compliance with maternal compliance with infant prescriptions positively predicted obedience. It was also found that positive affect predicted infant compliance with prescriptions in the same session, while it predicted noncompliance to proscriptions across sessions. Similarly, negative maternal contact positively predicted infant obedience across time, but predicted noncompliance to prescriptions within the same session. The relationship between paternal responsiveness and infant compliance took a somewhat different form. Paternal compliance with infant prescriptive and proscriptive commands predicted infant compliance with these commands. In one instance, maternal behavior was found to predict noncompliance with paternal commands, within the same session. Maternal compliance with infant prescriptions was found to negatively predict infant compliance with paternal commands. Paternal behavior did not significantly predict infant compliance with maternal commands. Finally, it was found that, for the most part, infants do not differ with respect to the degree to which they

comply with maternal versus paternal commands. However, infants were found typically to comply with a significantly greater number of parental prescriptions versus proscriptions.

It was concluded as a result of the present study that parental responsiveness was related to infant compliance, but in a rather complex fashion. In order to accurately predict infant compliance, one must take into consideration the type of parental responsiveness which is to be used to make the predictions, the parent (mother or father) who is giving the commands, as well as the type of command (prescriptive or proscriptive) presented to the infant. Implications for the present findings, as well as the need for future research, especially longitudinal in nature, regarding this topic were discussed.

APPENDICES

APPENDIX A

LETTER TO POTENTIAL SUBJECTS

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
SNYDER HALL

EAST LANSING · MICHIGAN · 48824

Dear Parent,

I am conducting a study concerning what 18 to 22 month old infants typically do when they are at home with their mothers and fathers. If your child is in this age range, and is an only child, I would like you to consider being part of this study.

If you take part in my study, your infant will be observed in his or her own home on four separate visits. Two of the visits will take place when the infant is home with his or her mother, while the other two visits will occur when the infant's mother and father are at home. Each home visit will last about 40 minutes. As a token of my appreciation, each family that takes part in this study will be paid $5.00 for their time and consideration.

All information gathered in the course of the study will be kept confidential. At the end of the study, I will be happy to share the results of the study with you.

If you are interested in taking part in this study and would like more information about it, please return the attached post card with your name, address, and, if possible, phone number. I have found the study of infant's typical home behavior to be very rewarding, and I think both you and your child will find the experience to be interesting and enjoyable.

Sincerely,

Linda Giacomo

Linda Giacomo, M.A.
Doctoral Candidate

Albert I. Rabin, Ph.D.
Professor of Psychology
Research Supervisor

APPENDIX B

PIRCCR SCORING INSTURCTIONS AND RATING FORMS

PIRCCR INSTRUCTIONAL MANUAL

The PIRCCR is comprised of twelve types of behavior which are continuously recorded. It is divided into ten-second recording intervals. Specific scoring instructions and definitions of the behaviors measured are presented below.

General Instructions

1. In order to remain as unobstrusive as possible while coding, the observer is to stand quietly near the infant but not interact with the infant in any way. Also, the observer is not to interact with the parents during the observation period.

2. Only behavior which parents direct towards the infant, and vice versa is to be recorded. Behavior which the parents direct towards each other or towards the observer is not to be recorded.

3. The observational interval is ten seconds in length. The duration of an observational situation or home visit is forty minutes, or 240 consecutive intervals.

4. Each behavior is recorded in the order in which it occurs within the ten-second interval by means of numbering the behaviors as they occur. Numbering begins with

the number one for each interval. Simultaneously occurring behaviors are given the identical number.

5. A behavior is recorded only once during a time interval unless it is preceded by a different behavior. If this occurs, it may be recorded again.

Definition of Behaviors

1. Leave Room: whenever a parent leaves the room in which the infant is present.

2. Enter Room: whenever a parent enters the room in which the infant is present.

3. Verbalizations: any verbal communication including sounds, words, or sentences, including questions and answers. Excluded from this category are those verbalizations used to express positive or negative affect, and commands.

4. Contact-Positive: any bodily contact including touching a person's clothing which is positive in nature, e.g., kissing, hugging, and physical play.

5. Affect-Positive: any vocalization including laughter used to indicate pleasure or a positive feeling to another person, e.g., "This is fun," "I love you." Also included in this category are evaluative statements which are positive in nature such as "You're a good girl," and praise, e.g., "You did a nice job."

6. Play: the giving, showing, or offering, as well as accepting of toys or objects to be used in play.

7. Contact-Negative: any bodily contact of a punitive, harmful, painful, or restrictive (designed to prevent someone from doing something like touching a forbidden object) nature such as hitting, slapping, or holding in a restrictive fashion.

8. Affect-Negative: any verbalization indicating unhappiness or distress, e.g., cries, and disapproval or negative feelings, e.g., "You're a bad girl," "I'm mad at you," "I hate you."

9. Prescription-Command: any statement or physical gesture (e.g., pointing) designed to get someone to initiate a new behavior, e.g., "Get the ball," or the infant points to an object he or she wants the parent to give him or her.

10. Proscription-Command: any verbalization designed to get someone to stop an ongoing activity, e.g., "Don't touch the lamp," or a gesture such as an infant pushing a parent's arm to signal that he or she does not want the parent to continue holding him or her.

11. Compliance: Behaviorally meeting a prescription or proscription within three intervals (including the interval in which the command is given).

12. Non-Compiance: failing to meet a prescriptive or proscriptive command within three intervals or before a different command is given.

FORM 1

Interval	MOTHER-LEAVE ROOM	MOTHER-ENTER ROOM	FATHER-LEAVE ROOM	FATHER-ENTER ROOM	VERBALIZATIONS	CONTACT-POSITIVE	AFFECT-POSITIVE	PLAY	CONTACT-NEGATIVE	AFFECT-NEGATIVE	PRESCRIPTION-COMMAND	COMPLIANCE-PRESCRIPTION	NON-COMPLIANCE-PRESCRIPTION	PROSCRIPTION-COMMAND	COMPLIANCE-PROSCRIPTION	NON-COMPLIANCE-PROSCRIPTION
	ML	ME	FL	FE	V	CP	AP	P	CN	AN	PRE	CPL PRE	NC PRE	PRO	CPL PRO	NC PRO
1																
2																
3																
4																
5																
6																
7																
8																
9														•		
10																
11																
12																

FORM 2

TIME INTER.		LR	ER	V	CP	AP	P	CN	AN	PRE	PROCON	NCP
	LEAVE ROOM											
	ENTER ROOM											
	VERBALIZATIONS											
	CONTACT-POSITIVE											
	AFFECT-POSITIVE											
MOTHER	PLAY											
	CONTACT-NEGATIVE											
	AFFECT-NEGATIVE											
	PRESCRIPTION-COMMAND											
	PROSCRIPTION-COMMAND											
	COMPLIANCE											
	NON-COMPLIANCE											
	VERBALIZATIONS											
	CONTACT-POSITIVE											
	AFFECT-POSITIVE											
INFANT	PLAY											
	CONTACT-NEGATIVE											
	AFFECT-NEGATIVE											
	PRESCRIPTION-COMMAND											
	PROSCRIPTION-COMMAND											
	COMPLIANCE											
	NON-COMPLIANCE											
	LEAVE ROOM											
	ENTER ROOM											
	VERBALIZATIONS											
	CONTACT-POSITIVE											
	AFFECT-POSITIVE											
FATHER	PLAY											
	CONTACT-NEGATIVE											
	AFFECT-NEGATIVE											
	PRESCRIPTION-COMMAND											
	PROSCRIPTION-COMMAND											
	COMPLIANCE											
	NON-COMPLIANCE											

TIME INTER.	1	2	3	4	5	6	7	8	9	10	11	12

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