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FAMILY INTERACTIONS AND CHILD COMPETENCE IN A PRESCHOOL SETTING

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THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

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ABSTRACT

The main objective of this research was to examine associations between family interactions, particularly parental responses to children's emotional upset, and children's competence in a daycare or preschool setting.

Competence was assessed for 30 children from two-parent families by having their preschool or daycare teachers complete Baumrind's Preschool Behavior Q-Sort. Children were also given the Peabody Picture Vocabulary Test in order to assess verbal skill and task competence. Family interactions were assessed by (1) home observations (one session lasting from suppertime to the child's bedtime), (2) observer ratings (using Baumrind's Parent Rating Scales), and (3) parents' self report (using Block's Child Rearing Practices Q-Sort).

As expected, parental warmth was generally associated with increased levels of child competence in the daycare or preschool, as were moderate levels of parental control, while very high levels of parental control were associated with declines in competence. In terms of responses to children's emotional distress, competence increased sharply, then plateaued, as parents moved along a dimension from suppressive responses to expressive ones.

Sex differences were found. While parents of boys and parents of girls showed no differences in their reported child rearing practices or in their rated family interactions, the observation data revealed that boys do experience greater

firmness from their fathers and may experience higher levels of coercion. In the preschool, boys were Q-rated as less achievement oriented, less happy, and less socially effective.

Warmth and responsiveness were generally stronger predictors of competence than the power and discipline variables. Most of these relationships were of the non-linear varieties hypothesized, although (contrary to expectation) many linear relationships were found as well. Results are seen as generally supporting a theory of family interactions and competence derived from the work of Bowlby, Baumrind, Waters, and Jacklns.

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I would like to express my deep thanks to my senior supervisor, Janet Strayer, whose support and kindness have been invaluable to me. And also, of course, my deep appreciation to the parents who collaborated with me on this research. Their willingness to work long and hard, and their open-handed generosity and warmth not only made this project possible, but made it a pleasure and a delight as well.

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A. Introduction

I. Definitions of Competence

Let us begin in the dictionary, in the realm of ordinary language. To be competent is to be able to meet the demands of the situation (Webster and McKechnie, 1978). What does this mean in a developmental and psychological context? The answer to this question is also fairly straightforward. There seems to be a broad agreement in the research literature, although it is sometimes obscured by differences in emphasis and detail, terminology and level of discourse. But even the more idiosyncratic definitions of competence (e.g., by Green, Forehand, Beck, and Vosk, 1980) conform to the main usage.

"Competence" is commonly used as the most general of a family of terms (see, e.g., Connolly and Bruner, 1974). This marks a shift in vocabulary since the 1940s and 1950s, when, apparently, "effectance" and "efficacy" were the preferred terms. (The latter is still used by Bandura, 1977.) Many (e.g., Arend, Gove, and Sroufe, 1979; Block and Block, 1980; White and Watts, 1973) recognize a natural distinction between tasks involving social interaction and those which do not. Competence at the former is then usually called "social competence". Non-social competencies are of several types, and have no rubric beyond the rather unsatisfactory label of "non-social".

"Intellectual" or "cognitive competence" is often simply defined as performance on standardized tests (for a recent example, see Farel, 1980). It is, of course, capable of being much more subtly and elaborately defined, as by Piaget (e.g., Piaget, 1970). Other areas of non-social competence are, for example, "linguistic competence" and "executive ability" (these terms are used by White and Watts, 1973). "Instrumental competence", on the other hand, which sounds as if it might be non-social, is clearly said by Baumrind (1978), its chief exponent in the recent literature, to include social competence. She traces its use to Talcott Parsons, who made the distinction in 1951 between "instrumental" and "expressive" functions. The terms, curiously, refer to a temporal distinction. Instrumental functions are oriented towards future goals, while expressive ones are oriented to immediate gratification. This usage is similar to the Blocks' construct of "ego control" (Block and Block, 1980). Undercontrol of ego means that the child is impulsive; overcontrol results in perseveration; but moderate levels result in behavior that is appropriately persistent and goal-directed.

The importance of goal-oriented, planful behavior for successful adaptation has been dealt with at length by Bowlby (1969). To be adapted to one's environment means to have abilities equal to its demands-- in other words, to be competent, by definition. White (1959), in his influential article, adopts just this usage. The last members of this family of terms are "sociableness" and "sociability" (e.g.,

Clarke-Stewart et al., 1980; Stevenson and Lamb, 1979) and "social participation", a term used by Bakeman and Brown (1980). These terms all refer to the child's willingness and ability to engage in social interactions, as indicated by actually doing so. This brings us to the distinction between competence and performance, of being able to do and actually doing. Briefly, the issues are these: can a child be socially competent and be unsociable? Or if sociablility is a necessary part of social competence, does competence consist of more than simple gregariousness, and if so, in exactly what?

The distinction between competence and performance, it seems to me, is caused by an ambiguity of meaning in the term "competence". Expanding slightly the general definition given by Connolly and Bruner (1974), competence entails the following:

1. The ability to extract the relevant information from the situation.
2. The relevant skills. (We might call them the relevant sub-plans, following Bowlby, 1969, or Miller, Galanter, and Pribram, 1960.)
3. An over-all plan.
4. The absence of disruptive affect and/or feelings of powerlessness.
5. The initiation of the over-all plan.
6. The ability to utilize feedback from the execution of the plan.

The ambiguity is caused by two different definitions of

competence. In its first or "short" form, competence is taken to mean item 2, above: to be competent is to have a skill. In this case, it makes sense to draw a distinction between having a skill or competence and performing it. In the second or "long" form, to be competent is to take action in a situation (to return to Webster as well as Connolly and Brunner, 1974). To be competent *is* to perform, and lack of performance is equivalent to lack of competence (but not necessarily to lack of social skills *per se*). This is the point of view that I have adopted.

To have abilities adequate to the demands of the situation and to act on them: what does this mean in a social context? As a starting point, I will suggest that, *prima facie*, the demands of a social situation center on carrying on social interactions of an appropriate sort, for appropriate lengths of time. "Appropriate", of course, is context-specific, but generally it involves being responsive to the social signals of others, and participating in the activities of the group-- in a facilitative or at least non-disruptive way. In fact, this view is adopted in some form in almost all the recent research (e.g., Ainsworth and Bell, 1974, p. 97ff; Arend, et al., 1979, p. 951; Bakeman and Brown, 1980, p. 441; Baumrind, 1978, p. 248f; Dickie and Gerber, 1980, p. 1248; Lamb et al., 1980, p. 1231; Waters, Wippman, and Sroufe, 1979, p. 827; White and Watts, 1973, pp. 10-13).

In addition to the ability to inititate and maintain social interactions, several authors (Arend et al., 1979; Block and Block, 1980; Connolly and Bruner, 1974; Waters et al., 1979)

include positive affect as a concomitant of competence. This position is consistent with Bowlby's (1969) view of emotions as part of sub-systems which monitor and evaluate behaviour. If positive affect is a sign of well-functioning, then it ought indeed to accompany competent behaviour.

Baumrind (1978), Block and Block (1980), Arend et al. (1979), and Waters et al., (1979) also add abilities (such as setting goals, utilizing feedback, expanding skills, and being ascendant) that seem clearly related to those above, but which do not necessarily entail social interaction for their exercise. But while the distinction between social interactional and non-interactional skills exists as a conceptual dichotomy, in practice we find a range of general skills that can be (and are) applied in both social and non-social circumstances. Consider as an example the process of problem solving. In a tool-using problem-solving task given to two-year-olds, Matas, Arend, and Sroufe (1978) found that their more successful group was more enthusiastic, more persistent, more affectively positive, less easily frustrated, and less oppositional. Some of these characteristics are clearly interactional ones, even though problem-solving is not usually conceived of as a social process.

The tendency to be ascendent, i.e., not to be submissive in agonistic encounters, follows as a corollary from the qualities above. Whereas socially competent children should initiate very few agonistic encounters (consistent with their sociable, cooperative, bouyant characteristics), they would make

persistent and resourceful opponents, who would generally not be expected to lose such encounters.

In summary, then, social competence can be defined by expanding Connolly and Bruner's (1974) general definition of competence.

1. The ability to extract relevant information from the situation includes the ability to extract the social information needed for socially appropriate behaviour.
2. The relevant skills include the social skills necessary to initiate and maintain social interactions. (Also, following White, 1959, there is a tendency to add to the repertory of relevant skills, both social and non-social. This is part of what Baumrind, 1978, describes as "achievement oriented" behaviour.)
3. The "over-all plan" refers to the ability to set goals.
4. The absence of disruptive (negative) affect, and, by extension, the presence of positive affect when things go well.
5. The initiation of the plan.
6. The ability to utilize feedback-- in other words, to be persistent and resourceful in reaching goals.

II. Parental Influences on Competence

According to Martin (1975), warmth (or acceptance vs. rejection) and control or power-assertion have been recognized since the 1930's as the two main dimensions underlying parents' behavior vis-a-vis their children. In the following two sections I will briefly review the research on the relationships between these two aspects of parenting and competence in children. The third section will deal with the possible impact of emotional factors on competence. Following this, it will be possible to outline some expected relationships between family interactions and competence outside the home.

The Effects of Parental Warmth

"Warmth" is usually taken to mean friendly feelings for the child, acceptance of the child and of the parenting role, and a responsiveness to the child's needs and social initiations (e.g., Cole et al., 1982; Martin, 1975). Responsiveness has been frequently linked to secure attachments in infancy (Ainsworth et al. 1978; Waters and Deane, 1982). Secure attachment, in turn, has been implicated in later competence in social, exploratory, and problem-solving situations (Arend et al., 1979; Hazen and Durett, 1982; Matas et al., 1978; Waters et al., 1979). Martin (1981) reported direct links between maternal responsiveness at 10 months and child competence at three and a half years, especially for boys. These findings that parental warmth is associated with child competence and independence are consistent

with Martin's (1975) conclusion that parental warmth is not accompanied by parent-directed dependency in children, even though warmth might be construed as reinforcing such behaviour. He reports in his review of the literature that parental rejection, not warmth, is linked to child dependency on other adults, while parental hostility is linked to child aggression. These findings, he says, are stronger for older children than for preschoolers.

Baumrind's research provides almost the only exception in the parenting literature on the importance of warmth. In her 1971 study, she found no main effects for warmth, and interpreted its role as that of moderating the effects of parental power-assertion strategies.

Parental Power-Assertion

Baumrind (1967, 1971) reported the highest levels of child competence in families whose parents were both controlling and warm, while parents who were either controlling and cool (Authoritarian) or non-controlling (Permissive) had children who were more resistive to adult direction and more hostile to peers. However, as Martin (1975) points out, because Baumrind analysed her data in terms of patterns of parental behaviour, it is difficult to interpret the impact of single factors. While degree of control clearly emerges as a significant dimension in her work, it may be that she underestimates the importance of warmth per se. Even as a moderator variable, its impact is

substantial. Among a group of parents who were both authoritarian and warm, for instance, child outcomes were markedly higher than in the main Authoritarian group (Baumrind, 1972a). These results are paralleled by Kagitcibasi (1970), who failed to find in a sample of warm, authoritarian Turkish families the behavioural deficits of hostility and resistiveness normally associated with authoritarian parenting in North America (Martin, 1975; Rutter, 1981).

In summary, then, both control and warmth have been found to be powerful dimensions of parenting. In the next section, I will consider the possible impact on child competence of parents' responsiveness to child upset. Although parents' responsiveness has long been considered to be an important aspect of warmth, and responsiveness to upset might be considered as an extension of parents' responsiveness to children's social cues, I will discuss it at length in a separate section since it has not been frequently considered in the context of child competence.

Emotional Factors

According to Connolly and Bruner (1974), the presence of negative affect (including feelings of powerlessness) has detrimental effects on competence. Jackins has articulated a general model of the impact of negative affect on adult human behaviour (Jackins, 1964; Somers, 1972). According to him, negative affect, if unexpressed, is stored in memory and

re-evoked at later times. This often results in less than optimal responses, producing yet more negative affect. Thus a feedback system can be set up that intensifies its own effects--effects which are detrimental for the individual. The resulting accumulation of negative affect, Jackins says, causes a patterning of behavior. Although the accumulation may be the result of adverse environmental factors (especially in the early stages) as well as ineffective or inappropriate responses by the individual, it is a sign of such feedback systems that the affect-laden responses persist when not forced by environmental factors. That is, they seem to be internalized by the child, perhaps in the same way in which other actions are internalized and become structures of thought (Piaget, 1970). In this way, the patterning gains a degree of autonomy, and is no longer situation-bound. An example is the approach and avoidance behaviours noted in young abused children by George and Main (1979), which are first learned in the context of their interactions with their parents, but which then persist in other contexts as well. Whereas the competent child is flexible, the behavioral patterning shown by these children results in suboptimal and even damaging interactions.

While behavioral rigidity and inappropriate affect are the hallmarks of such patterns of behavior, some degree of variability is observed in how the pattern is manifested, perhaps for the following reasons. Jackins (1977) holds that in emotionally stressful episodes, all roles presented in the

interaction are learned and so are potentially available to be re-enacted. [1] Thus a child who is physically punished by a parent may learn not only the role of helpless victim (obviously this is influenced by the cognitive structure provided by the parent for the punishing occasion), but also the role of the powerful perpetrator of violence and that of the on-looker who does not interfere. Further variation is introduced by the circumstances of the particular situation, especially by the people present in it. For example, children who act out violently in their preschool are affected by the structure provided by the adults in charge, the ability of their peers to resist aggression, and their peers' willingness to escalate coercive episodes. Additional variation seems to be introduced by an idiosyncratic factor-- the awareness that a person has of the pattern of behavior, and the decision to act within it (perhaps even valuing or relishing the roles available in the pattern) or to attempt to act outside of it.

An obvious implication of this is that parenting practices which result in a good deal of upset and negative affect should be associated with increased behavioral rigidity and decreased competence. Moreover, the area of competence affected should bear some relation to the area in which the emotional distress was experienced, as in the example of the punished child above.

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[1] Although Jackins derives this idea from a different theoretical framework, it is obviously congruent with observational learning and modelling constructs in social learning theory (e.g., Bandura and Walters, 1954).

Thus, if upset is caused by parental coercion, children in the preschool should be more resistive to adults (a more or less direct re-enactment) or more hostile to peers (attempting to move into the role of powerful perpetrator) or less likely to intervene prosocially when another is in distress (the inactive, but not indifferent, on-looker).

From this theoretical point of view, learned helplessness is simply a particular type of patterning, since stressful episodes are often accompanied not only by negative affect, but also by a degree of helplessness. This is especially true for young children, who have limited means of affecting their environment, or for cases in which the stress continues for long periods of time. Thus the phenomenon of learned helplessness is enmeshed with negative affect, as recognized by Connolly and Brunner (1974) and by Bandura (1979). Placing learned helplessness in this context is simply suggesting a causal mechanism for it (namely, that it results from a structural carry-over in a rigid behavioural pattern caused by negative affect) and emphasizing its rigid nature (i.e., its tendency to persist and to manifest itself in inappropriate contexts). Thus the impact of negative affect on competence is likely to be two-fold: its presence is disrupting, and it often evokes a pattern of helplessness or ineffectiveness. This analysis implies that outcomes will be worse when negative affect and actual helplessness are combined; that the effects of upset will be less when effectiveness is modelled, or, better, encouraged;

and that encouragement of mastery will be most effective in an environment with little or no negative affect. Thus the worst outcomes should be seen in families characterized by high parental control and high child upset; middle levels of competence should be seen in families characterized by modelling of effective responses and middle levels of upset; and the best outcomes in families characterized by encouragement of independence and low levels of upset (cf. Baumrind's Harmonious parent group).

The final point to be made about the phenomenon of patterning also comes from the clincial work of Jackins (1964). According to this writer, these rigid patterns of behavior are broken up when the negative affect underlying them is expressed or discharged. Jackins conceives of this process as being (in part) overt and physiological: that is, as consisting of crying, raging, trembling, etc. This discharge is said to restore the ability of the individual to think clearly and act flexibly.

III. Expected Relationships

Based on the foregoing, and especially on the work of Bowlby (1969) and Baumrind (1971), I have formulated graphically the relationships between parental warmth (including responsiveness to child upset), parental power-assertion, and child competence. See Figure A.1, which is designed to be read as a topographical map (i.e., the third dimension, competence, is represented by contour lines, just as the third dimension,

elevation or height, is represented by contour lines on a topographical map). [1]

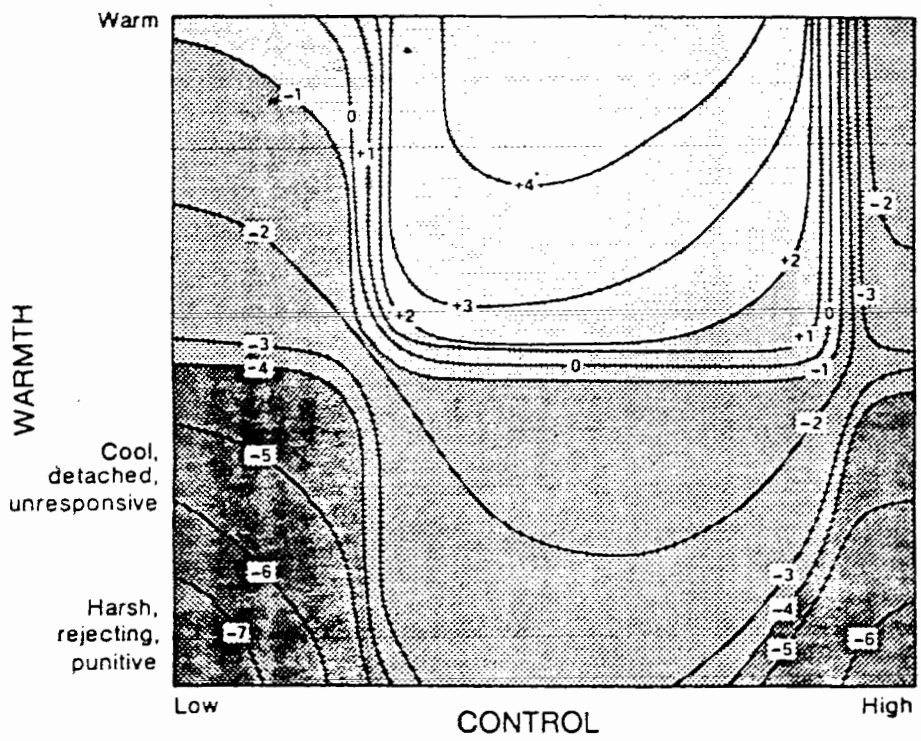

FIGURE A.1

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[1]The numbers along the contour lines represent arbitrary units of competence. The negative values represent levels of deficit or incompetence, while the positive values represent increasing levels of competence. The shading is intended to reflect the three-dimensional nature of the solid; dark areas are low, while lighter areas are higher.

Figure A.1 incorporates zones of sharp transition followed by wide "plateaus", as delineated more clearly in Figure A.2.

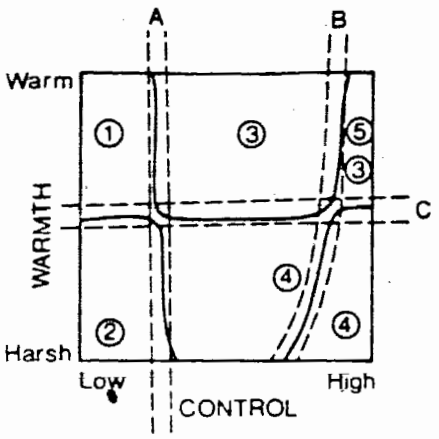

FIGURE A.2

The existence of such zones of transition is suggested by Bowlby's (1969) construct of environmental stability. Moving vertically along the warmth axis in Figure A.2, for instance, zone C represents an area above which warmth is considered to be sufficient for the development of competence. Below it, warmth is insufficient. Likewise, moving along the Control-axis, zone A represents an analogous boundary. The existence of zone B is suggested by Baumrind's work, and marks an area where increasingly high control begins to have detrimental effects on competence. Area 1 corresponds to Baumrind's parent category Permissive; area 2, to abusive parents; area 3 to Baumrind's

Authoritative parent category; area 4, to Authoritarian parenting (as encountered in a white, North American context); and area 5, to Authoritarian parenting occurring as a social norm and accompanied by parental warmth.

Figure A.1, as mentioned above, represents a three-dimensional solid. "Slices" of this solid, taken at various points, represent the predicted two-dimensional relationships between warmth and competence and power and competence. For instance, holding warmth constant (i.e., taking a horizontal slice through Figure A.1) produces an inverted-U relationship for control and competence. Holding control constant (between threshold zones A and B) produces a "rise-to-plateau" relationship between warmth and competence. (This relationships has not yet been directly observed in the parenting literature.) Holding control constant at very low or very high levels produces a more nearly linear relationship. Of course, Figure A.1 can be sliced not only perpendicularly to the axes of warmth and control; cuts may be made at any angle, so that predictions can be generated for any degree of change in one variable accompanied by any degree of change in the other.

More discursively, the concept of patterning implies that parents who are restrictive, punitive, and cool, should have children who are controlling and hostile with peers and resistive with adults. Since the rigidity of a pattern is a function of the amount of negative affect experienced and stored by the individual (as well as the other sources of variance

mentioned above), these relationships should be stronger the more distressing the child experiences the parental behavior to be. Also, of course, the more distress the child experiences with the parents, the less positive affect and the more negative affect s/he would be expected to show in a daycare milieu.

Learned helplessness would seem to occur in contexts of low parental responsiveness, low encouragement of independence, very high parental control, and the use of negative sanctions without explanations or use of reason. Parental coolness, which is closely connected with low parental responsiveness (Martin, 1975), would also seem to be a context for learning social ineffectiveness. These parental behaviors, then, should be associated with children who are less socially active (both in initiating and responding to their peers), less cooperative, less friendly, less effective socially, and less able to set and achieve goals.

Medium to high levels of parental responsiveness, directiveness, and firm enforcement, on the other hand, have been empirically linked with child sociability and cooperative, friendly, effective social interactions with peers. Baumrind speculates that this is because these parental behaviors provide an environment of contingencies in which the child learns to be an effective social agent.

Encouraging emotional discharge should be associated with an amelioration of all these negative connections, and should strengthen the positive ones. Parents who are responsive to

their children's affective states should have children who are themselves more socially responsive (especially to emotional upset in others) and who show more positive affect generally. That parents who are empathic to their children have children who are in fact responsive to others in distress has been noted by Zahn-Waxler, Radke-Yarrow, and King (1979).

IV. The Present Study

The present study, then, is designed primarily to look at the relationships between parents' responses to child upset and child competence outside the home. While each of these factors has received considerable attention (both empirical and speculative) in their own right, they have not to my knowledge been considered jointly in the context of family interactions.

Parental control and warmth are particularly important in the present study not only because they are powerful influences on children's competence, but also because of clinical evidence that suggests that these dimensions of parenting may also critically affect parents' ability to encourage the discharge of negative affect by their children. According to Jackins (1977), a person seeking to encourage the discharge of negative affect in another must not only be responsive and warm: even more importantly, she or he must seek to empower the other, to work towards their autonomy, independence, and ability. This firm commitment to the other's well-being provides the personal safety necessary to express feelings which are oftentimes

considered to be either humiliating or unacceptable. Moreover, at very young ages it may be more important to empower or inform children than to encourage them to be emotionally expressive. I have tried to design this study as a starting point for an investigation of the relationships among power, warmth, emotional discharge and the competence of young children, rather than as a conclusive testing of hypotheses and techniques derived from clinical work on adults. It was this exploratory point of view that led me to include background measures of stress, social networks, and demographic status in this study. However, these measures will not be reported on here.

In addition, fathers as well as mothers were examined on all these factors. Fathers have until recently received short shrift from developmental psychologists, but it is clear in the light of recent research (e.g., Lamb, 1981) that fathers contribute to the family system in distinctive ways.

In summary, then, the primary contributions of the present research are (1) the examination of parents' responses to child upset in the context of parental control and warmth and child competence outside the family, and (2) the formulation of a three-dimensional model of the relationships among power, warmth, and competence (Figure A.1 and commentary). This research also makes several secondary contributions. The first is a partial or preliminary testing of the proposed model, by seeing if the curves which best fit the data are those which the model generates. The second is a partial replication of the work

of Baumrind (1967, 1971). Finally, the present project provides an extension of Baumrind's work, both conceptually (by focusing more strongly on emotional factors in the family) and methodologically (by incorporating observational measures as well as self-report and observer ratings). Also, by incorporating measures designed by and derived from the work of the Blocks (Block, 1965; Block and Block, 1980; Waters et al., 1979), it is hoped that the present work will provide further information on the constructs of ego resiliency and ego control.

B. Methods

I. Subjects

Thirty-five two-parent families with a preschool-aged child were solicited for the study by letters distributed through daycare centers and preschools in the metropolitan Vancouver area. Among the 30 families who completed the study, the average age of the children was 4.3 years, with a range from 3.0 to 5.8. Nineteen were girls and 11 were boys. Nine were only children; 14 had a younger sibling; 4, an older sibling; and 3 had either two or three siblings. The average age of the fathers was 34; that of the mothers, 32 (range: 24 to 45). Mothers had completed, on average, 14 years of school, while fathers had completed 16 (range: 9 to 21). Mean family income was just under $35,000 (range: $14,000 to $62,000). [1] The Duncan Socio-Economic Index was calculated for the parent with the highest income (this was usually the father), and ranged from 33 to 92, with a mean of 67. [2]

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[1]The average income for a family with two children under 16 is estimated by the Canadian Census at $29,600 (1981 data).

[2]Duncan SEI scores in the low 30s correspond to industrial occupations such as craftsperson and machinist. Scores in the mid-60s correspond to such professional and technical occupations as recreational and social workers, while scores in the low 90s indicate professional occupations such as physician.

Five families in the original sample failed to complete the project. Three were daunted by the work involved; one found the questionnaires offensive, and the fifth was excluded from the analyses because their child was not under 6 years old. Both parents and the child's daycare or preschool teacher received an honorarium of five dollars for participating in the study.

II. Instruments

Family interactions were assessed by three methods. Each parent completed the Child Rearing Practices Q-Sort (Block, 1965). In this Q-Sort, 91 items describing parenting practices are evenly distributed across 7 categories (13 items per category) in a forced distribution. A home observation session was done, lasting from suppertime until the child's bedtime. For this session, an 85-category system for coding behavior was developed (see Appendix 1). Data were recorded on the MORE, a small, portable, computerized encoder. Both the initiator and the target individual, as well as the behaviour itself, were coded and recorded. A focal-individual sampling strategy was used, with 10-minute sampling sessions that alternated between the child and each parent (cf. Altman, 1974). Finally, following the observation session, the observer completed 46 of Diana Baumrind's Parent Rating Scales (Baumrind, 1970; see Appendix 2).

Demographic information was collected using the format recommended by Mueller and Parcel (1980); however, data from

this instrument will not be considered in the present study.

Competence in the preschool or daycare was assessed by having the child's teacher complete Baumrind's Preschool Behaviour Q-Sort (1968). The 72 items in this Q-sort are evenly distributed across nine categories. The Peabody Picture Vocabulary Test (PPVT) was administered to the children in their home. PPVT was included as a competence measure not only because it measures verbal skill, but also because it reflects the child's ability to respond to a task-oriented activity with a friendly but unfamiliar and demanding adult.

III. Procedures

Data Collection

Each family was seen four times. During the first visit, the project was described, consent obtained, and the Q-Sorts left for the parents to complete. The second visit occurred when the Q-Sorts were completed. These were picked up, demographic information was collected, and vocabulary measures were taken. (In addition to the Peabody Picture Vocabulary Test, both parents were given the vocabulary sub-test from the WAIS-R. However, this latter measure will not be reported on here.) The home observation session and the completion of the rating scales were done during the third visit. During the fourth visit, a projective measure I devised, the Unfinished Stories, was

administered to the child. The results of this measure will not be reported here.

Following the third visit, the child's preschool or daycare teacher completed the Preschool Behavior Q-Sort. For five cases it was possible to have the Q-Sort completed individually by two teachers who knew the target child well. These dual ratings were used to calculate a reliability correlation for the Q-Sort (see below) and were then averaged for the main analyses.

A criterion sorting was developed for the Preschool Behaviour Q-Sort by having the sort completed by myself and three members of my supervisory Committee, with instructions that the sort was to reflect a "perfect" preschooler, competent and well-functioning. These four sorts were then combined into a criterion sorting by assigning each item to the category most frequently given it in the individual sortings. The constraints of distribution imposed by Q-Sorting were observed in developing the criterion sort. This criterion was later correlated with each child's actual Q-Sort to provide an index of overall well functioning.

Reliabilities

As mentioned above, reliability of the Preschool Behavior Q-Sort was calculated by correlating five pairs of sorts obtained for five children. The average correlation coefficient of .69 for the daycare teachers is almost identical with the correlation of .68 obtained by Baumrind (1971) for her trained

research assistants.

Reliabilities for the observation categories were calculated from data collected during three special reliability observation sessions. Two observers, each equipped with a MORE for recording observations, coded family interactions from supper-time until the child's bedtime. (The presence of two observers was found to be too intrusive when reliabilities were attempted during the main course of data collection.) Since the coding categories are nominal, Percent Agreement and Kappa were calculated for the reliability coefficients. (See Table C.2, Inter-rater Reliabilities.)

Reliability data for the Parent Rating Scales were also collected at the end of the reliability sesssions. Since the rating scales, like the Q-Sorts, provide ordinal data, reliability was calculated by correlation. The value obtained compares favorably with the average correlation of .78 reported by Baumrind (1971). [1] These values are also presented in Table C.2.

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[1]Baumrind's correlation is taken over all 125 rating scales, while the value reported in Table C.2 is calculated for the 46 scales used in this study.

C. Results

I. Scale Construction

The individual items from the Preschool Behavior Q-Sort, the Parent Rating scales, and the Child Rearing Practices Q-Sort were combined into scales (see Appendices 2, 3, and 4).

Preschool Behavior Q-Sort

Nine scales were derived from the Preschool Behavior Q-Sort. Four came from the factors reported by Baumrind (1971): Friendly (vs. hostile to peers), Cooperative (vs. resistive with adults), Purposive (vs. aimless), and Achievement Oriented. Two, Peer Competence and Ego Strength, were developed by Waters, Wippman, and Sroufe (1979). Both of these scales are conceptually derived from Block and Block, 1980. In addition, I developed three scales of my own, which I called Sociable, Socially Effective, and Happy. These scales were assembled on rational grounds, then, like the others, tested empirically for internal coherence. (See Table C.1.)

While the scales above are empirically independent when grouped by source (i.e., Baumrind's four scales share no items in common, Waters' scales share none, and mine share none) there is some overlap across groups. Ego Strength shares four items

each with Purposive and Achievement Oriented, and Peer Competence shares three items each with Purposive and Socially Effective, and four with Sociable.

Parent Rating Scales

Four scales were derived from the Parent Rating Scales using the factors identified by Baumrind (1971). These were Firm, Directive, Warm, and Responsive.[1] In addition, I assembled two other scales, Encourages Independence and Encourages Expression of Negative Affect. This last scale incorporated a rating item of my own devising (item 81: see Appendix 2). All six rating scales, like the Q-Sort scales, were tested for internal reliability. Encourages Expression of Negative Affect was eventually reduced to only two items. Final alphas are reported in Table C.1.

Child Rearing Practices Q-Sort

The factors reported by Jeanne Block (undated) for the Child Rearing Practices Q-Sort had no internal coherence for this sample, perhaps because they were derived from data on somewhat older children. Scales were created de novo by assembling on rational grounds item pools reflecting discipline

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[1]The items for the scale Responsive came from a cluster labeled "Encourages Independence and Individuality" by Baumrind.

and power assertion, warmth, encouragement of mastery, and encouragement of emotional expressiveness. Items were then deleted from these pools until an acceptable level of internal coherence was reached. [2] Since the patterns of intercorrelations differed for mothers and fathers, this process was carried on separately for each. Consequently the scales, while conceptually similar for each parent, and given similar names, are not identical (see Appendix 3).

All scale scores, both Q-Sort and rating derived, were transformed by summing the individual item scores (which could load either positively or negatively), adjusting the lower end of the range to zero, and then dividing by the total possible score to obtain a percentage.

Observational Data

Observational variables assessing various aspects of parental warmth and power (see Appendix 1) were constructed by summing the behaviours in certain categories across the entire observation session. These sums represent the total frequency for a given behaviour or group of behaviours, expressed as a percentage of the total events recorded (see Appendix 1, part 2, and Appendix 10). These variables, unlike the Q-Sort and rating scales discussed above, are measured on a ratio scale: that is,

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[2] Items with an item-total correlation of less than .40 were dropped from the scales.

a value twice as big reflects an actual doubling of quantity. Their reliability depends not on internal coherence, but on agreement between coders. [3] See Table C.2.

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[3] Although the values for some variables appear small when expressed as a percentage of total events (see Appendix 10) the raw frequencies were large enough to establish reliabilities. To take the worst case as an example, the average for Parents Coerce (.14) translates into an average of 1.2 events per family. Fortunately, the events subsumed in this variable (e.g., 'hits', 'pushes', 'threatens') are striking and tend to elicite high inter-observer agreement. Variables with a mean of .5% occur on average more than 4 times per family, while variables with a mean of only 1% occur on average more than 8 times per session.

TABLE C.1
Internal Reliabilities
(Cronbach's Alpha)

Preschool Behavior Q-Sort

Friendly	.859
Cooperative	.918
Purposive	.816
Achievement Oriented	.828
Ego Strength	.701
Peer Competence	.792
Sociable	.698
Socially Effective	.747
Happy	.557

Parent Rating Scales

Warm	.817
Responsive	.768
Firm	.845
Directs	.578
Encourages Independence	.565
Encourages Expression of Negative Affect	.633

Child Rearing Practices Q-Sort

Mother Punitive	.749
Father Punitive	.780
Mother Warm	.753
Father Warm	.745
Mother Encourages Emotional Expression	.641
Father Encourages Emotional Expression	.638
Mother Encourages Independence	.706
Father Encourages Independence	.689
Mother Involved as Parent	.574
Father Involved as Parent	.689

TABLE C.2
Inter-rater Reliabilities

Preschool Behavior Q-Sort	
Correlation	.691
Parent Rating Scales	
Correlation	.876
Observation Categories	
Percent Agreement:	.792
Kappa	.723

II. Relationships within Classes of Variables

Competence

In addition to the nine scales derived from the Preschool Behaviour Q-Sort, the competence measures include the correlation to the Criterion Sort and the children's Peabody Picture Vocabulary Test scores. On the basis of a cluster analysis[1], these 11 measures can be placed into three groups. The first group, called "general competence", includes the correlation to the Criterion Sorting, Baumrind's factor Purposive, and Water's Ego Strength scale. "General competence" seemed an appropriate name since the correlation to Criterion is an over-all measure, and the ability to plan and reach goals resourcefully, which is assessed by Purposive and Ego Strength,

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[1]BMDP1M, Cluster Analysis by Variable, using absolute angle as a distance measure with linkage determined by average distance between clusters.

is central to the concept of competence. In support of the suggestion that positive affect is part of the concept of competence (e.g., Connolly and Bruner, 1974), the scale Happy is modestly related to variables in the general competence cluster. Peabody Vocabulary scores are modestly correlated with two of these scales, providing support for the partial conceptual overlap between competence and intelligence.[2]

The second group is a "social competence" cluster formed by three scales: Peer Competence, Sociable, and Socially Effective. The scale Happy is also modestly correlated with the variables in this cluster[3], lending some support to Bowlby's notion that positive affect is a broad indicator of well functioning.

A third cluster, "positive engagement", is formed by the scales Achievement Oriented, Friendly to Peers and Cooperative with Adults. Although these last two scales seem as if they might be aspects of social competence, they bear zero-order correlations to the scales in the social competence cluster. This suggests that friendliness-hostility is a separate dimension from social skill per se. One can know how to get

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[2]The correlations between Happy and the Correlation to Criterion, Purposive, and Ego Strength are .546, .417, and .337, respectively. The corresponding correlations for Peabody Vocabulary Scores are .373, .270 (ns), and .310. Peabody scores are also correlated with Achievement Orientation (.362) and Peer Competence (.344). Correlations of .306 (R-square=.094) are significant at p=.10; .361 (R-square=.130) at p=.05; .463 (R-square=.214) at p=.01. See Appendix 9 for complete information on the correlations among the competence measures.

[3] With Peer Competence, r=.480, with Sociable, r=.378, and with Socially Effective, r=,478.

along but not do so. The scales in this cluster, then, seem to refer to postive engagement with the social and non-social environment.

Parenting: Power Assertion

The 15 variables assessing aspects of parents' power assertion (taken from the Child Rearing Practices Q-Sort, Baumrind's Parent Rating Scales, and the observation data) fall into four clusters.* The first, "parents controlling", includes the three observation variables Father Directs, Father Firm, and Parents Coerce. These variables are all positively correlated with one another (see Appendix 7).

The second cluster, "parents directive", includes the observation variable Mother Directs, the self-report variable Mother Punitive, and the rating variables Firm and Directs. The self-report variable Father Punitive also belongs in this cluster, but joins last, having zero-order correlations with Firm and Directs. All the other variables are positively correlated with each other.

The third cluster, "child compliance", is composed of the observation variables Mother Firm, Rate of Compliance to Father, and Rate of Compliance to Mother. Mother Firm is positively correlated with Rate of Compliance to Mother, but negatively

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*Program BMDP1M was used. The measure of similarity was the absolute angle corresponding to the arccosine of the absolute value of the correlation, with linkage determined by the minimum distance between variables.

correlated with Rate of Compliance to Father. Rate of Compliance to Father and Rate of Compliance to Mother are not significantly correlated with one another.

The fourth cluster, "parents encourage independence", is composed of the two self report variables Mother Encourages Independence and Father Encourages Independence, and the rating variable Encourages Independence. Rated Encourages Independence is, paradoxically, negatively correlated with Mother Encourages Independence. It is as though mothers and psychologists have very different ideas of what encouraging independence means. Self reported Father Encourages Independence is not highly correlated with the other two variables. In the cluster analysis, it enters only at the last step, when a super-cluster of 15 items is formed. It is grouped here for conceptual rather than empirical reasons.

Parenting: Warmth

A cluster analysis of the warmth variables revealed one rather large cluster and two rather small ones. In an effort to obtain groups less disproportionate to each other, a principal components analysis was done. [5] This revealed a structure very similar to the cluster analysis, but less asymmetrical. Three factors emerged which accounted for 50.1% of the variance. The first factor, "parents warm", included the observation variable

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[5]The program used was BMDP4M, a principal components analysis factored on the correlation matrix and using a varimax rotation.

Father Responsive, the self report variables Father Warm and Father Involved as Parent, and the rating variables Warm, Responsive, and Encourages Expression of Negative Affect. Two other self-report variables also loaded on this factor, Mother Warm and Mother Involved as Parent. All of these variables are positively correlated with one another.

The second factor I called "mother alert, distant". While the observation variables Mother Responsive and Father Interacts with Child loaded positively on this factor, Mother Interacts with Child, Total Hugs, and the self report variable Mother Encourages Emotional Expression all loaded negatively. The pattern that emerges, then, is of a mother who is alert but somewhat cool, while father is actively involved with the child, although perhaps not particularly supportive.

The third factor, called "happiness", has positive loadings on the observation variable Total Family Positive Affect and the self-report variable Father Encourages Emotional Expression, and a negative loading on the observation variable Total Family Upset.

Convergence

As the foregoing cluster and factor analyses imply, there is a reasonable, if modest, convergence of variables across methods (Q-sort, test, observation, and ratings). For instance, as noted earlier, Peabody Vocabulary scores show moderate correations with several of the the Preschool Behavior Q-Sort

scales (see Appendix 9). Within the family interaction variables, there is a fair amount of convergence, especially between the rating variables and the self reported Child Rearing Practices Q-Sort scales. Although the intercorrelations within conceptual groupings are less frequent than might be wished, there are still many across-group correlations that cross methodology (see Appendix 8). These results seem reasonable, considering the different types of information tapped by each method and the differing sources of variance present in each. For instance, the Q-Sort variables represent a summing up of a considerable amount of experience, gathered over a period of many months (for the teachers) or many years (for the parents). One would expect a correspondence between this type of data and the observation and rating data, but not necessarily a strong connection, since these last two methods sample a much more time-restricted domain. Again, the observer ratings draw on the evaluative abilities of raters, and reflect their implicit [redacted]s and even their biases, conscious and unconscious. The behavioural observations are relatively free of these sources of variance (except insofar as they are reflected in the actual categories or happen to affect data collection), but are subject to limitations imposed by restricted sampling. In the present study, relationships between the observation data and that collected by other methods may be obscured because the observational variables are only aggregates, and do not reflect sequencing information, which may well be more sensitive.

Information about sequences of behaviour is certainly being evaluated in the Q-Sorts and in the observer ratings. Each method, therefore, taps unique and important information while exhibiting a reasonable, but not high, degree of overlap. The most important evidence for convergence across method, however, will only become evident in the next section, in the similarity of the relationships shown with competence.

III. Relationships Between Parenting and Competence

Since certain types of non-linear relationships were expected, polynomial regressions were done between the competence measures and each parenting variable. Linear relationships, although not expected, were also found. As a result, canonical correlations were done to test for over-all patterns of linear relationship between parental power and warmth and child competence. Among the power variables, only self-reported Mother Punitive showed a significant (negative) relationship with General Competence (R-square=.346), while only Rate of Compliance to Father showed a significant association with Social Competence (R-square=.298). Canonical analyses for the warmth variables were nonsignificant at p=.05. See Appendix 6 for details of these analyses. Summaries of both the linear and non-linear relationships between parenting and competence can be found in Appendix 5.

There are two basic strategies that can be used in the search for stable relationships. One is to aggregate variables, hoping to find stability in the cluster rather than the components. The other is to fragment clusters, looking for a replication of pattern in conceptually related components. I have chosen to use the second approach here for several reasons. Given my sample size (30) and the number of parenting variables (31), any empirically-derived clusters or factors of the parenting variables are extremely unstable, and suitable for discursive purposes only. To base any analyses on factor scores or cluster-derived scales would be to work with idiosyncratic results, whose lack of replicability would be certain. The cluster solution for the competence variables may be more stable, given the nearly three-to-one sample size to variable ratio. In any case, the problem of stability is minimized by the choice of the second strategy (looking for replication of pattern across the cluster variables), whereas stability would be a critical problem if the competence variables were combined on the basis of their empirical associations. Besides the issue of stability, there is the possibility of losing information by reducing variables to cluster or factor scores. Variables with no relationship to the outcome measures may mask variables that do have such relationships. An example in the present study can be found in the power cluster Parents Directive (see Appendix 5, page 88), where only one variable in the cluster shows consistent relationships with social competence. This

relationship would disappear in a combined cluster score. Similarly, information may be distorted as well as obscured by premature data reduction. This would occur, for instance, if linear variables were combined with non-linear variables: the final cluster or factor relationships might bear little resemblence to the underlying relationships they putatively summarize; and there would be no way to gauge the accuracy of this summary, even intuitively. For all these reasons, then, I have chosen to present only those relationships that replicated across the variables within the competence clusters. [1] This strategy seems to me to minimize the difficulties above and to increase the chance that the results are conceptually significant, i.e., replicable. In addition, this choice minimizes Type II error. Finding what does not exist is always a danger when many statistical comparisons are made. By restricting my discussion to parenting variables that show internal replication across competence measures, I am adopting a fairly conservative strategy. In fact, only about half of the statistically reliable relationships that emerged from this data will be discussed below. [2]

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[1] Happy and Peabody Vocabulary Test scores were not used for judging replication, since they fell outside the three main clusters described above.

[2] Appendix 5 contains both the discussed and the omitted relationships between parenting and child competence.

Parental Power

Present findings in this area generally support Baumrind's conclusion that very high levels of control are associated with decreased levels of competence. However, contrary to her findings, low as well as medium levels of control were associated with the highest levels of competence. In addition, it appears that maternal power-assertion is as strongly associated with competence outcomes as paternal power-assertion.[3]

General Competence

Three variables from the power cluster Parents Directive have consistent associations with the scales in the general competence cluster. Two of these, the self-report variable Mother Punitive and the rating variable Firm show substantial non-linear relationships (see Figure C.1. The values given in the figures represent R-square, or the amount of variance accounted for.) Both the inverted-U functions and the "plateau and decline" functions illustrated in Figure C.1 are compatible with the model presented in Figure A.1.

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[3]While Baumrind (1971) assessed maternal and paternal power separately and specified levels of each in the criteria for her parent groups, she came to no conclusions about the relative important of maternal vs. paternal power assertion vis-a-vis child competence.

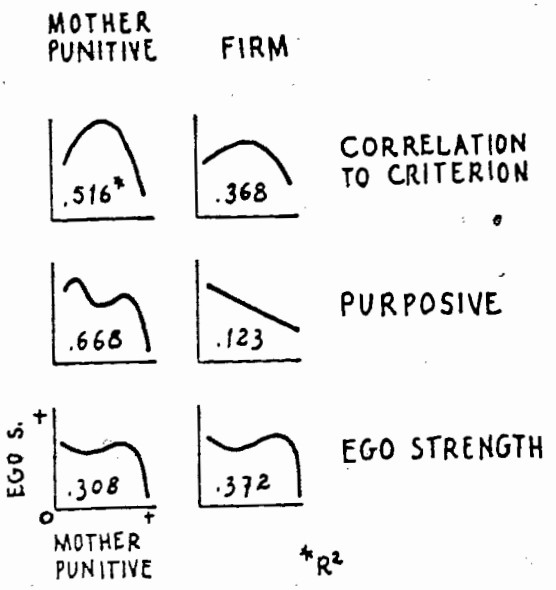

FIGURE C.1

The third variable, Father Punitive, shows modest negative linear relationships with the general competence scales, accounting for 13% to 16% of the variance. For all three of these power variables, very high levels of control are associated with declines in competence.

Vocabulary, too, shows a decline at high levels of control. The rating variable Firm shows an inverted-U relationship with Peabody Test Scores, accounting for nearly 50% of the variance (see Figure C.2).

*R^2

FIGURE C.2

Social Competence

The scales in the social competence cluster show negative linear relationships with Mother Punitive and the observation variable Rate of Compliance to Father. Although these variables fall into separate clusters (Parents Directive and Child Compliance) they are modestly correlated with one another. * Individually, they account for 12% to 26% of the variance in the

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*Rate of Compliance to Father is more consistently associated with maternal than paternal characteristics. Besides the positive correlation just mentioned with Mother Punitive (R-square=.130), Compliance to Father is negatively correlated with the observation variable Mother Firm (R-square=.161). More marginally, it is positively correlated with the observation variable Mother Responsive (R-square=.126) and the self report variable Father Involved as Parent (R-square=.110).

social competence scales.

Positive Engagement

Although the three scales in this cluster show scattered relationships with various power variables, only one, observed Parents Coerce, shows consistent associations. Parents Coerce has modest negative correlations with the Positive Engagement scales (Achievement Oriented, Friendly to Peers, and Cooperative with Adults) accounting for 14% to 20% of the variance.

Summary

On the whole, then, Baumrind's conclusion that very high levels of control are usually associated with declines in competence (as, for instance, in her Authoritarian and Authoritative parent groups) is supported by the data in this study. However, her reported declines of competence at very low levels of control (as in her Permissive parent group) are not generally supported by these data.

In terms of parental roles, the variables assessing maternal power have as strong an association with competence as the paternal power variables. This pattern is somewhat paradoxical in the context of the traditional or stereotypic view of the family, in which father is seen as the important power-broker, while mother's role is one of nurturance. However, this non-sterectypic tendency is repeated in the next section.

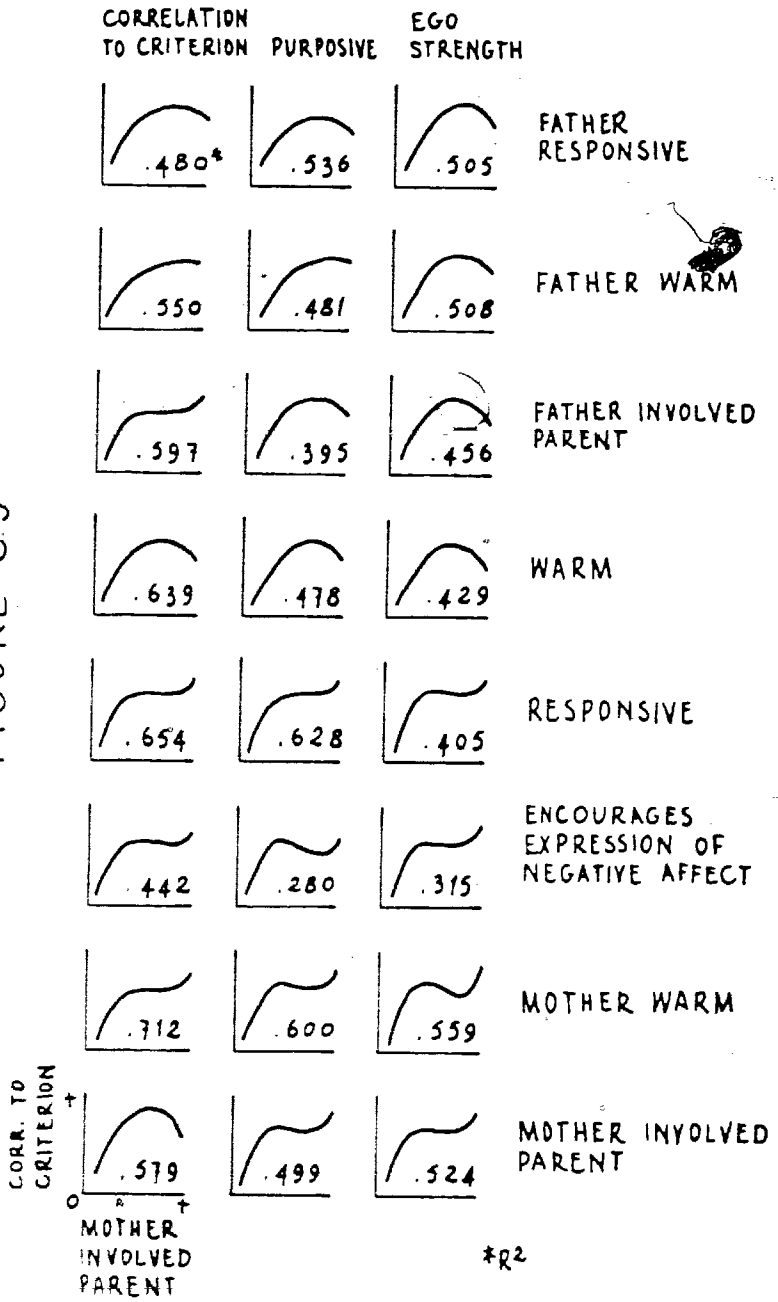
Parental Warmth

Two conclusions can be drawn from the data that follow. The first is that, in this sample at least, warmth seems to be a very potent dimension of parenting, more so than power. The second is that fathers' warmth is as important as mothers'.

General Competence

As predicted, the variables in the factor Parents Warm typically show "rise to plateau" relationships with general competence, often accounting for substantial portions of the variance (see Figure C.3).

FIGURE C.3


CORRELATION TO CRITERION
PURPOSIVE
EGO STRENGTH
.480*
.536
.505
FATHER RESPONSIVE
.550
.481
.508
FATHER WARM
.597
.395
.456
FATHER INVOLVED PARENT
.639
.478
.429
WARM
.654
.628
.405
RESPONSIVE
.442
.280
.315
ENCOURAGES EXPRESSION OF NEGATIVE AFFECT
.712
.600
.559
MOTHER WARM
.579
.499
.524
MOTHER INVOLVED PARENT
CORR. TO CRITERION
+
0
+
MOTHER INVOLVED PARENT
*R2

Some of these warmth variables (self reported Rather Warm, observed Father Responsive, and rated Encourages Expression of Negative Affect) also showed moderate inverted-U relationships with Happy, accounting for 22% to 33% of the variance (see Figure C.4)

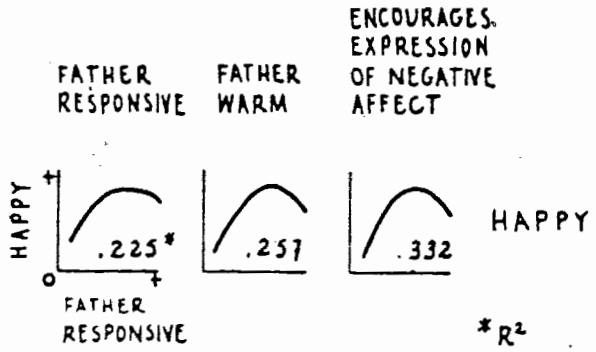
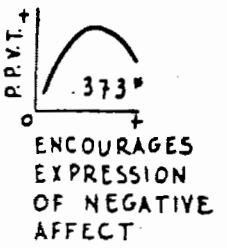


FIGURE C.4

Children's performance on the vocabulary task was also related to warmth. The observation variable Father Responsive shows a positive linear relationship with Peabody Test Scores (R-square=.241) while the rating variable Encourages Expression of Negative Affect shows an inverted-U relationship with vocabulary (see Figure C.5).



*R^2

FIGURE C.5

Social Competence

Some of the variables in the Parents Warm factor also have substantial associations with social competence, although the predicted pattern of rise and plateau is not as predominant here, since many of the relationships are linear in nature (see Figure C.6 et passim).

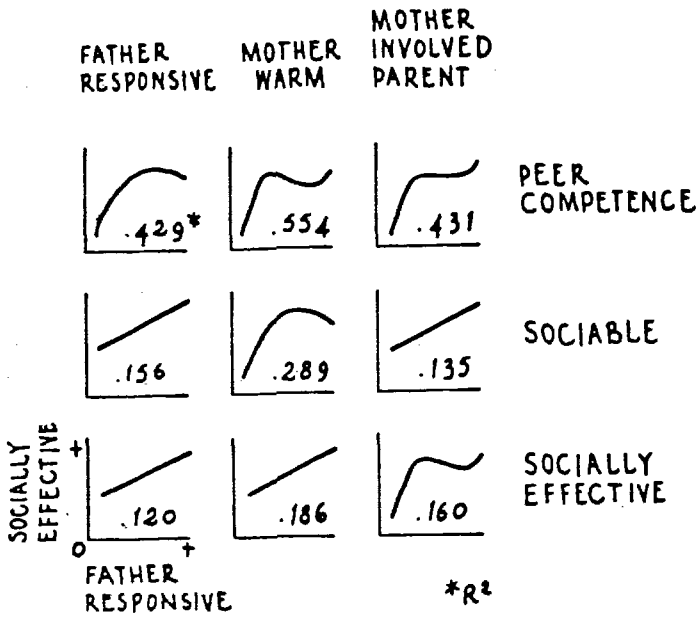


FIGURE C.6

The observation variable Father Responsive and the self report variables Mother Warm and Mother Involved as Parent show a mixture of these patterns, accounting for 12% to 55% of the variance.

Social competence is also affected by two other variables. Observed Total Upset, which does not reflect parenting practices per se, since it is simply a total of all negative affect

recorded in the observation session, has moderate negative linear relationships with the social competence scales, which account for 24% to 41% of the variance. [5] The observation variable Mother Responsive, on the other hand, shows positive linear relationships accounting for 13% to 32% of the variance in the social competence scales.

Positive Engagement

Only one warmth variable, self reported Mother Involved as Parent, was consistently associated with the scales in this cluster. Mother Involved as Parent showed positive linear relationships accounting for 14% to 26% of the variance in the scales Achievement Oriented, Friendly, and Cooperative.

Summary

On the whole, then, the competence scales show strong associations with variables measuring fathers' warmth, as well as strong associations with mothers' warmth. It is clear on the basis of these data that despite fathers' traditional relegation to the role of distant disciplinarian, fathers' warmth is as

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[5] Total Upset shows positive correlations with parenting variables such as Parents Coerce (R-square=.245), but not, as one might expect on a simple reinforcement theory, with parent variables assessing encouragement of emotional expression. Two of these measures showed no relationship with Total Upset, while the third, Father Encourages Emotional Expression (as the factor loadings above imply) showed a modest negative correlation (R-square=.121).

important as mothers'.

Warmth, both mothers' and fathers', also seems more important in this study than in Baumrind's research, where it was interpreted as functioning primarily as a moderator variable. The rise-and-plateau relationships noted above, especially in the general competence measures, may, however, be consistent with a moderator function, insofar as they indicate that warmth is critical at some points (the rise), but relatively unimportant at others (the middle and high, or "plateau" regions), where other variables will then seem more potent.

IV. Sex Differences

Superimposed on these strong effects of both power and warmth, there is a measure-dependent pattern of sex differences. Although the parents of girls and the parents of boys described their parenting practices in essentially identical ways, and the ratings for families of girls were not different from the ratings for families of boys, the observation variables told another story. Although boys were just as compliant as girls, fathers of boys were more than twice as likely to be firm with their sons as fathers of girls were with their daughters ($t(\text{pooled}) = -2.89$, $df = 28$, $p = .007$). [1] Moreover, even though boys

[1] This finding is robust: trimmed $t(\text{pooled}) = -2.44$, $df = 24$, $p = .023$. (In a trimmed t, the maximum and minimum scores are deleted from each group, boys and girls. This test of robustness is recommended in BMDP3D, Comparison of Two Groups.)

were no more likely than girls to initiate a coercive behaviour, there were marginal tendencies for boys to experience more coercion. Total Coercion (which sums coercion from all family members) was twice as high in boys' families as in girls' ($t(pooled) = -1.95$, $df = 28$, $p = .061$). Considering parents only, the parents of boys were, on average, three times as coercive to their sons as the parents of girls were to their daughters ($t(pooled) = -1.76$, $df = 28$, $p = .089$). [2]

Sex differences also crop up in the competence measures, although they form no consistent pattern. Boys tend to be rated as less Achievement Oriented than girls ($t(pooled) = 2.98$, $df = 28$, $p = .006$; trimmed $t(pooled) = 2.91$, $df = 24$, $p = .008$). Significantly, in view of the family differences, boys are also rated as less Happy ($t(pooled) = 3.01$, $df = 28$, $p = .006$; trimmed $t(pooled) = 2.64$, $df = 24$, $p = .014$). Boys may also show a slight impairment in social competence, since girls are rated as more Socially Effective ($t(pooled) = 2.65$, $df = 28$, $p = .013$; trimmed $t(pooled) = 2.89$, $df = 24$, $p = .008$). Finally, there is a marginally reliable tendency for boys to be rated as less competent overall, as measured by the correlation to Criterion ($t(pooled) = 1.84$, $df = 28$, $p = .076$; trimmed $t(pooled) = 2.03$, $df = 24$, $p = .054$).

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[2] However, these findings were <u>not</u> robust. For Total Coercion, trimmed $t(pooled) = -1.67$, $df = 24$, $p = .108$; for Parents Coerce, trimmed $t(pooled) = -1.32$, $df = 24$, $p = .198$.

D. Discussion

Martin (1975) begins his review of parent-child relationships with a discussion of causality. Despite the awareness that causal relationships in families are multidirectional, models of parent-child interactions often assume that the important causal forces flow from parents to children. However, theoretically and empirically, it is undoubtedly true that children affect parents (Martin, 1975). While the point of view presented in the Introduction often tacitly treats parents as prepotent causal agents (not only because they are powerful, but because they also bear the chief responsibility for seeing that the family functions well), it is in intention an interactionist (or systems) point of view. For instance, the association between parental coolness and lowered child competence may exist because competence needs a certain degree of warmth for adequate development. It may also exist because children with low social skills or who are hostile and resistive are more difficult for parents to like. It seems plausible to suppose that both of these things are happening. Indeed, the concept of patterning suggested by Jackins (1964) would lead one to expect it. If parents were initially hostile or rejecting, the negative affect stored by the child would lead her/him to act in affectively laden, sub-optimal ways during future interactions. These sub-optimal responses might well trigger further neglect or hostility from the parent, setting up

the type of accumulating feedback system outlined on page 10. However, a correlational study of the type presented here cannot assess the intricate web of causes that exists as families function over time. Even though the ideas outlined in the Introduction incorporate an interactive or systems analysis view of causality, the lack of longitudinal data make such an analysis impossible.

With this causal caveat in mind, I will first present a brief review of the extent to which the findings do fit the expectations outlined in the Introduction. This will be followed by the conclusions that I think can be drawn from the data, and some possible directions for future research.

On the whole, the expected results outlined in the Introduction were actually found, with a few unforeseen twists. In particular, the types of curves generated by the model presented in Figure A.1 were actually discovered in the data. Detailed expections and results are presented in Table D.1, which groups hypotheses with relevant variables.

TABLE D.1
Expectations and Realities

Parent Characteristics	Expected Child Characteristics	Support (+= yes, -= no, +,-= partial)
1. restrictive, cool, punitive	hostile to peers, resistive with adults	Mother Firm + Parents Coerce +
2. practices that result in upset	general deficits, less happy	Total Upset + (for general and social competence)
3. high control, coercive, low encourages independence	low social and general competence	Mother Punitive + Father Punitive + Firm + (for general comp) Mother Punitive + (for social comp)
4. responsive, firm	high social competence	Mother Warm + Father Responsive + Mother Responsive + Mother Punitive +,-
5. encourage expression of negative affect	socially responsive, happy	Encourage Expression of Negative Affect + (for 2 of 3 social competence scales) Happy +,- Father Encourages Expression of Negative Affect +,-

While Table D.1 indicates that there is a good deal of support for the ideas on which the expected relationships are based, it is also clear that the ideas sketched in the Introduction are neither complete nor completely correct. Confirmed expectations include the following. (1) Parental coercion and maternal firmness are related to hostility in the preschool setting as predicted. (2) The relationships predicted for Total Upset are present in the area of social competence and

in two of the three general competence scales. (3) The findings for high levels of control, as reported earlier, generally support the conclusion that very high control is detrimental to competence, while medium levels are beneficial. (4) Parental responsiveness does have the positive associations with social competence that were expected. (5) The impact of firmness is demonstrated by Mother Punitive, which is negatively correlated with social competence. (6) The evidence for the encouragement of the expression of negative affect is subject to the caveats to be discussed below, but findings support the expectation that suppressive strategies have a detrimental impact on social competence and on happiness. This variable seems a promising one for future investigation, provided that the methodological problems can be resolved satisfactorily (see page 60). The hypothesized relationship between parental responsiveness to emotional upset and children's general prosocial behaviours (and especially to others who are experiencing emotional distress) is certainly worth following up.

On the other hand, there are some questionable relationships in the data. (1) The relationships between parental coercion and child hostility may not be robust since the relationships found for Parents Coerce are not replicated for Total Coercion. Likewise, the relationships for Mother Firm and child hostility are not replicated consistently by other measures of parental firmness. (But resistiveness and hostility in a classroom setting may depend on situational, not family,

variables. See below.) (2) The negative association of family upset and competence did not replicate across the positive engagement scales or for the scale Happy. This is somewhat puzzling, since high levels of negative affect at home should be associated with less buoyant behaviour in the preschool. This suggests that happiness may be strongly influenced by situational variables. The same could be said of the positive engagement scales, which showed few connections to the family interaction variables. It seems plausible that a child's willingness to engage in hostile or resistive behaviour in a preschool setting must be influenced to a large extent by the reactions of his peers and the adults in charge. Cf. Patterson's work with coercive behaviours in a family setting (e.g. Patterson, 1976). (3) While the relationships between power and competence at medium and high levels of control support Baumrind work in this area, the picture at low levels is not entirely clear, due, perhaps, to a lack of low-controlling parents in this sample. (4) The results for encouragement of independence seem confusing and contrary to expectation. The negative correlation between mothers' self-report and the observer ratings may arise because parents for whom independence training is salient are counterproductive in applying it. (That this may occur is suggested by a positive correlation between Mother Encourages Independence and observed Parents Coerce.) In any case, both self-reported and rated parental encouragement of independence were not consistently related to any area of

competence in a preschool setting.[3] (5) The relationship between social competence and parental firmness, while present for Mother Punitive, was not consistently present for other measures of parental control. This suggests that parental responsiveness in social situations, rather than power assertion per se, may be more important for children's social competence.

Despite these questionable relationships, there are several important conclusions to be drawn from the results of this research. The first is that father characteristics are important to children's competence, especially fathers' warmth and responsiveness. Complementing this is the importance of maternal power-assertion.

It is difficult to suggest why fathers' warmth is more strongly associated with the general competence measures than mothers' warmth. However, Cole et al. (1982) report similar findings in a sample of 7 and 10 year olds. There, paternal warmth (as observed in a 30-minute free-play session) had much more substantial relationships to child competence at school (as rated by peers and teachers) than did maternal warmth. The traditional view of the family (at least in North America) is that fathers tend to be somewhat cool and distant while mothers are warm and nurturant. Is it possible that against a background

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[3] Baumrind (1971) reported strong effects for a parental cluster that she named "encouragement of independence". That cluster was renamed "responsive" in this study (see footnote, page 28, and Appendix 2, page 73) since the component items seemed to rate the responsiveness of the parents to the child's social initiations and desires. It showed strong associations with the competence measures (see Appendix 5, page 91, for a summary).

of high maternal warmth, variations in mothers' warmth make little difference, while variations in fathers' warmth loom large against a background of low paternal involvement in the family?

If such a hypothesis is true, it is not apparent by the summary measures of parent-child interaction reported here. There were no significant differences between parents on any of their separate measures, taken over ten to sixteen 10-minute observation sessions. However, the observation variables reflect the participation of each parent when both parents are home. If mothers still retain the chief burden of child care in their families (and this is certainly true for the third of the sample who had their children in preschool rather than daycare), then variations in maternal warmth might pale in relation to the large total time mothers spend in contact with their children, while paternal warmth might seem more potent because relatively more scarce. Future analysis of the social networks data collected as part of this study may provide some evidence of this, if fathers report large and active networks that tend to remove them from family activities.

On the other hand, it may be that our cultural stereotypes are no longer true, or at least not as true as they used to be. The fathers of this generation (or of this sample in particular) may well be more involved as parents than their fathers were. (Even though a wide range of education and income levels was obtained, the sample is still skewed to the well-educated and

the economically comfortable. Such a sample might well be expected to exhibit more non-traditional parenting roles.) In this case, the differing patterns of association between child competence and maternal and paternal variables may reflect the different qualities that mothers and fathers bring to their relationships with their children (cf. Lamb, 1981). These differences in style may account for the differences in the patterns of correlation among the Child Rearing Practices Q-Sort items alluded to earlier (page 27), and should be reflected in differences in the sequencing of behaviour between parent and child. This possibility can be tested by a lag analysis of the observation data. However, similar studies across samples substantially different in educational and financial background would be needed to assess the generality of any conclusions drawn from this data.

The second general conclusion is that warmth appears here as a potent dimension alongside power. In fact, of the 20 connections between parenting and competence presented, 14 were between parental warmth and competence. The importance of warmth is a rather common sense point of view, and one supported by earlier research (see, e.g., Martin, 1975). However, in Baumrind's 1971 study, warmth had no main effects, and was regarded by her as a moderator variable. Some relationships found in the present research are not inconsistent with this interpretation. The rise and plateau relationships found between warmth and competence may be compatible with a moderator

function, insofar as they indicate that warmth is important at the low extremes, but relatively unimportant in the middle and upper (plateau) regions, where other variables will then seem more potent. One could invoke here the concept of a critical threshold, below which lack of warmth results in lowered performance, but above which development is stable, and such variance as exists can be attributed to other forces. This is, indeed, just what one would expect to find if competence were environmentally stable, in Bowlby's sense. [4]

If the results reported here indicate that Baumrind underestimated the impact of warmth, they lend more support to her conclusions concerning power. However, the support, although strong, is not unconditional. She reported that very low and very high levels of control were usually associated with lower levels of competence (as, for instance, in her Permissive and Authoritarian parent groups). That inverted-U pattern is replicated in the present sample only by the rating variable

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[4]According to Bowlby (1969), behavioural systems can be more or less labile or more or less stable with respect to the environment. Labile systems are very responsive to environmental pressures, whereas stable systems develope with little variation across large environmental differences. The degree of lability or stability is determined by selection pressures, i.e., by evolution. The more crucial to adaptation a system is, the more stable it tends to be. Competence, as mentioned in the introduction, has close conceptual ties to adaptation and can be viewed as an environmentally stable behavioural system (one which, like language, has environmentally labile subsystems), since the ability to adapt is a crucial skill from an evolutionary point of view. According to Bowlby, such systems exhibit threshold-like effects. And indeed this threshold phenomenon seems to be present in the relationships between warmth and competence.

Firm, taken from Baumrind's Parent Rating Scales. The self report and home observation variables on the other hand typically show "plateau and decline" and linear relationships, and in these cases low as well as middle levels of control are associated with high levels of competence. It may be that these relationships are due to the relatively high level of control provided by the parents in this sample. Baumrind (1977, 1978) suggests that low levels of parental control are associated with low levels of child competence because of learned helplessness (that is, because the parents fail to provide contingencies in the context of which the child learns to be effective). If this is the case, then one would expect decreases in competence only at very low levels of control. "Plateau and decline" and linear relationships may simply indicate that these levels have not been reached. This may be partly due to some difference across methods. (Baumrind assessed family interactions by observer ratings; in the present study, these ratings were supplimented by self report and observation measures.) The social desirability of at least moderate control may bias upward the scores of low control parents. Observational data seem less influenced by social desirability. However, the simple aggregating of frequencies to form the observation variables may mask crucial information on control during sequences of parent-child agonistic exchanges. Given the difficulty of calibrating instruments (the self report and observation data with the rating data) and the fact that Baumrind reported her

data in standardized, not raw, scores, it is impossible to assess the level of control found in this sample vis-a-vis Baumrind's sample. In any case, Baumrind's contention that very high levels of control are detrimental is supported by the data presented here. The issue of what happens at low levels seems to turn on sample characteristics, methodology and the difficulty of specifying the equivalence of "low" across different instruments.

The third area of importance to be discussed concerns the relationship of negative affect and competence. Congruent with the argument developed in the Introduction, negative affect and parents' reactions to it did show connections to competence. The rating variable Encourages Expression of Negative Affect and the observation variable Total Upset both show repeated relationships of the expected types (rise-to-plateau and negative linear, respectively). These data also give rise to several issues. In the first place, upset occurs infrequently in some families (which is an important variable in itself) and for these families the amount of upset sampled is insufficient to reveal parenting styles. This suggests that research strategies incorporating trained parent observers, a technique refined and advocated by Zahn-Waxler and Radke-Yarrow (1982), would be very appropriate here, since this methodology maximizes information on salient but relatively infrequent behaviours.

The second problem in assessing the effects of parents' responses to child upset was that it proved difficult to find

parents who believed in and practiced either a theory of catharsis or a theory of suppression. Most of the parents in this sample reacted not to upset per se, but to some other salient aspect of the situation. For them, upset was a sign for action, not the focus. For example, when children were hurt and crying, parents very sensibly checked to see if first aid was needed; if children were upset when contesting a directive, parents were often intent on obtaining compliance; if an altercation between siblings or playmates resulted in upset, parents usually attempted to mediate and resolve the dispute equitably. Over half this sample displayed this pragmatic approach to emotions. Of the remainder, nine families were classified as using denying or distracting strategies when confronted with upset, but only one of these seemed intent on actually discouraging or suppressing emotional expression. At the other extreme, only two families seemed actively to encourage the expression of negative affect. So in terms of these very broad intuitive categories, I was not satisfied with the range of strategies that I was able to sample. It may be that intensive recruiting efforts among certain sub-populations (for instance, recent graduates of "human potential" therapies on the one hand, and certain clinical populations on the other) might improve this imbalance, even though the impression is that the pragmatists form a large majority in the general population.

Given these limitations in the present sample, it appears that these three broad categories (pragmatists, encouragers, and

discouragers) are too general. Although intuitively appealing and useful on the level of discourse, they are too coarse-grained to test more specific hypotheses regarding parental treatment of negative affect. Emotional upset may need instruments more sensitive than observer ratings and self reports. In my rating variable Encourages Expression of Negative Affect, I attempted to develop a more sensitive scale by combining two others, thus increasing the number of intermediate points. Although this was reasonably successful (the resulting scale showed reliable relationships of the expected type with 7 of the 11 competence measures), it is still far from the sensitive instrument one would like to have. It may be that a sequential analysis of the observation data will generate a more adequate measure of parents' responses to emotional upset.

The fourth general conclusion is that positive affect, like parental responses to negative affect, also seems to be involved in competence, as several writers have suggested (e.g., Block and Block, 1980; Connolly and Bruner, 1974; Waters et al., 1979), and as Matas et al. (1978) report. The positive relationship found in the present study was of moderate size (19% of the variance on average) and reasonably pervasive, affecting the scales in both the general and social competence clusters. The moderate strength of the correlations may occur because happiness, as an indicator of well-being or well-functioning (cf. Bowlby, 1969), is caused by many things, and not by competence only. In particular, it is plausible to

suppose that happiness in a preschool setting is influenced by situational variables (characteristics of the teachers and the other children, for instance, as well as the programme), which were not assessed in this study. On the whole, then, the present data seem to me to provide fairly good support for the link between positive affect and competence. On the other hand, positive affect as measured in the family showed no connections to competence, suggesting that happiness (like competence) is strongly influenced by situational factors. However, this lack of connection brings me to the final point that I want to discuss: the large patterns of predictability and lack of predictability that are present in this study.

As one can see from perusing Appendix 5, some competence scales (those in the general and social competence clusters) are frequently predicted, while others (those in the positive engagement cluster) show relatively few connections to family interactions. Among the parenting variables, too, some show many connections with competence (e.g., Mother Punitive and Father Responsive) while others show few or none. Among the parenting variables some of the more interesting failures of predictive power are shown by variables assessing parents' encouragement of independence and mastery. In a simple view of learning theory, one might suppose that the way to get competent children would be to encourage them to be competent. Evidently, reality is a good deal more complicated than that. It may be that the parents for whom encouraging independence is salient are in fact so

demanding that their efforts are counterproductive. Certainly the point of view adopted here suggests that encouraging independence would best occur in an atmosphere of support and positive affect, not in a controlling context accompanied by upset.

Somewhat more surprising was the failure of prediction shown by the variables assessing the degree of parental directingness. The rating variable Directs, taken from Baumrind (1971), where it was a major variable, was not particularly potent in the present study. Two of the five scales composing it had to be deleted in order to reach acceptable levels of internal reliability. Even so, it showed no relationship to the competence measures, nor did the two observation measures Mother Directs and Father Directs, which sum the directives actually given by each parent during the observation session.

In summary, then, it seems that warmth is more important than Baumrind thought, and power perhaps less so. Positive affect is associated with competence. Strategies which discourage the expression of negative affect seem to have adverse consequences, but the precise threshold is unclear.

The hypothesis that encouraging the expression of negative affect is the unmixed blessing that clinical experience sometimes suggests has yet to receive a fair trial. In particular, the present study suffers from a lack of suitably zealous practitioners of catharsis and a suitably sensitive method of assessing parents' responses to emotional upset.

Nevertheless, emotional variables in the family clearly seem to be related to children's competence outside the home. If this finding can be replicated, then the stage will be set for an investigation of the long-term continuities in adaptation implicit in the notion of patterning discussed earlier (page 9ff). Suppressive emotional strategies, since they prevent recovery of flexible functioning, should result in chronic behavioural rigidities, or, to use Block and Block's (1980) terminology, lowered ego resiliency. Continuity in ego resiliency from 18 months to kindergarten has already been demonstrated by Sroufe and his colleagues (Arend et al., 1979; Matas et al., 1978; Waters et al., 1979) and by Block and Block (1980) from preschool to middle childhood. However, the role of parents' reaction to emotional upset has yet to be investigated in this context. Jackins' (1964, 1977) contention that emotional discharge can restore behavioural flexibility (or ego resiliency) is especially interesting, since it is part of a causal model that predicts continuity of overt malfunctional behaviour patterns as well as functionally-equivalent non-pathological behavioural systems. It would be interesting to examine these ideas (continuities in the development of resourceful behaviour, and the role of parents' responses to emotional distress in that development) in a longitudinal study from late infancy (12 to 18 months) to middle childhood. In addition, attention to changes in family circumstances and parental stress, already demonstrated to have an impact on

parent-infant attachment (Vaughn et al., 1979), would allow appraisal of the hypothesized buffering aspects of emotionally expressive strategies (pages 13 and 17). The results of such a study might have strong implications both for interventions in the families of troubled children and for programs designed to encourage optimal family functioning.

On the level of theory-construction, work needs to be done on the calibration of instruments, so that the curves fit to the various measures of parenting and child competence can in turn be fit to the model presented in Figure A.1. Only this process can provide the feedback necessary to alter and enrich the model described there.

E. Appendix 1: Observation Categories and Variables

I. Observation Categories

LATCH indicates categories that could be recorded concurrently. Blanks (as at 11) indicate null categories

01 eats, mealtime
02 plays (LATCH)
03 reads
04 on-going solitary adult activity, eg, cooking, driving
05 watches TV
06 on telephone
07 bath; cleans, cares, does something to child
08 sleeps; lies in bed quietly
09 unoccupied; squirms or fidgets
10 bid for attention (non-verbal), bid for contact
11
12 bid for play (behavioural initiation of activity)
13 requests (help, permission, object)
14 enquires
15 directs, forbids, directive implied by statement or question
16
17 offers (help, object)
18 proposes (verbal initiation of activity)
19
20 speaks, comments
21 hugs, holds (LATCH)
22
23 grants request; yes; agrees
24 explains, gives information (non-agonistic exchange)
25 ignores, no response
26 refuses contact
27 refuses request, directive, bid for talk, play; no
28 sets conditions for granting request
29 non-verbal acknowledgement
30 hits, kicks, pinches, struggles physically (LATCH)
31 pushes, pulls
32 takes, grabs, initiates object/position struggle
33 shames, humiliates, criticizes, complains
34 yells (angry overtones or coercive intent)
35 threatens verbally, frightens

36 threat gesture
37 play hits, play struggle
38 restrains physically
39 initiates object/position struggle without contact
40
41 threatens to withdraw affection, friendship
42 threatens to withdraw compliance, priviledge
43 persists with directive, request
44 modifies request, directive
45 enforces directive, punishes (not physically)
46 withdraws request, acquieses
47 invites argument
48 argument forbidden
49
50 complies, cooperates
51 partial compliance
52 reasons, remonstrates (agonistic exchange)
53 leaves
54 returns, approaches
55 seeks help
56
57
58
59
60 praises, gives positive reinforcement
61 encourages to undertake, persist with task, resolve problem
62 assists (adult allows, encourages participation)
63 redirects to different activity
64 cautions
65 discourages verbally
66 does activity for child (child not permitted to help)
(LATCH)
67 offers alternatives or enquires about preferences
68
69
70 begins, persists with solitary activity
71
72 completes activity
73 leaves activity uncompleted
74 quietens
75 minimal response; inattentive
76 attends, looks, waits attentively
77 response unclear
78 response on-going
79 response terminated
80 accepts upset
81 directs attention to upset, enquires about upset
83 denies upset; attempts to quiet child
84 distracts, directs attention away from upset
85 discourages, attempts to suppress upset
86 mimics upset; mimics child
87 intervenes (to resolve difficulty)
88

89 distressed tone of voice (physical hurt)
90 distressed tone of voice (sadness, includes cry-voice, whines) (LATCH)
91 cry face, gesture of sadness
92 cries, sobs (LATCH)
93 distressed tone of voice (anger, annoyance),
94 distressed facial expression or gesture indicating anger (throws object)
95 rages (LATCH)
96 shows fear (startle, flinch, alarm, hand-cover); cautious, hesitates
97 trembles, cringes, shows extreme fear
98 bored, disinterested
99 laughs, smiles, shows positive affect (includes bright, animated tone of voice), (LATCH)

Code length is 4 digits: digit 1 indicates the initiator of the action (father=1, mother=2, child=3), digits 2 and 3 are the behavior categories listed above, and digit 4 indicates the target of the action.

II. Observation Variables

Variables were scored by summing the frequencies in the indicated categories, expressed as a percentage of the total events recorded. The totals for Father and Mother Responsive were reflected.

Father Responsive	1253, father ignores child 1753, father minimal response to child
Mother Responsive	2253, mother ignores child 2753, mother minimal response to child
Father Interacts with Child	1023, father plays with child 1033, father reads to child 1203, father speaks to child
Mother Interacts with Child	2023, mother plays with child 2033, mother reads to child 2203, mother speaks to child

Father Directs	1153, father directs child
Mother Directs	2153, mother directs child
Father Firm	1433, father persists with directive 1453, father enforces directive
Mother Firm	2433, mother persists with directive 2453, mother enforces directive
Parents Coerce	1303, father hits child 1313, father pushes child 1323, father takes, grabs 1333, father shames, criticizes 1343, father yells at child 1353, father threatens, frightens 1363, father threat gesture 1373, father play hits child 1383, father restrains child 2303, mother hits child 2313, mother pushes child 2323, mother takes, grabs 2333, mother shames, criticizes 2343, mother yells at child 2353, mother threatens, frightens 2363, mother threat gesture 2373, mother play hits child 2383, mother restrains child
Child Coerces	330x, child hits 331x, child pushes 332x, child takes, grabs 333x, child shames, criticizes 334x, child yells at 335x, child threatens, frightens 336x, child threat gesture 337x, child play hits 338x, child restrains
Total Positive Affect	x99x, laughs, smiles
Total Hugs	x21x, hugs, holds affectionatly
Total Upset	x89x, distressed voice, hurt x90x, distressed voice, sad x91x, cry-face x92x, cries x93x, distressed voice, anger x94x, angry gesture x95x, rages x96x, fear gesture x97x, trembles

	x98x, bored
Rate of Compliance to Father	3501, child complies to father 3511, child partially complies
Rate of Compliance to Mother	3502, child complies to mother 3512, child partially complies

Rate of Compliance is calculated by dividing the summed categories above (i.e., 3501,3511,3502,3512) by the totals for Father Directs and Mother Directs, respectively. This is then expressed as a percentage.

F. Appendix 2: Parent Rating Variables

The items below are taken from Baumrind (1970a, 1970b, 1972b). (The item numbers are Baumrind's; however, the numbering in 1970a and b differs from the numbering in Baumrind, 1971.) The earlier items (1970a, 1970b) were converted from four-point to five-point scales to match the format used in Baumrind, 1972b. This was done by inserting a null middle category (3).

Scale scores were calculated by summing items negatively or positively, depending on their relationship with the scale name. Scores were then transformed by adjusting the lower end of the range so that scores could potentially go to zero, and then converting them to a percentage of the total possible score. (This procedure was followed with the Q-Sort scales as well.)

I. Firm

Source: Baumrind 1971, Mother Parent Rating Cluster 1, p.15; Father Parent Rating Cluster 1, p.15.

7. 33 cannot be coerced by child (OMITTED)
8. 32 enforcement after initial noncompliance
9. 31 firm enforcement
10. 34 uses negative sanctions when defied
11. 37 forces confrontation when child disobeys
12. 38 willingly exercises power to obtain obedience
13. 40 disapproves of defiant stance
14. 35 requires child to pay attention

15. 36 promotes own code of behavior

16. 42 child must defer to parental expertise

II. Directive

Source: Baumrind 1971, Joint Parent Rating Cluster 3, p.17.

1. 14 regimen set for child

2. 15 fixed bedtime hour

3. 11 many rules and regulations

4. 12 many restrictions on TV (OMITTED)

5. 13 many restrictions on eating (OMITTED)

III. Warm

Source: Baumrind 1971, Mother Parent Rating Cluster 4, p.15.

1. 71 becomes inaccessible when displeased

2. 75 disciplines harshly

3. 74 unresponsive

4. 45 assumes stance of personal infallibility

5. 41 parent's needs take precedence

6. 73 cool

IV. Responsive

Source: Baumrind 1971, Mother Parent Rating Cluster 2, p.15; Father Parent Rating Cluster 2, p.16.

1. 57 gives reasons with directives (OMITTED)
2. 52 offers child alternatives
3. 55 solicits child's opinions
4. 69 defines child's individuality clearly
5. 60 encourages intimate verbal contact
6. 72 lacks empathic understanding
7. 53 listens to critical comments(OMITTED)
8. 59 encourages verbal give and take
9. 56 meaningful verbal interaction
10. 30 flexible views
11. 66 promotes individuality in child (OMITTED)
12. 44 does not share decision-making power with child (OMITTED)

V. Encourage Independence

1. 4 demand child dresses self
2. 10 demands have educational value
3. 20 encourage self-help
4. 51 encourages independent actions

VI. Encourage Expression of Negative Affect

1. 17 encourages emotional dependency
2. 19 not overprotective (OMITTED)
3. 81 discourages expression of negative affect (ADDED)
   a. Parents seem to value emotional expressiveness and encourage it for its cathartic value. Even during a confrontation, parents will give time for or actively encourage the expression of negative feelings, even if remaining firm in their directive. While the parent may be influenced by the child to modify the directive, the parent doesn't find the child's upset aversive and isn't coerced by it.
   b. Parents seem to value or do permit emotional expressiveness in general but during a confrontation, the parents' priority is clearly obedience. While the child won't be discouraged from expressing upset, it is treated as if it were an epiphenomenon of little importance. In non-agonistic situations, the emphasis is on correcting the situation, not on the upset <u>per se</u>.
   c. Parents react to upset by distracting child or denying the hurt. During a confrontation, they can be coerced by the child's upset.
   d. The parents value or attempt to teach emotional control. The child may be instructed not to cry, etc. Expressing upset is discouraged by verbal means (excluding threats

of physical punishment).

e. Parents attempt to suppress expression of negative emotions by humiliation, physical punishment, or by threats of physical punishment.

G. Appendix 3: Child Rearing Practices Q-Sort Scales

Items were loaded negatively or positively, depending on their relationship with the scale name. The lower end of the range was adjusted to zero by the addition of a constant, and the scale scores were then converted to a percentage in order to standardize them.

I. Mother Punitive

1. 29 I teach my child that in one way or another punishment will find (him) (her) when (she) (he) is bad.
2. 25 I find it difficult to punish my child
3. 43 I have strict, well-established rules for my child
4. 15 I believe that children should be seen and not heard
5. 36 I tend to spoil my child

II. Father Punitive

1. 29 I teach my child that in one way or another punishment will find (him) (her) when (she) (he) is bad.
2. 43 I have strict, well-established rules for my child
3. 58 When I am angry with my child, I let (him) (her) know it.
4. 60 I punish my child by taking away a priviledge (he) (she)

otherwise would have had.

5. 25 I find it difficult to punish my child

6. 38 I talk it over and reason with my child when (he) (she) misbehaves.

7. 64 I believe that scolding and criticism make my child improve.

III. Mother Warm

1. 42 My child and I have warm, intimate times together.

2. 34 I am easy going and relaxed with my child.

3. 22 I usually take account of my child's preferences in making plans for the family.

4. 18 I express affection by hugging, kissing, and holding my child.

5. 1 I respect my child's opinions and encourage (him) (her) to express them.

6. 70 I do not allow my child to question my decisions.

7. 69 There is a good deal of conflict between my child and me.

8. 5 I often feel angry with my child.

IV. Father Warm

1. 40 I joke and play with my child.
2. 34 I am easy going and relaxed with my child.
3. 42 My child and I have warm, intimate times together.
4. 22 I usually take account of my child's preferences in making plans for the family.
5. 18 I express affection by hugging, kissing, and holding my child.
6. 1 I respect my child's opinions and encourage (~~him~~) (her) to express them.
7. 70 I do not allow my child to question my decisions.
8. 5 I often feel angry with my child.

V. Mother Encourages Emotional Expression

1. 53 I encourage my child to talk about (his) (her) troubles.
2. 27 I don't allow my child to say bad things about (his) (her) teachers.
3. 31 I don not allow my child to get angry with me.
4. 55 I teach my child to keep control of (his) (her) feelings at all times.

VI. Father Encourages Emotional Expression

1. 55 I teach my child to keep control of (his) (her) feelings at all times.
2. 27 I don't allow my child to say bad things about (his) (her) teachers.
3. 81 I think quarreling and jealousy between brothers and sisters should be punished

VII. Mother Encourages Independence

1. 2 I encourage my child always to do (his) (her) best
2. 33 I expect a great deal of my child.
3. 44 I think one has to let a child take many chances as (he) (she) grows up and tries new things.
4. 13 I try to stop my child from playing rough games or doing things where (he) (she) might get hurt.
5. 20 I prefer that my child not try things if there is a chance (he) (she) will fail.
6. 79 I instruct my child not to get dirty while (he) (she) is playing

VIII. Father Encourages Independence

1. 13 I try to stop my child from playing rough games or doing things where (he) (she) might get hurt.
2. 44 I think one has to let a child take many chances as (he) (she) grows up and tries
3. 41 I give my child a good many duties and family responsibilities.
4. 67 I teach my child that (he) (she) is responsible for what happens to (him) (her).
5. 75 I encourage child to be independent of me.

IX. Mother Involved as Parent

1. 77 I find it interesting and educational to be with my child for long periods.
2. 19 I find some of my greatest satisfactions in my child.
3. 48 I sometimes feel that I am too involved with my child.
4. 62 I enjoy having the house full of children.
5. 72 I like to have some time for myself, away from my child

I. Father Involved as Parent

1. 62 I enjoy having the house full of children.
2. 77 I find it interesting and educational to be with my child for long periods.
3. 19 I find some of my greatest satisfactions in my child.
4. 23 I wish my child did not have to grow up so fast.
5. 32 I feel my child is a bit of a disappointment to me.
6. 72 I like to have some time for myself, away from my child

H. Appendix 4: Preschool Behavior Q-Sort Scales

Items were taken from Baumrind (1968).

Items were loaded negatively or positively, depending on their relationship with the scale name. (The initial phrase in each item defines the item's meaning when sorted as characteristic; the phrase in parentheses defines the item's meaning when it is sorted as uncharacteristic.) The lower end of the range was adjusted to zero by the addition of a constant, and the scale scores were then transformed to a percentage in order to standardize them.

I. Friendly

Source: Baumrind 1971, Cluster 1, p.7.

1. 55 understands other children's position in interaction or altercation (nonempathic)
2. 7 nurturant or sympathetic toward other children (unsympathetic when another child is in distress)
3. 54 bullies other children (is not a bully)
4. 72 thoughtless of other children's productions (takes care not to destroy another child's work)
5. 70 insulting (does not assault another child's ego)
6. 63 selfish (altruistic, shares his possessions willingly)
7. 35 helps other children carry out their activities (purposely disrupts activities of other children)

II. Cooperative

Source: Baumrind 1971, Cluster 2, p.7.

1. 32 obedient (disobedient)
2. 69 responsible about following standard operating procedure at school (shows little concern about rules and regime)
3. 44 actively facilitates nursery school routine (undependable)
4. 33 destructively impetuous and impulsive (self-controlled and thoughtful)
5. 27 tries to evade adult authority (accepts adult guidance)
6. 52 can be trusted (sneaky, cannot be trusted)
7. 68 provocative with adults (does not challenge adult authority)

III. Purposive

Source: Baumrind 1971, Cluster 5, p.7.

1. 10 spectator (participant)
2. 14 characteristically unoccupied (generally busy, always occupied)
3. 49 an interesting, arresting child (fades into background)
4. 59 samples activities aimlessly, lacks goals (purposive)
5. 15 vacillates and oscillates (knows what actions he wants to take and with whom)
6. 19 disoriented in his environment (well-oriented in his

environment)

7. 16 confident (lacks confidence)
8. 24 paid attention to by other children (goes unnoticed by other children)
9. 18 self-starting and self-propelled (needs reassurance and encouragement from others in order to embark)

IV. Achievement Oriented

Source: Baumrind 1971, cluster 6, p.8.

1. 8 does not persevere when s/he encounters frustration (perseveres)
2. 53 stretches to meet the situation when much is demanded of him (retreats when much is demanded of him)
3. 20 does not become pleasurably involved in structured tasks (involves self pleasurabley in structured activities)
4. 6 likes to learn new cognitive skills (does not actively seek new learning experiences)
5. 42 sets goals which expand his abilities, e.g., learning to pump on swings, trying difficult puzzles (likes to do only what is easiest for him)
6. 12 gives his best to work and play (puts little effort into what he does)
7. 26 easily frustrated or upset when an obstacle to task performance is encountered (has high tolerance for frustration)

V. Ego Strength

Source: Waters et al., 1979).

1. 18 self-starting and self-propelled (needs reassurance and encouragement from others in order to embark)
1. 17 lacking in curiosity (curious)
2. 19 disoriented in his environment (well-oriented in his environment)
3. 5 forcefully goes after what s/he wants (hesitates or is easily put off)
4. 6 likes to learn new cognitive skills (does not actively seek new learning experiences)
5. 16 confident (lacks confidence)
6. 42 sets goals which expand his abilities, e.g., learning to pump on swings, trying difficult puzzles (likes to do only what is easiest for him)
7. 12 gives his best to work and play (puts little effort into what he does)
8. 8 does not persevere when s/he encounters frustration (perseveres)
9. 59 samples activities aimlessly, lacks goals (purposive)
10. 11 suggestible (has a mind of his own)
11. 61 tries to manipulate adults (relates straightforwardly to adults)

VI. Peer Competence

Source: Waters et al., 1979.

1. 23 other children seek his company (company seldom sought by other children)
2. 50 socially withdrawn (outgoing)
3. 47 plans activities for other children (seeks direction from other children or teacher)
4. 20 does not become pleasurably involved in structured tasks (involves self pleasurablely in structured activities)
5. 21 peer-leader (follower)
6. 7 nurturant or sympathetic toward other children (unsympathetic when another child is in distress)
7. 10 spectator (participant)
8. 49 an interesting, arresting child (fades into background)
9. 13 timid with other children (bold with other children)
10. 57 withdraws when faced with excitement or a great deal of activity (enjoys excitement)
11. 60 typically in role of a listener (full participant in group talks)
12. 14 characteristically unoccupied (generally busy, always occupied)

VII. Sociable

1. 23 other children seek his company (company seldom sought by other children)
2. 45 seeks company of other children (avoids company of other children)
3. 50 socially withdrawn (outgoing)
4. 46 avoids peer interaction by techniques such as seeking adult attention (comfortable and secure in interaction with adults)
5. 10 spectator (participant)
6. 60 typically in role of a listener (full participant in group talks)

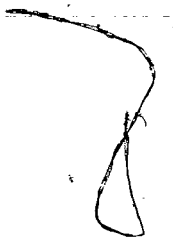
VIII. Socially Effective

1. 9 lacks ability to get along with other children (interacts smoothly with other children)
2. 21 peer leader (follower)
3. 47 plans activities for other children (seeks direction from other children or teacher)
4. 13 timid with other children (bold with other children)
5. 2 manipulates other children to enhance his own position or to get what he wants (non-manipulative)
6. 61 tries to manipulate adults (relates straightforwardly to adults)

7. 24 paid attention to by other children (goes unnoticed by other children)

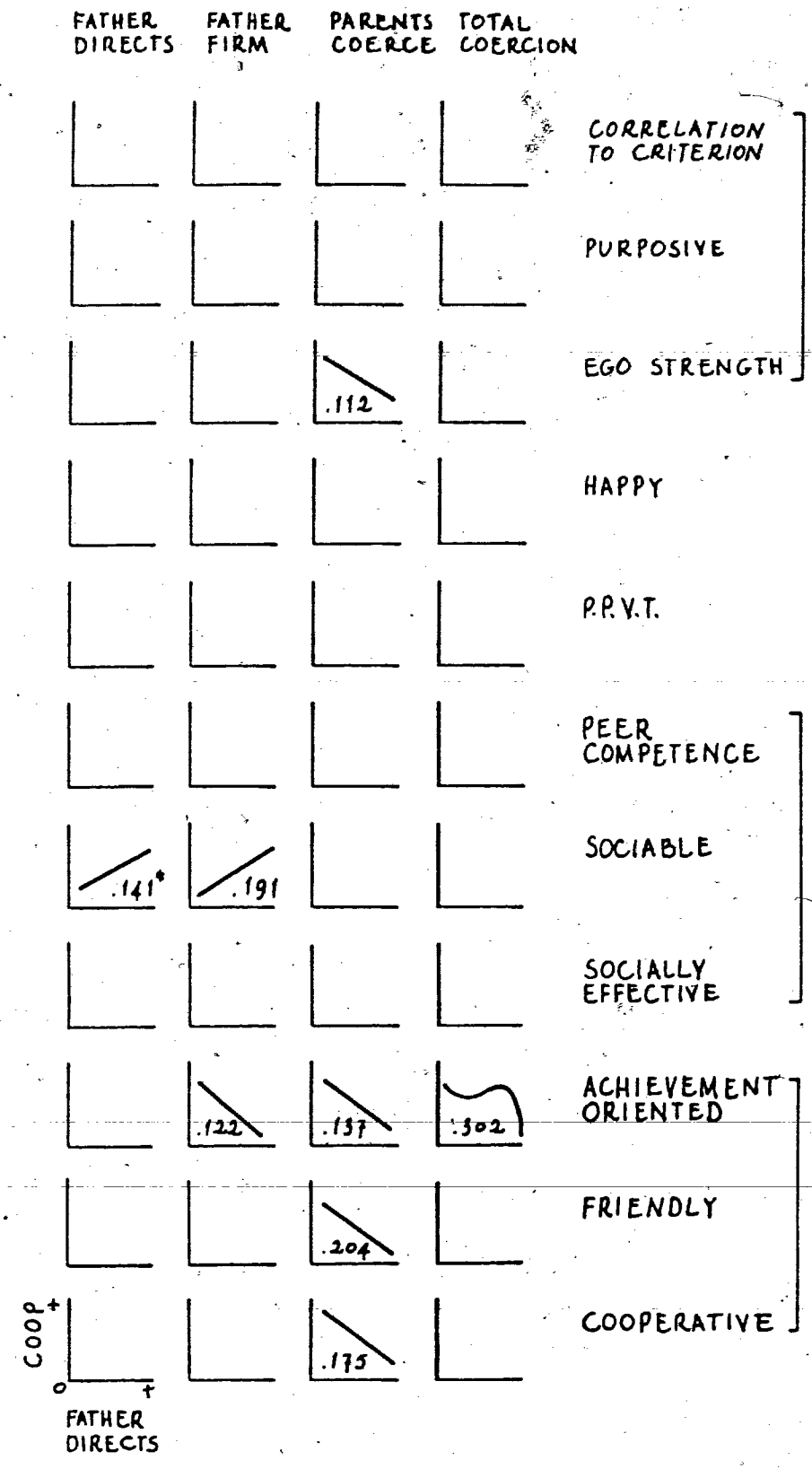
IX. Happy

1. 29 emotionally expressive; laughs, smiles frequently, (emotionally bland)
2. 30 apprehensive (not anxious)
3. 56 content, cheerful attitude (discontent)



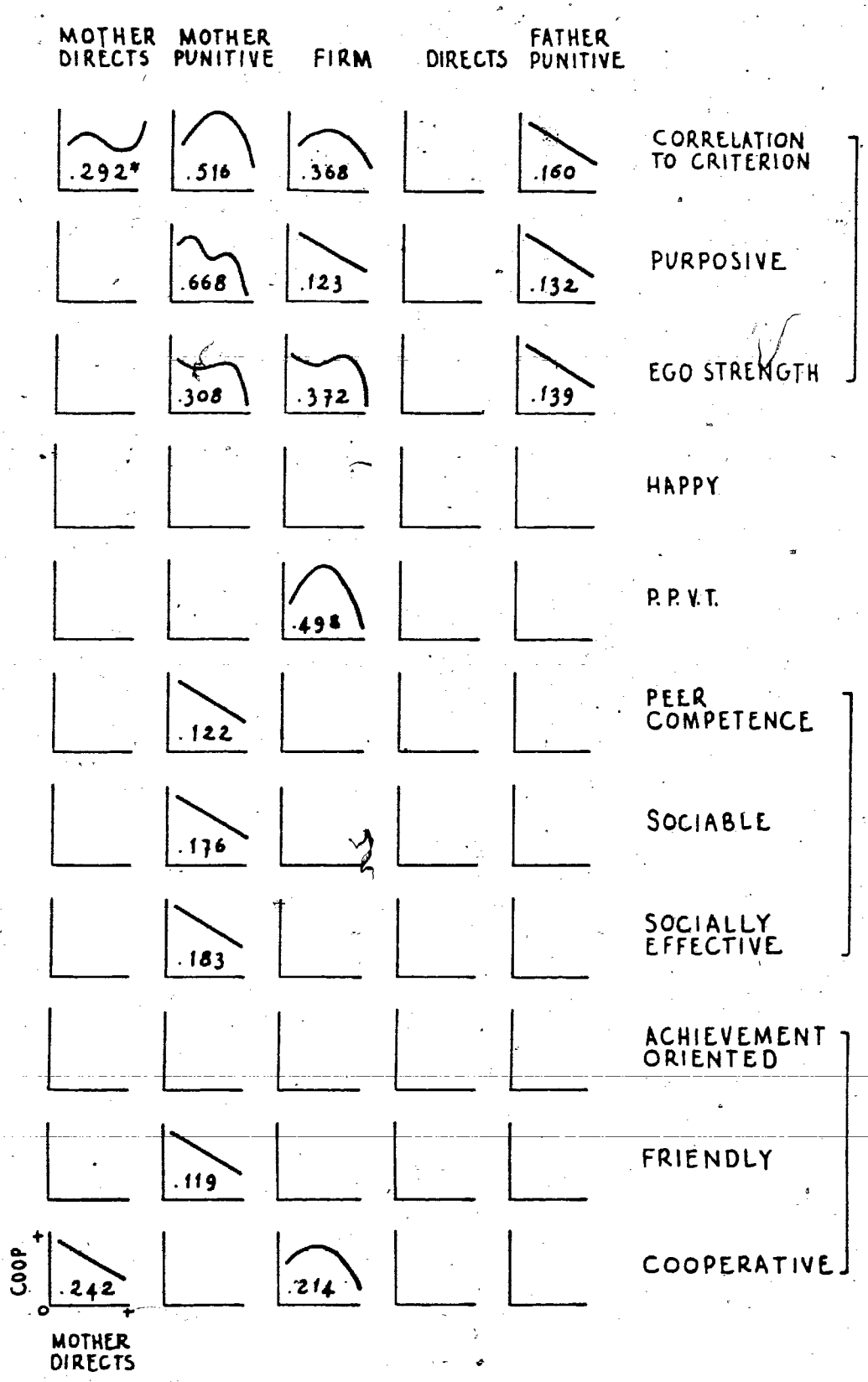
I. Appendix 5: Summary Relationships Between Parenting and Competence

I. Power Cluster 1: Parents Controlling



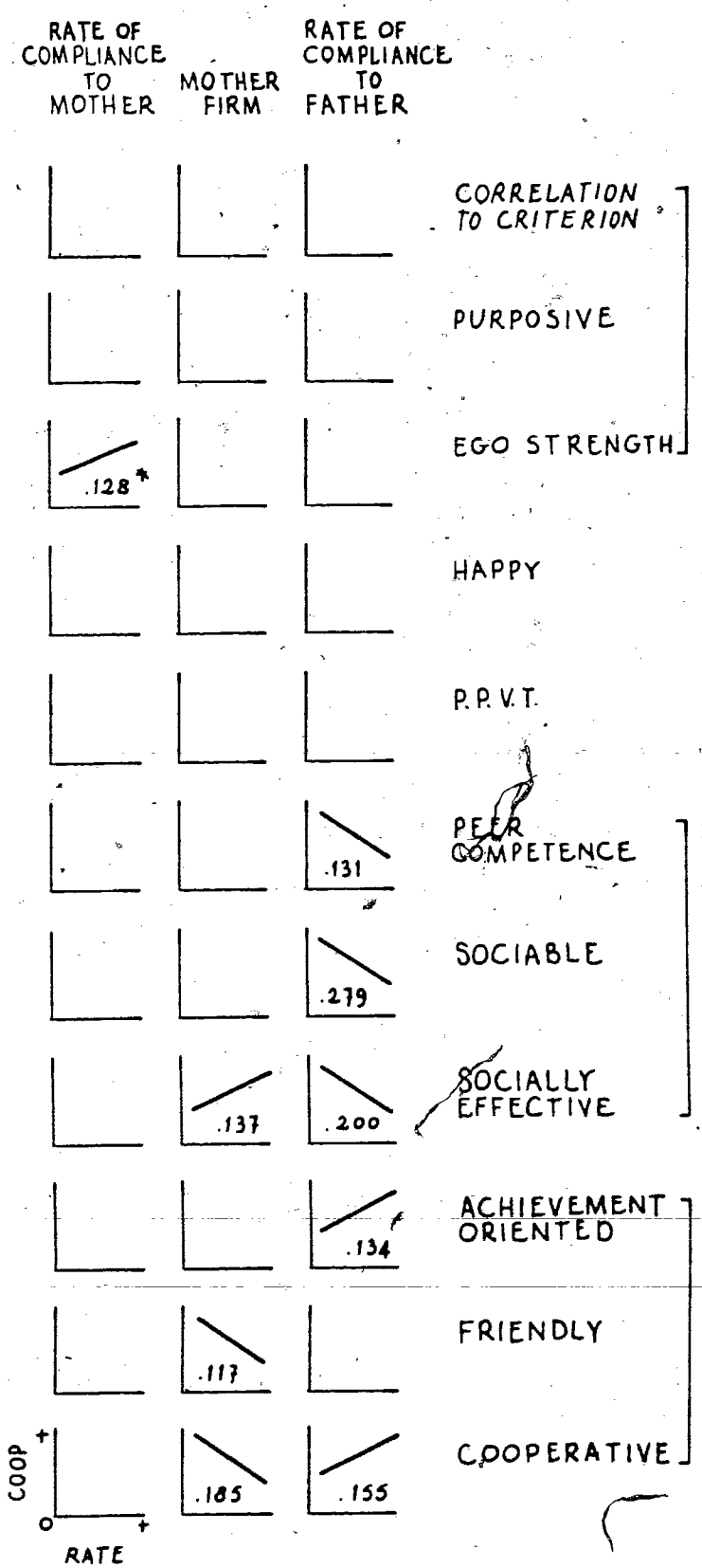
*R^2

II. Power Cluster 2: Parents Directive

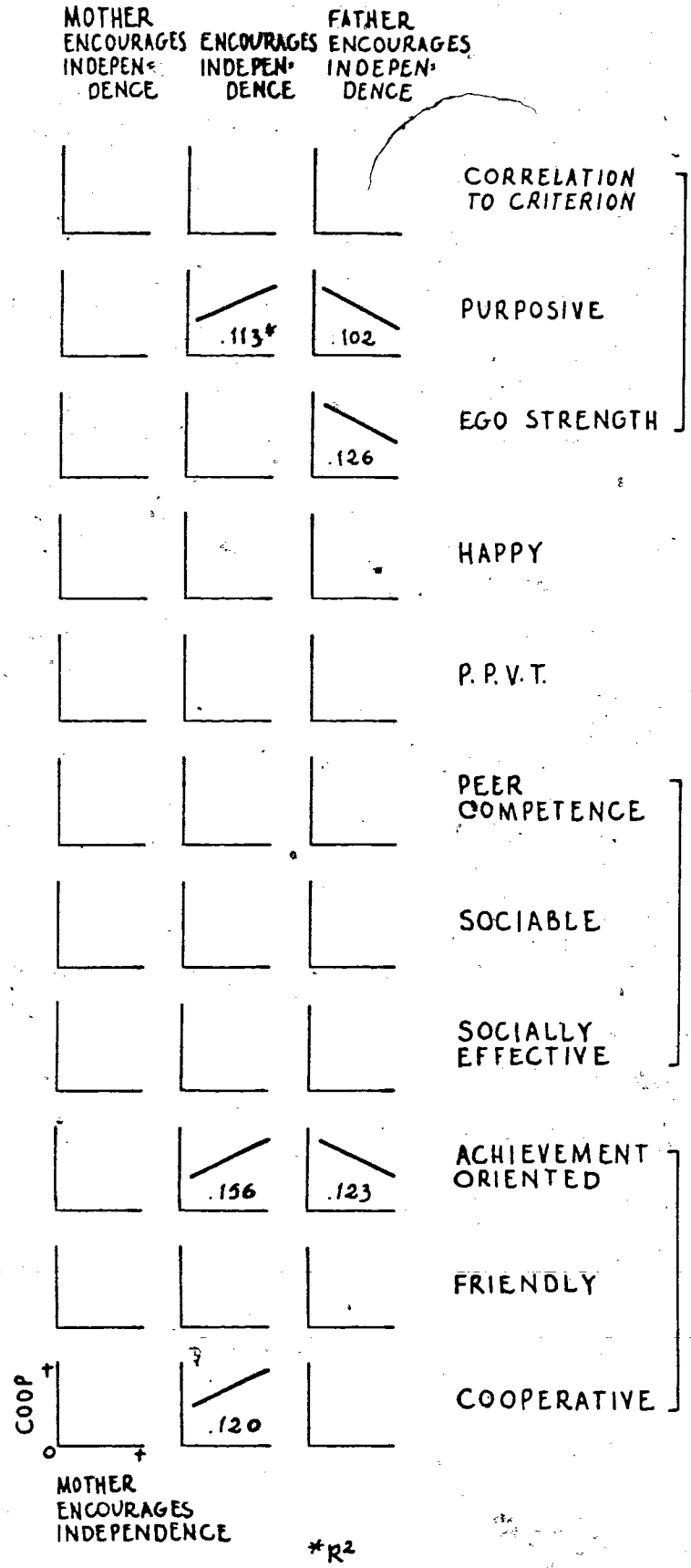


*R^2

III. Power Cluster 3: Child Compliance



IV. Power Cluster 4: Encourages Independence



*R^2

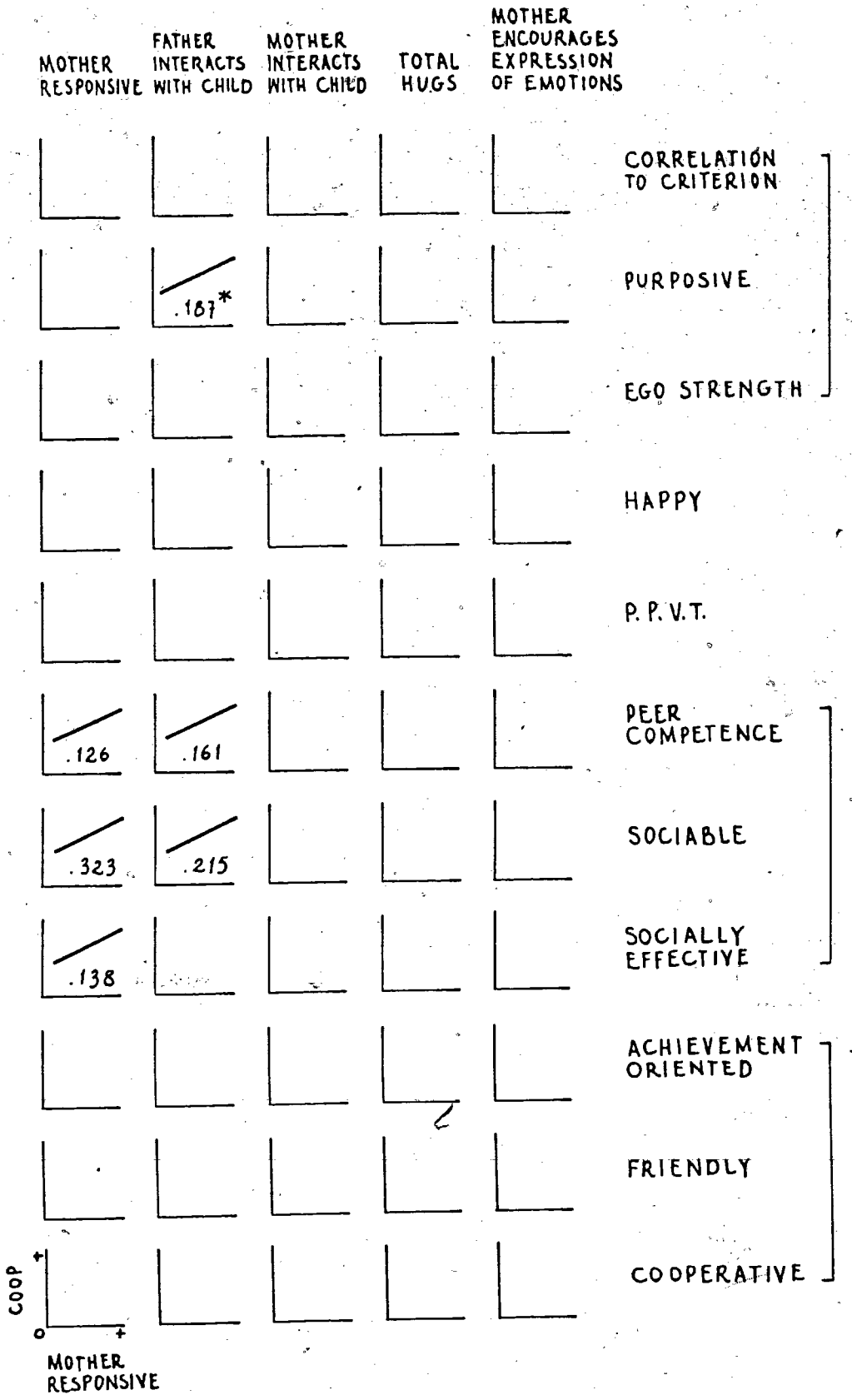
V. Warmth Factor 1: Parents Warm

FATHER RESPONSIVE	FATHER WARM	FATHER INVOLVED PARENT	WARM	RESPONSIVE	ENCOURAGES EXPRESSION OF NEGATIVE AFFECT	MOTHER WARM	MOTHER INVOLVED PARENT	
.480*	.550	.597	.639	.654	.442	.712	.579	CORRELATION TO CRITERION
.536	.481	.395	.478	.628	.280	.600	.499	PURPOSIVE
.505	.508	.456	.429	.405	.315	.559	.524	EGO STRENGTH
.225	.257				.332			HAPPY
.241					.373			P.P.V.T.
.429	.480	.470	.476	.602	.354	.554	.431	PEER COMPETENCE
.156	.119		.121	.389		.289	.135	SOCIABLE
.120					.328	.186	.160	SOCIALLY EFFECTIVE
.224							.264	ACHIEVEMENT ORIENTED
							.158	FRIENDLY
	.122						.136	COOPERATIVE

COOP + / 0 / + FATHER RESPONSIVE

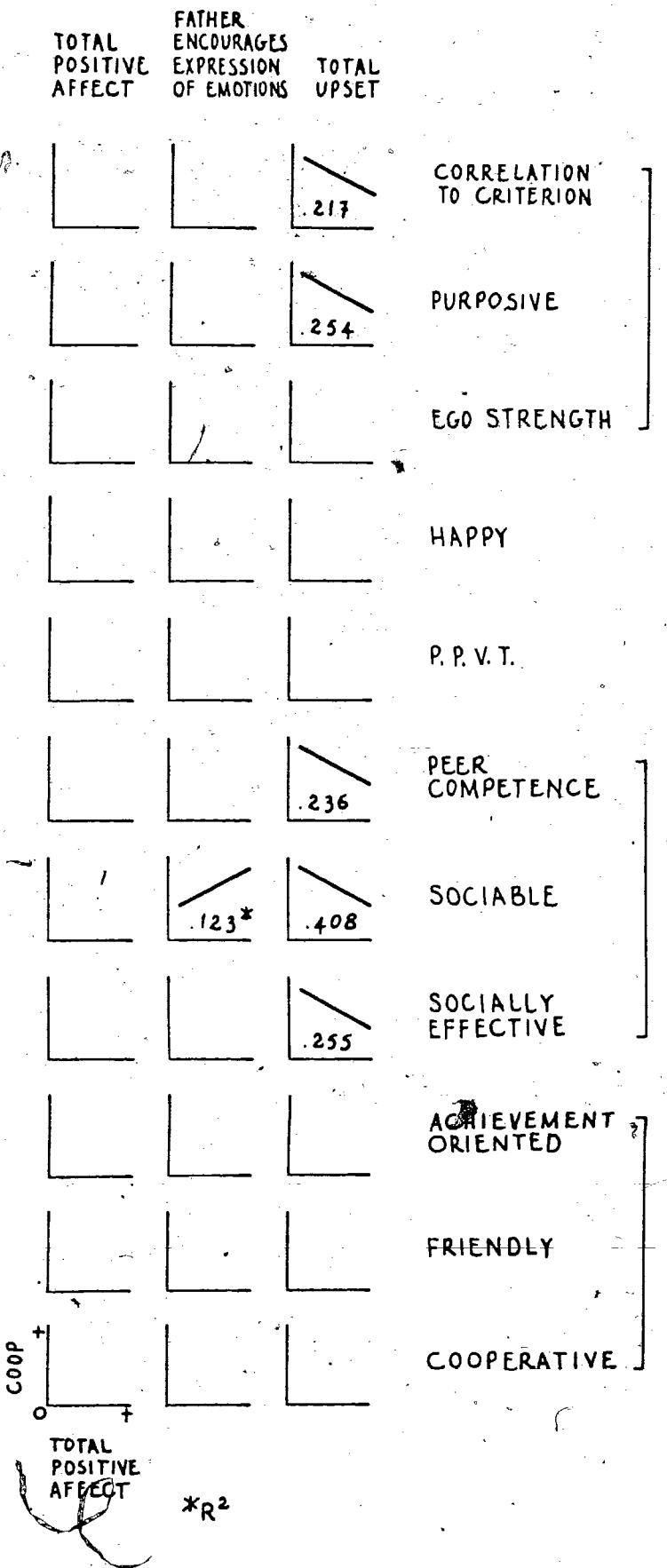
*R^2

VI. Warmth Factor 2: Mother Alert, Distant



*R^2

VII. Warmth Factor 3: Happiness



J. Appendix 6: Canonical Correlations

Canonical correlations [1] were done for groups of competence and family interaction variables. The competence variables were grouped by cluster while the family interaction variables were grouped by the broad rubrics of power and warmth. The variables in the competence cluster Positive Engagement were omitted from these analyses, since only one warmth and one power variable had consistent relationships with all three scales. Only those family interaction variables which had shown consistent relationships in the linear and non-linear analyses were included in the canonical correlations.

I. Measures of General Competence and Power

Group 1	Group 2
Criterion Correlation	Mother Punitive
Purposive	Father Punitive
Ego Strength	Firm

Number of Canonical Variables=1
Bartlett's Test: Chi-square=16.98, df=9, p=.049

Squared Multiple Correlations of Parenting Variables with Group 1

Variable	R-squared (adj)	F	df	p
Mother Punitive	.346	6.11	3,26	.003
Firm	.119	2.31	3,26	.100
Father Punitive	.071	1.73	3,26	.185

---

[1] Program BMDP6M, Canonical Correlation Analysis.

Bartlett's Test indicates the number of canonical variables (in this case, 1) needed to express the dependency between the two groups.

II. Measures of General Competence and Warmth

Group 1	Group 2
Criterion Correlation	Father Responsive
Purposive	Father Warm
Ego Strength	Father Involved as Parent
	Warm
	Responsive
	Encourages Expression of Negative Affect
	Mother Warm
	Mother Involved as Parent

Number of Canonical Variables=1
Bartlett's Test: Chi-square=35.13, df=24, p=.066

Squared Multiple Correlations of Parenting Variables with Group 1

Variable	R-squared (adj)	F	df	p
Father Responsive	.096	1.99	3,25	.141
Father Warm	.393	7.06	3,25	.001
Father Involved as Parent	.151	2.66	3,25	.070
Warm	.162	2.81	3,25	.060
Responsive	.294	4.88	3,25	.008
Encourages Expression of Negative Affect	.045	1.44	3,25	.255
Mother Warm	.140	2.52	3,25	.081
Mother Involved as Parent	.354	6.12	3,25	.003

III. Measures of Social Competence and Power

Group 1	Group 2
Peer Competence	Mother Punitive
Sociable	Rate of Compliance to
Socially Effective	Father

Number of Canonical Variables=1
Bartlett's Test: Chi-square=14.84, df=6, p=.022

Squared Multiple Correlations of Parenting Variables with Group 1

Variable	R-squared (adj)	F	df	p
Mother Punitive Rate of Compliance to Father	.100	2.07	3,26	.146
	.298	5.10	3,26	.014

IV. Measures of Social Competence and Warmth

Group 1	Group 2
Peer Competence	Father Responsive
Sociable	Mother Warm
Socially Effective	Mother Involved as Parent
	Total Upset
	Mother Responsive

Number of Canonical Variables=1
Bartlett's Test: Chi-square=23.88, df=15, p=.067

Squared Multiple Correlations of Parenting Variables with Group 1

Variable	R-squared (adj)	F	df	p
Father Responsive	.115	2.26	3,26	.105
Mother Warm	.153	2.75	3,26	.063
Mother Involved as Parent	.077	1.81	3,26	.171
Total Upset	.061	1.63	3,26	.206
Mother Responsive	.037	1.37	3,26	.273

K. Appendix 7: Correlations Among Family Interaction Variables

CORRELATIONS AMONG FAMILY INTERACTION VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1. Father Directs																														
2. Father Firm	.47																													
3. Parents Coerce	.36	.43																												
4. Total Coercion	.44	x	.63																											
5. Mother Directs	x	x	x	x1																										
6. Mother Punitive	x	x	x	x1	.52																									
7. Firm	x	x	x	x1	.50	.60																								
8. Directs	x	x	x	x1	.44	.35	.68																							
9. Father Punitive	x	x	x	x1	.40	.37	x	x																						
10. Rate of Compliance, Mother	x	x	x	x1	x	x	x	x	x																					
11. Mother Firm	x	x	x	x1	x	x	x	x	x	.45																				
12. Rate of Compliance, Father	x	x	x	x1	x	.36	x	x	x	x	.40																			
13. Mother Encourages Indepm.	x	x	.32	x1	x	x	x	x	x1	.33	x	x1																		
14. Encourages Independence	x	x	x	x1	x	.32	x	x	x1	x	x	x1	.59																	
15. Father Encourages Indepm.	x	x	x	x1	x	x	x	x	x1	x	x	x1	x	x																
16. Father Responsive	x	.38	x	x1	x	x	.45	x	.331	x	x	x1	x	x	x															
17. Father Warm	x	x	x	x1	.55	.48	.59	.31	.711	x	x	x1	x	x	x	.46														
18. Father Involved Parent	x	x	x	x1	.51	.36	.35	.36	.581	x	x	.331	.34	x	x	x	.73													
19. Warm	x	x	x	x1	x	.45	.63	.36	.361	x	x	x1	.49	.12	x	.61	.59	.41												
20. Responsive	x	x	x	x1	x	.54	.45	x	.541	x	x	x1	.53	.48	x	.41	.55	.41	.80											
21. Encourages Expression of Negative Affect	x	x	x	x1	x	x	x	.41	x1	x	.31	x1	x	x	x	.47	.33	.32	.52	.39										
22. Mother Warm	x	x	x	x1	x	.53	.54	.36	.401	x	x	x1	x	x	x	.39	.44	.41	x	x	x									
23. Mother Involved Parent	x	x	x	x1	.32	.37	.40	x	x1	x	x	x1	.34	x	.38	x	.33	.40	.33	x	x	.42								
24. Mother Responsive	.44	.55	x	x1	x	x	x	x	x1	x	x	.361	x	x	x1	x	x	x	x	x	x	x	x							
25. Father Interacts w/ Child	.56	.45	x	x1	x	.33	x	x	x1	x	x	x1	.39	.49	x1	x	x	.31	x	.32	x	x	x	.48						
26. Mother Interacts w/ Child	.37	x	x	x1	x	x	x	x	x1	x	x	x1	x	x	x1	.34	x	x	x	x	x	.36	x	x	x					
27. Total Hugs	x	x	x	x1	x	x	x	x	x1	x	x	x1	.52	.15	x1	x	x	x	x	x	x	x	x	x	.44	x				
28. Mother Encourages Expression of Emotions	x	x	x	x1	x	x	x	x	x1	x	x	x1	x	x	x1	x	x	x	x	x	x	.41	x	x	x	x	x			
29. Total Positive Affect	x	x	x	x1	x	x	x	x	x1	.31	.42	x1	x	x	x1	x	x	x	x	x	x	x	x1	x	x	x	x	x1		
30. Father Encourages Expression of Emotions	x	x	x	x1	x	x	x	x	x1	x	x	x1	x	.46	x1	x	x	x	x	x	x	x	x1	x	x	x	x	x1	x	
31. Total Upset	x	x	.49	.381	x	x	x	x	x1	x	x	x1	x	x	x1	x	x	x	x	x	x	x	x1	x	x	x	x	x1	x	-.35

r	p
.306	.10
.360	.05
.463	.01
.570	.001

x = nonsignificant

L. Appendix 8: Convergent Validity: Correlations Among Conceptual Groups of Family Interaction Variables

CORRELATIONS AMONG FAMILY VARIABLES GROUPED BY CONCEPT

	r	p
	.306	.10
	.360	.05
	.463	.01
	.570	.001

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Father Directs (O)																										
2. Mother Directs (O)	x																									
3. Directs (R)	x	.44																								
4. Mother Firm (O)	x	x	x																							
5. Father Firm (O)	.47	x	x	x																						
6. Firm (R)	x	.50	.68	x	x																					
7. Mother Punitive (S)	x	.52	.35	x	x	.60																				
8. Father Punitive (S)	x	.40	x	x	x	x	.37																			
9. Mother Encourages Indep. (S)	x	x	x	x	x	x	x	x																		
10. Father Encourages Indep. (S)	x	x	x	x	x	x	x	x	x																	
11. Encourages Independence (R)	x	x	x	x	x	x	.32	x	.59	x																
12. Father Responsive (O)	x	x	x	x	.38	.45	x	.33	x	x	x															
13. Mother Responsive (O)	.44	x	x	x	.55	x	x	x	x	x	x	x														
14. Responsive (R)	x	x	x	x	x	.45	.54	.54	.53	x	x	.41	x													
15. Father Warm (S)	x	.55	.31	x	x	.59	.48	.71	x	x	x	.46	x	.55												
16. Mother Warm (S)	x	x	.36	x	x	.54	.53	.40	x	x	x	.39	x	x	.44											
17. Warm (R)	x	x	.36	x	x	.63	.45	.36	.49	x	.42	.61	x	.80	.59	x										
18. Total Hugs (O)	x	x	x	x	x	x	x	x	.52	x	.45	x	x	x	x	x	x									
19. Mother Involved Parent (S)	x	.32	x	x	x	.40	.37	x	.34	.38	x	x	x	x	.33	.42	x	x								
20. Father Involved Parent (S)	x	.51	.36	x	x	.35	.36	.58	.34	x	x	x	x	.41	.13	.41	.41	x	.40							
21. Mother Interacts w/ Child (O)	.37	x	x	x	x	x	x	x	x	x	x	.34	x	x	x	.36	x	x	x	x						
22. Father Interacts w/ Child (O)	.56	x	x	x	.45	x	.33	x	.39	x	.49	x	.48	.32	x	x	x	.44	x	.31	x					
23. Total Upset (O)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				
24. Total Positive Affect (O)	x	x	x	.42	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
25. Encourages Expression of Negative Affect (R)	x	x	.41	.31	x	x	x	x	x	x	.48	.47	x	.39	.33	x	.52	x	x	.32	x	x	x	x		
26. Mother Encourages Expression of Emotions (S)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	.41	x	x	x	x	x	x	x	x	x	
27. Father Encourages Expression of Emotions (S)	x	x	x	x	x	x	x	x	x	x	.46	x	x	x	x	x	x	x	x	x	x	x	.35	x	x	x

	1	2	3	4	5	6	7	8	9	10	11
1. Correlation to Criterion											
2. Purposive	.86										
3. Ego Strength	.85	.85									
4. Peer Competence	.73	.79	.55								
5. Sociable	.59	.65	.39	.80							
6. Socially Effective	.51	.53	x	.80	.63						
7. Friendly	.46	x	x	x	x	x					
8. Cooperative	.43	x	.41	x	x	x	.59				
9. Achievement Oriented	.62	.47	.70	x	x	x	.32	.60			
10. Happy	.55	.42	.34	.48	.38	.48	x	x	x		
11. Peabody Vocabulary	.37	x	.31	.34	x	x	x	x	.36	x	

	r	p
	.31	.10
	.36	.05
	.46	.01
	.57	.001

x = nonsignificant

B. Appendix 10: Family Interaction and Competence Measures: Descriptive Statistics

Preschool Behavior Q-Scales

(as % of total possible scale score)

	Mean	S.D.	Min.	Max.
Purposive	71.2	15.6	12.5	90.3
Achievement Oriented	64.6	18.8	24.1	89.3
Friendly	67.9	18.6	28.6	96.4
Cooperative	65.0	24.2	10.7	98.2
Peer Competence	65.6	13.9	16.7	81.2
Ego Strength	68.1	13.0	19.8	84.9
Sociable	68.0	15.4	29.2	85.4
Socially Effective	57.3	16.6	16.1	83.9
Happy	69.7	18.0	20.8	95.8

Correlation to Criterion

.487	.280	-.590	.794

Peabody Vocabulary

111.9	11.1	86.0	126.0

Child Rearing Practices Q-Scales

(as % of total possible scale score)

	Mean	S.D.	Min.	Max.
Mother Punitive	44.9	17.4	6.7	83.3
Father Punitive	48.3	15.8	21.4	81.0
Mother Warm	76.7	12.8	41.7	95.8
Father Warm	77.4	13.6	27.1	95.8
Mother Involved Parent	44.2	13.5	10.0	76.7
Father Involved Parent	56.8	15.0	8.3	83.3
Mother Encourages Expression Emo.	75.1	11.7	45.8	95.8
Father Encourages Expression Emo.	69.7	14.9	37.5	91.7
Mother Encourages Independence	65.7	14.8	36.1	88.9
Father Encourages Independence	62.9	15.9	30.0	90.0

Parent Rating Scales

(as % of total possible scale score)

	Mean	S.D.	Min.	Max.
Warm	63.9	13.0	24.0	88.0
Responsive	69.1	10.7	40.6	87.5
Encourage Expression of Negative Affect	38.3	17.1	0.0	70.0
Firm	60.1	14.7	30.6	94.4
Directive	64.4	14.2	16.7	83.3
Encourage Independence	53.8	16.1	18.8	81.2

Observation Variables

(as % of total events)

	Mean	S.D.	Min.	Max.
Father Directs	1.92	1.4	0.2	7.4
Mother Directs	2.21	1.3	0.3	5.4
Father Firm	0.37	0.4	0.0	1.3
Mother Firm	0.38	0.3	0.0	1.6
Parents Coerce	0.14	0.3	0.0	1.3
Father Responsive (unreflected)	0.67	0.6	0.0	2.7
Mother Responsive (unreflected)	0.85	0.6	0.1	3.2
Father Interacts with Child	6.18	3.4	0.9	15.0
Mother Interacts with Child	7.13	2.5	2.1	11.4
Total Hugs	1.96	1.2	0.4	4.9
Total Positive Affect	3.52	1.1	1.2	5.9
Total Upset	0.93	1.0	0.0	3.9

Observation Statistics

Total Events (per family)	847.0	---	605.0	1228.0
Total Duration (minutes)	128.4	---	83.2	181.4

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