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PEER BEHAVIOR, CAREGIVER-DIRECTED BEHAVIOR, AND MOTHER-CHILD
INTERACTION IN MALTREATED CHILDREN

City University of New York

Ph.D. 1983

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PEER BEHAVIOR, CAREGIVER-DIRECTED BEHAVIOR, AND MOTHER-CHILD
INTERACTION IN MALTREATED CHILDREN

by

Stephanie Schaeffer

A dissertation submitted to the Graduate Faculty in
Psychology in partial fulfillment of the requirements
for the degree of Doctor of Philosophy, The City
University of New York.

1983

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This manuscript has been read and accepted for the Graduate Faculty in Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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Abstract

PEER BEHAVIOR, CAREGIVER-DIRECTED BEHAVIOR, AND MOTHER-CHILD
INTERACTION IN MALTREATED CHILDREN

by

Stephanie Schaeffer

This study explored the effects of child maltreatment on young children's social interactions with their mothers, caregivers, and peers. Twenty-six children ranging in age from 8-32 months who attended the same daycare center were observed in their playrooms; 12 had been maltreated by their mothers, while 14 children had no history of abuse or neglect. A variety of proximal, distal, affective, and play behaviors were recorded in four types of social situations: (1) departure, when the mother dropped her child off at the center; (2) separation, immediately following mother's leaving; (3) reunion, when the mother returned to pick her child up; and (4) free play, which occurred throughout the day. Three episodes each of departure, separation, and reunion and a total of 60 minutes of free play were obtained for each subject. Maltreatment and age group differences in children's behaviors during all conditions, and in maternal behaviors during departure and reunion were examined.

There were marked differences in mother-child interaction as a function of maltreatment. Compared to control mothers, maltreating mothers displayed more negative and fewer positive responses to their children, maintained less proximal and verbal contact with them, greeted

them less in reunion, and said good-bye less often in departure. Maltreated children tended to respond to their mothers in kind. In departure, they were less likely than control children to maintain visual or proximal contact with their mothers, to say good-bye to them, or to express affect. In reunion, fewer maltreated children greeted, showed positive feelings toward, or touched their mothers.

In contrast, very few differences in children's responses to peers or caregivers were found to be associated with maternal maltreatment. In overall sociability and in most of their behaviors directed to peers and caregivers in all conditions, maltreated children did not differ significantly from controls. However, maltreated children showed more aggression to peers immediately after separating from their mothers, and engaged in less direct physical contact with caregivers throughout the day.

The implications of these results for alternative models of the development of social relations, and for intervention efforts focusing on the maltreated child were discussed.

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CHAPTER I

INTRODUCTION

THE DEVELOPMENT OF SOCIAL RELATIONS

The developmental study of the young child's relationship with the social environment has typically been centered in the study of the mother-child dyad. Within the context of this relationship, researchers have explored the origins and significance of, as well as changes in, attachment behaviors, separation protest, stranger anxiety, and other related phenomena. Generally, the picture that has emerged is one of early developing and selective responsiveness to social stimuli, so that by the end of the first year of life, the infant shows differential behavior toward various persons in the world. In the presence of an attachment figure, most often the mother, the infant exhibits positive affectional and proximity-maintaining responses. On separation from the mother, the infant frequently reacts with protest and distress, as well as with efforts to regain contact. It has been argued that the attachment relationship has implications for development in other areas as well, among them the infant's exploratory behavior (e.g., Rheingold, 1969), intellectual functioning (e.g., Ainsworth, Blehar, Waters, & Wall, 1978; Clarke-Stewart, 1973), ego development (e.g., Arend, Gove, & Sroufe, 1979; Sroufe, 1979), and social competence (e.g., Bronson, 1974; Waters, Wippman, & Sroufe, 1979). This work underscores the crucial significance of the mother-child tie in human development.

However, the almost exclusive focus on the mother-child relationship has contributed to a biased picture of the young child and its social milieu (Lamb, 1979; Lewis, Young, Brooks, & Michalson, 1975). It has allowed us to ignore the rich network of social relations into which the infant is born and must adapt. Although under usual circumstances, the mother (or primary caregiver) is one of the first persons with whom the infant forms an intimate, meaningful relationship, she is by no means the only such person. Even during the earliest period in life, other affectional relationships develop that vary in quality, intensity, and function from each other and from the mother-child relationship. In fact, multiple attachments appear to be the rule rather than the exception (Rutter, 1979), occurring with fathers (e.g., Kotelchuck, 1973; Lamb, 1977), siblings (e.g., Samuels, 1980), grandparents (e.g., Schultz, 1980), caregivers in nurseries (e.g., Cummings, 1980), and peers (e.g., Lewis et al., 1975). But much less is known about these other systems of relationship. For one, the human peer system in infancy and early childhood has received scant attention since the 1930's. Yet, as Eckerman, Whatley, and Kutz (1975) concluded from their research, "interactions with peers may contribute in their own right to early social development" (p. 42).

The assumption is made that without an adequate mother-infant bond, other social relationships are impossible or markedly impaired. Bowlby (1969), Spitz (1965), psychoanalytic theorists (e.g., Fenichel, 1945; Freud, 1938), and others have suggested that deprivation of the opportunity to form an attachment with the mother, or early distortion of that tie once it is formed, produces psychopathology and an inability to form later meaningful attachments with other social objects. This theoretical orientation credits the primacy and intensity of the mother-

child relationship as the source of, and prototype for, all subsequent social behavior, including peer relationships. An alternative formulation rejects the mother-infant relationship as the necessary and sufficient condition for all later social behavior (Harlow, 1966; Lewis et al., 1975). Here, the mother-child and peer-child relationships are seen as separate but parallel systems which may or may not share common elements. Such a view minimizes the far-reaching effects of an unsatisfactory mother-child bond on relationships with other social objects. The differences embodied in these formulations underscore the continuing need for research concerning the interdependence of early social experiences.

THEORETICAL APPROACHES

Two models of the development of early social relationships have been proposed (Lewis, 1979, 1982). The most frequently adopted is the epigenetic (Lewis, 1979) or precursor (Vandell, 1980) view, which posits a direct relationship from one set of social interactions to the next in a relatively fixed sequence. An opposing approach, which Lewis has termed the social network model, argues that different systems of relationship develop concurrently to satisfy differential social needs. We now turn to a detailed consideration of these models.

Epigenetic Model

In this view, the mother-child relationship, as the initial and primary interpersonal experience to which the infant must adapt, shapes subsequent social relations with other adults and with children as well. The mechanisms for the transmission of these effects are direct (e.g., through response generalization) and/or indirect, through the development

of a variety of hypothesized mediating variables (e.g., traits). Long a hallmark of psychoanalytic thinking*, this position is more recently articulated in Bowlby's theory of attachment (1958, 1969, 1973). Here, the infant's characteristic interactions with a specific caregiving figure (usually the mother) lay the groundwork for the growth of a special affectional bond uniting the two in a relationship which is enduring and formative. Drawing upon ethological principles and control systems theory, Bowlby (1969) conceptualizes attachment as the product of species-specific behavioral systems whose predictable outcome is increasing or maintaining contact with the mother, and whose biological function is protecting the infant from danger. Five classes of behavior describe full-blown attachment in the infant over 7 months of age:

- a) behavior, including greeting, that initiates interaction with the mother;
- b) behavior in response to mother's interactional initiatives and that maintains interaction;
- c) behavior aimed to avoid separations;
- d) exploratory behavior, especially how it is oriented with reference to the mother;
- and e) withdrawal (fear) behavior, also especially how it is oriented with reference to the mother.

Stress of any kind is thought to heighten the infant's orientation to the attachment figure, eliciting attachment behaviors to the exclusion of other competing response systems, especially exploration and play.

Because virtually all infants become attached to a significant other, except under the most extreme conditions, it is the quality of

*Freud, in 1938, wrote that the mother is the infant's first object, "unique, without parallel, established unalterably for a whole lifetime as the first and strongest love-object and as the prototype for all later love relations" (p. 188).

this relationship that is thought to have important developmental sequelae. Through her research, Ainsworth (e.g., Ainsworth, 1972; Ainsworth et al., 1978) has concluded that one dimension which meaningfully describes the quality of an attachment is its relative security. Theoretically defined in terms of the balance between the antithetical systems of attachment and exploration, the security of the attachment bond is demonstrated in the infant's ability a) to use the mother-figure as a base for exploration in free play, b) to derive comfort from her when upset so that exploration can be resumed, and c) to utilize her assistance most adaptively (i.e., without undue dependence or avoidance). Guided by these notions, Ainsworth has identified three general patterns of attachment by clustering maternally-directed responses during separation, and especially, reunion episodes of a structured laboratory procedure she developed known as the "Strange Situation". In this cumulative-stress procedure, securely attached children are generally more active in seeking proximity and contact with mothers during reunion, and more easily able to recover from separation distress and return to play/exploration. On the other hand, insecurely attached children are either avoidant (ignore or reject contact with mothers) or ambivalent (both seek and resist maternal contact) during reunion.

These attachment patterns have been linked theoretically to various behavioral outcomes in the child. Because of the relationship between attachment and exploration, secure infants who have less difficulty in separating and getting comfort from mothers, should consequently be more willing to involve themselves in other aspects of their environment. This encourages the growth of competence and mastery in dealing with both objects and people. Thus, securely attached infants

should be more advanced cognitively, and more sociable and effective in their peer relations. In contrast, it is argued that a poor relationship with the mother is a potent source of stress for her child, strongly activating attachment-related behaviors. Thus, less secure children should be preoccupied with their mothers to an extent that restricts exploratory behavior and interaction with other partners. In general, their intellectual and social functioning should suffer by comparison. Sroufe and Waters (1977) predict that "avoidant babies might be expected to be self-isolates, while ambivalent babies, because of their lack of object skills, low self-esteem, and social hesitancy" (p. 1196) might also relate poorly to peers.

Recent research has attempted to provide empirical support for these conclusions. In the area of intellectual functioning, studies have shown a relationship between quality of attachment and cognitive development. Bell (1970) found that "mother permanence" preceded "object permanence" in securely but not insecurely attached infants. Ainsworth and her colleagues (1978) have shown that securely attached infants achieve higher developmental quotients in the first year of life and beyond. Matas, Arend, and Sroufe (1978) examined the performances of 2-year-olds, who had previously been assessed in Ainsworth's Strange Situation, on a range of cognitive tests. Compared to their anxiously attached counterparts, secure children showed more symbolic play, and more persistence, enthusiasm, and task-orientation on structured, tool-using problems. With their sample, however, no significant differences in overall mental development (as measured by the Bayley Scales) were obtained. Stevenson and Lamb (1979) found that infants who were judged sociable and friendly with mothers and strange adults scored higher on standardized tests of cognitive development than infants

who were socially withdrawn. In a longitudinal study of attachment and competence, Waters et al. (1979) reported that securely attached 3-year-olds showed more self-direction, intellectual curiosity and persistence, and awareness of their surroundings than their anxiously attached agemates. Finally, a study by Arend et al. (1979) found a relationship between security of attachment at 18 months and measures of ego-control, ego-resiliency, and curiosity at 4 to 5 years of age.

However, research investigating the relationship between quality of attachment and infants' social behavior with others has yielded more equivocal findings. On one hand, Easterbrooks and Lamb (1979) report that more securely attached toddlers were generally more peer oriented in a free play situation where mothers and unfamiliar peers were present; they engaged in more peer interaction, of both a negative and positive type, spent more time near peers, and showed more competent forms of social behavior. Pastor (1981) also found that secure toddlers were more sociable and positively oriented toward both the mother and an unacquainted agemate in free play. Waters et al. (1979) related security of attachment measured at 15 months to Q-sort assessments of peer competence in preschool at 3½ years of age. They found that secure children were less socially withdrawn and hesitant, and more often active participants or leaders in the peer group. On the other hand, Maccoby and Feldman (1972) failed to find a relationship between preschoolers' peer behavior in nursery school and their previously measured attachment behaviors. Clarke-Stewart, Vander Stoep and Killian (1979), studying toddlers in semi-structured naturalistic settings, found that sociability to another child was not correlated with any of the maternal variables they examined, including mother-child interaction measures. In a recent study, Lieberman (1977) found that both the

quality of attachment and the amount of peer experience appeared to affect 3-year-olds' competence with peers, but in different ways. Secure attachment correlated with nonverbal measures of peer behavior (e.g., share, touch) while peer experience correlated with verbal measures (e.g., conversational exchanges and responsiveness). Lieberman concludes that "it is apparent that peers may exert a simultaneous influence on peer competence" (p. 1286). Her finding of a high positive correlation between secure attachment and peer experience confounds the issue further: it suggests that mothers who promote positive relations with their children also tend to provide the opportunity for peer interaction.

According to the epigenetic view, however, limited peer exposure is not considered a primary determinant of less adequate peer relations. Instead, antecedent maternal behaviors are responsible for the differential attachment patterns which, in turn, affect the infant's behaviors with peers. In her research, Ainsworth (e.g., 1972) has identified dimensions of maternal behavior associated with qualitative differences in attachment; these include her sensitivity vs. insensitivity, acceptance vs. rejection, and accessibility vs. neglect. Securely attached infants tended to have mothers who were responsive to their cues, accepting and emotionally positive and sensitive during interaction, and accessible, compared to mothers of anxiously attached infants. Main, Tolan and Tomasini (1979) were also interested in assessing the relationship between attachment patterns and maternal behavior. In their procedure, children were separated into securely, insecurely and intermediately attached groups on the basis of their reunion behaviors at 12 months of age. Later observation of mother-child free play behaviors (at 18 months) indicated that mothers of securely attached toddlers were more sensitive,

accepting, and affectively expressive than mothers of insecurely attached infants, who were more angry. Londerville and Main (1981) examined maternal training methods and found that mothers of secure infants were warmer in tone when giving commands and more gentle in physical interventions than were mothers of insecure infants.

Social-Network Model

In contrast to the epigenetic view, the mother-child relationship can be seen as one of many constituting a complex social network into which the infant is enmeshed from birth (Lewis, 1979, 1982; Lewis et al., 1975). In this formulation, different systems of relationship, while capable of mutual affect, remain relatively independent because of differences in underlying function. Lewis (1982) proposes that the social network can be defined schematically by a matrix in which different social objects (e.g., mother, father, peers, etc.) typically satisfy different social needs or functions (including protection, caregiving, nurturance, play, exploration/learning, affiliation, etc.). Out of the association of people and function comes the simultaneous, rather than sequential, development of varying types of relationships which affect different aspects of social functioning. Because parents serve different needs from peers, the social network model considers that difficulties in the mother-child relationship do not necessarily produce difficulties in the peer system, as long as the social matrix remains flexible (i.e., includes multiple objects and relationships). Although the cultural context largely determines the flexibility of the social network--the number and nature of the people and the functions they perform--the family unit is the source of considerable individual variation. In most homes the mother becomes a primary attachment figure by providing nurturance, comfort and security. But in isolated families where the child only

interacts with its mother in the first years of life, she is also called upon to play the role of playmate and friend. In families where other social partners are available, infants tend to form multiple relationships with distinct behavioral manifestations (for example, infants tend to play more with fathers than with mothers, Lamb, 1976). By age 3, children show that they have made connections between certain social objects and functions. Edwards and Lewis (1979) found that children prefer parents when they need help, agemates when they want to play, and older children for instruction.

The central importance of the peer system in the growth of social skills and competence has been recognized by Mead (1934), Harlow (e.g., 1966) and more recently, Lewis (e.g., 1975), and Hartup (1979), among others. Lewis et al. (1975) consider that "peers are not substitutes for infant-adult relationships, but rather are just as basic and maybe older in a phylogenetic sense" (p. 61) and just as vital for species survival. Work done in the last decade has established that infants in the first year of life are capable of complex and positive interactions with each other (e.g., Vincze, 1971; Eckerman & Whatley, 1977). Vandell, Wilson, and Buchanan (1980) reported that, even at 6 months of age, infant peers were able to engage in sequences where both participants acted socially, primarily by using vocalizations, touches, and smiles. Moreover, infants have been shown to prefer children to other social objects. Lewis and Brooks (1974) reported that infants as young as 7 months responded differentially to the approach of adult and child strangers, with an adult eliciting only negative responses, while a child elicited positive ones. Eckerman et al. (1975) placed pairs of mother-child dyads in a play setting so that each child could freely interact with his mother, the other adult female, the other child, or several toys. The results clearly

indicated that by age 2, social interaction exceeded solitary play and the partner chosen most often was the peer not the mother (or other adult). The research of Mueller and his associates (e.g., Mueller & DeStefano, 1974; Mueller & Rich, 1976) with 1-year-old boys interacting over a three month period, indicates that consistent peer contact is a significant factor in the development of interpersonal skills. Mueller and Lucas (1975) postulated a stage-related course through which initial "object-centered" encounters develop into true social interactions involving reciprocal and/or complementary responding. Howes (1980) also found that peer interaction becomes more complex as a function of increased experience with peers during play. Repeated peer contact also appears to encourage the growth of some form of friendship as early as the first year of life. In the research of Lewis et al. (1975) infants showed differential behavior to familiar and unfamiliar peers: "friends" engaged in more proximal contact, imitative behavior, offering and sharing, and positive affect when compared to infant strangers. Rubenstein and Howes (1976) noted the formation of a positive relationship among toddlers who were acquainted compared to unacquainted peers in the same age range. Certainly by nursery school age, children are involved in meaningful peer relationships (see Hartup, 1970). A recent study by Doyle, Connolly, and Rivest (1980) indicated that social play was more frequent, positive and successful peer-directed behavior more likely, and cognitive level of interactions more advanced, among pairs of familiar vs. unfamiliar 3-year-olds. In fact, clinical evidence demonstrates that, in the absence of adults early in life, peers may become primary attachment figures (Freud & Dann, 1951). Furthermore, Furman, Rake, and Hartup (1979) have reported that young children can act as "therapists", effectuating adequate peer behavior in socially withdrawn preschoolers.

There is ample evidence from studies of non-human primates that the peer system is crucial for the development and maintenance of all types of adult social behaviors (e.g., Harlow & Harlow, 1965; Goodall, 1971). Suomi and Harlow (1975) reported that the rhesus monkey infant, by its first month of life, begins to leave its mother for increasing periods of time. By 4 months of age, it displays extensive and complex social interaction patterns with agemates which clearly supercede its interaction with the mother; its predominant social activity is peer play. The importance of this peer play is demonstrated by the finding that monkeys reared with their mothers but deprived of any contact with agemates are unable to develop appropriate social repertoires. Not only do they fail to play interactively (or to establish affectional relationships) when finally exposed to peers, they are also inadequate in sexual, aggressive, and maternal behavior as adults. However, maternally deprived monkeys, raised alone (Rosenblum, 1961) or with surrogates (Suomi & Harlow, 1974) display normal patterns of social development if they are permitted as little as two hours of peer contact daily. Suomi and Harlow (1975) have concluded that the development of peer relationships is "the most important cog in the socialization process of rhesus monkeys...the primary vehicle for shaping genetically acquired potential into competent and adaptive social activity" (p. 176).

A third line of research indicating the importance of early peer relationships for social-emotional development is the study of group-reared infants. Faigin (1958) presents descriptive material gleaned from observations of 19- to 38-month-old children on Israeli kibbutzim. Peer group pressure was cited as a factor in such achievements as toilet-training and self-feeding, accomplished at an early age and without any

apparent emotional ill effects. New members were quickly socialized to the group norm of sharing by group pressure, and the children settled disputes among themselves as they arose. However, these findings must remain suggestive at this time, because as Marcus (1971) noted, there has been little carefully controlled experimentation conducted in this area.

In addition to recognizing the importance of peers in social development, the social network model holds that there are significant differences between the mother-child and peer-child systems. Recent research indicates some of the areas in which these differences may arise:

(1) The child receives different stimulation from parents and peers.

Eckerman et al. (1975) conclude, after comparing peer- and mother-directed interactions in a free play situation, that peer stimulation is distinct (and especially attractive) to the child because: a) peers are more responsive, persistent, and affectively involved in the child's play than adults; b) peers' actions and reactions may be more novel and interesting than adults'; and c) peers, because they are at the same developmental level, may act in ways that are more easily duplicated than adult behavior. Rubenstein and Howes (1976) stress the communality of interests and pleasures shared by young children "in such activities as jumping off a step 20 times and wearing pots as hats--activities which interest the most devoted mother to a far lesser extent" (p. 602).

(2) The child requires different skills to interact with agemates and adults. Mueller and DeStefano (1974) argue against the notion that the social skills learned while interacting with parents are useful in the peer milieu. They suggest that parent-child interaction does not involve equal partners--the adult controls, coordinates and molds the social exchange in a way immature peers cannot--so the skills learned with parents are not readily transferrable to peer interaction. Between

agemates, the responsibility for forming and maintaining a social interchange is jointly shared. The child must therefore become familiar with the properties that define peers (for example, that they are spontaneously active and self-directed) and with the rules necessary to regulate interaction with them (for example, that they do not respond to crying as mothers do). Mueller's data indicate the importance of direct peer experience for such learning. Repeated contacts allow young children to discover the contingencies between their own actions and those of their peers, and to develop effective strategies for affecting their partners' behavior. Lewis and Rosenalun (1975) suggest that peers provide the opportunity for "paced, slowly elaborating enlargements of communicative, aggressive, defensive, and cooperative skills" (p. 6). Peers, because they are more closely matched, are more likely partners for practicing developing capacities than are parents.

(3) The child directs different behaviors to mothers and peers. Durfee and Lee (1973), studying the interpersonal strategies of children from 6 to 12 months of age, concluded that contacts between agemates are "quite different from infant-adult interactions occurring during the same age period" (p. 9). Lewis et al. (1975) studied 18-month-old children in a free play situation with mothers, unfamiliar female adults (i.e., other mothers) and unfamiliar peers. Their results suggested the presence of two separate patterns of interaction occurring with mothers and with peers. Interactions with mothers were characterized by proximity-maintaining behaviors, while those with peers consisted of focused attention and visual regard. The infants touched their mothers and looked at their peers for equal amounts of time; there was more social interaction in the form of toy play (take and offer toys) between peers than between children and their mothers. The strange adults, on the other

hand, were almost ignored, receiving the least amount of both types of attention. Vandell (1980) also used a free play situation to observe infants with peers and mothers at 6, 9, and 12 months of age. She found that infants were significantly more likely to look at, and vocalize to, peers than mothers, but more likely to touch mothers than peers. There was no indication that children generalized behaviors to peers first shown with mothers or vice versa. In addition, certain variables, such as visit and sex effects, were found in relation to one system only (the mother-child). Mention has already been made of Lieberman's (1977) study of pre-schoolers, in which the mother-child relationship was related to nonverbal measures of peer competence, while peer experience was related to verbal measures. Finally, Rubenstein and Howes (1976) found that toddlers used peers more frequently than mothers as models for imitation; and further, children's competency with toys was enhanced by the presence of peers as opposed to mothers.

Although the social-network model argues against the notion that peer relations are determined by, or grow out of, the attachment relationship, nevertheless the mother-child dyad can affect the peer system. For example, there is evidence to suggest that mothers who are unable to promote secure attachment also curtail the opportunity for peer contact (Lieberman, 1977). The resultant lack of peer experience is demonstrated in the infant's inadequate peer behavior. That this may have sustained consequences for future peer relations is suggested by Mueller and Brenner's (1977) short-term longitudinal study which compared unacquainted vs. acquainted toddler playgroups. They found that, "besides being retarded in their peer relations, [unfamiliar] toddlers showed no tendency to catch up faster" (p. 858), remaining consistently behind in their ability to

sustain social interchanges. Poor mothering which also involves some degree of abusiveness may lead to a general fearfulness of social objects, which, in turn, inhibits the infant from making contact with peers and developing appropriate interpersonal skills. The epigenetic view would hold that such generalized fear is the natural consequence of an impaired attachment relationship where the mother can not be used as a "secure base"; the social-network model would suggest that generalization of fear is more likely to occur in infants who are socially isolated and not given the opportunity to discriminate among the behavior of multiple social objects. Although no research is directly available that speaks to this issue, studies of child maltreatment document the socially isolated existence of such families (e.g., Elmer, 1967; Young, 1964).

STATEMENT OF THE PROBLEM

Two views of the development of early social relationships have been articulated: an epigenetic and a social-network model. A fundamental difference between these models lies in their descriptions of the impact of the mother-infant relationship upon subsequent social relationships. This issue may be explored experimentally by examining the extent to which poor or inadequate mothering experiences affect the child's interactions with others, especially his peers. If the mother-infant relationship determines all others as the epigenetic model holds, then poor attachment should generally lead to poor peer relations. However, if these systems are functionally independent as the social-network model argues, then poor maternal relations need not produce impaired peer relations as long as early peer contact has been provided. Relatively little empirical validation for either of these formulations is currently available. In studies of the relationship between the quality of attach-

ment and later peer competence, the amount of the child's previous peer exposure has rarely been assessed. Recent findings underscore the need for such assessments by suggesting that mothers who fail to promote secure attachment also restrict the opportunity for peer contact (Lieberman, 1977). These circumstances raise the possibility that it is peer experience, rather than attachment security, which determines the adequacy of peer adjustment. The purpose of the present study is to explore this possibility by investigating the social consequences of a poor relationship with the mother in children who have had extensive peer contacts.

The use of a sample of children identified as maternally maltreated and who attend a full time daycare program provides the conditions to consider these issues. As a group, these children have inadequate maternal relationships and at the same time adequate peer experience. Their social behaviors can be compared to those of their normally reared classmates who have more positive relationships with their mothers. It should be emphasized that, for both the maltreated and control children, the amount of peer contact is similar and extensive. If the groups do not differ in their peer behavior, support for the social-network rather than the epigenetic model is provided.

In addition to the theoretical considerations outlined above, the present research addresses an important practical concern as well: the effectiveness of one type of experience, group care, in ameliorating the potentially harmful effects of parental maltreatment on children's social behavior. In this, our focus is centered on the child side of the mother-child equation, and on a method of intervention which affects the child's life directly. The demonstration that concurrent peer experience in the presence of a poor mother-child relationship can protect the child against subsequent poor peer relationships would provide support for such an

intervention program. Before turning to a detailed consideration of our study, a general review of the literature on child maltreatment is necessary.

A REVIEW OF MALTREATED CHILDREN

Theoretical Approaches

The bulk of research on child maltreatment has its theoretical underpinnings in one of three basic orientations: psychodynamic, sociological, or social learning. While all three approaches view child abuse and neglect as multiply determined, they differ substantially in causative emphasis and analysis. These orientations focus on parental factors. Having presented them, we will turn our attention to the child factors which are associated with maltreatment, and to the social relationships of these children.

Psychodynamic Model. Psychodynamic approaches locate the primary cause of child maltreatment in the personality disorders of abusive parents. Investigators have utilized a variety of clinical and standardized testing procedures to delineate those personality characteristics specifically implicated in abuse. The resulting lists of traits and typologies have tended to be general, inconclusive, and nondifferentiating. Abusing adults have been variously characterized as immature, impulsive, self-centered, hypersensitive, quick to react with poorly controlled aggression (Kempe, 1973); aimless, psychopathic, antisocial, hostile, passive, dependent, depressed (Young, 1964); subject to episodic outbursts of loss of control, reason, and judgment (Kaufman, 1962, as cited in Gil, 1970); and exhibiting a low threshold for frustration (Elmer, 1977).

However, recent evidence has indicated that fewer than 10% of child abusers can be diagnosed as mentally ill (Kempe, 1973), and further, that

the degree and range of personality disturbance found in abusing parents exist in nonabusing parents as well (Gil, 1970; Walters, 1975). The systematic search for personality attributes unique to child abusers has yielded, in fact, only one clear-cut conclusion, that "a general defect in character--from whatever source--is present in the abusing parent allowing aggressive impulses to be expressed too freely" (Spinetta & Rigler, 1972, pp. 300-301). Parke and Collmer (1975) question the tautological nature of these psychiatric explanations and "the usefulness of re-describing the abusive parent as being low in aggression control"; they go on to state that "relabeling is not a substitute for adequate explanation" (p. 520). Other criticisms of these studies refer to methodological considerations and include the lack of representative samples, the failure to use comparison groups for empirical validation, and the reliance on ex post facto analyses (Spinetta & Rigler, 1972).

The psychodynamic approach has been successful in identifying factors in parental histories and child-rearing beliefs that are associated with child maltreatment. There is overwhelming evidence that abusing parents were themselves subjected to abuse and neglect as children; in their comprehensive review of the literature, Spinetta and Rigler (1972) cite 22 studies confirming this finding. Parental histories show that physical maltreatment was frequently combined with emotional abuse running the gamut from severe deprivation or loss of mothering to excessive criticism and denigration (see, for example, McHenry, Girdany, & Elmer, 1963; Steele & Pollock, 1968; Young, 1964). Disagreement exists regarding the psychodynamic mechanisms responsible for the translation of these childhood experiences into child-abusing behaviors in adulthood. In general, however, explanations for abuse rely upon complex interrelationships among intrapsychic conflicts, defensive structure, and superego

functioning which, under stress, are "acted out" in aggression (see, for example, Galdston, 1965; Green, Gaines, & Sangrund, 1974). The result is what Kempe has termed "a cycle of abuse," where an aggressive pattern of parenting is repeated from one generation to the next.

Aggressive parenting behaviors are frequently supported by child-rearing attitudes. Many abusive parents consider physical punishment an appropriate and necessary disciplinary technique (Kempe & Kempe, 1978; Wasserman, 1967). In addition, many have inadequate knowledge of the behaviors and needs that are age-appropriate for their children (Galdston, 1965; Johnson & Morse, 1968) and hold unrealistic expectations for their performance (Steele & Pollock, 1968). Often coupled with misconceptions regarding development is a gross insensitivity to individually-expressed needs and desires of their offspring (Jacobs & Kent, 1977; Steele & Pollock, 1968). Several investigators have described a role reversal in abusing and neglecting relations in which the child is treated as an adult and expected to satisfy parental needs for nurturance and "good mothering" (see, for example, Blumberg, 1974; Galdston, 1965; Green et al., 1974; Steele & Pollock, 1968). Moreover, there may exist a general attitude of resentment and rejection toward the child's whole person, or feelings that the child is unlovable or bad (Kempe & Kempe, 1978; McHenry et al., 1963; Young, 1964). In some abusing families, one child is selected to be the main or exclusive victim of maltreatment; in most two-parent families, one parent is the active abuser or most obvious neglecter, while the other serves to condone the maltreatment by his or her passivity (Brown & Daniels, 1968; Kempe, Silverman, Steele, Droegemueller, & Silver, 1962).

Sociological Model. The sociological approach defines child maltreatment as a social problem caused by a combination of cultural and

socioeconomic factors. The use of force against children in America is seen as a widespread, socially sanctioned child-rearing practice embedded in a culture with a tradition of interpersonal violence (for fuller expositions see Bakan, 1971; Chase, 1975; Gil, 1970; Walters, 1975). As a consequence, child maltreatment exists on two levels in society: the institutional and the familial (Garbarino, 1977; Gil, 1970). The effects of institutional maltreatment have received much speculation but little direct exploration; it may well be that "society, as a whole, by permitting millions of children to grow up under conditions of severe deprivation" is the major abuser today (Gil, 1970, p. vii). On the familial level, studies clearly show that physical punishment is used by parents of all occupations against children of all ages in families at each social-class level (for a review of this research, see Parke & Collmer, 1975). According to the sociological view, what distinguishes the child abuser from the nonabuser is the excessive and inappropriate use of this culturally-acceptable disciplinary technique due, in large part, to environmental stresses that increase the strains and frustrations of daily living and weaken mechanisms of self-control (Gil, 1970). That these stress factors operate with greatest impact and rapidity on the lower socioeconomic classes is a long-held supposition, recently receiving substantial support from demographic studies of child abuse and neglect.

Gil (1970) concluded from a nationwide survey of nearly 13,000 reported abuse cases that child abuse was more likely to occur among low-income and minority groups. More recent studies have continued to document the link between poverty and abuse (e.g., Elmer, 1977; Garbarino & Crouter, 1978; National Academy of Sciences, 1976), calling into question the commonly advanced argument that biased reporting of cases accounts for this relationship. Other socioeconomic variables implicated in child

maltreatment include under- or unemployment (Galdston, 1965; Gil, 1970), low levels of education (Gil, 1970), and poor housing conditions (Light, 1973).

Demographic descriptions of abusing and neglecting adults suggest that mothers and younger parents are more likely to be the perpetrators of maltreatment (Gelles, 1975; Jacobs & Kent, 1977). In addition, some investigators report that abusive parents tend to show some deviation in social, behavioral, physical, or intellectual functioning prior to the abusive incident (Gil, 1970; Kempe & Kempe, 1978).

Specific aspects of family structure and organization seem to be particularly stressful and play a role in child maltreatment. Family size, as well as the spacing of children within the family, are associated with both abuse and neglect. Abusive families are more likely to be larger (Elmer, 1977; Young, 1964). Gil (1970) found that the proportion of families with four or more children was twice as high for his abusive sample as for the population in general, and conversely that the proportion of small families (one or two children) was much larger in the general population than in his sample. Moreover, families with children born in very close succession (Kempe et al., 1962) and families headed by females (Gil, 1970; Giovannoni & Billingsley, 1974) are more likely to be involved in maltreatment.

Internal characteristics of family functioning have been implicated in child maltreatment. Recurrent parental separation and reconciliation (Elmer, 1977; Young, 1964) and frequent disagreements over child-rearing and other issues (Jacobs & Kent, 1977) are common occurrences in abusing and neglecting homes. Moreover, decision-making power tends either to be concentrated in the hands of only one parent (Gelles, Straus, & Steinmetz, 1979) or to be avoided by both (Young, 1964). These families are often

disorganized with respect to household routines (Elmer, 1977) and suffer from chronic transience (Gil, 1970; Jacobs & Kent, 1977). In essence, they lead what Garbarino (1977) refers to as "lives out of control", created by a basic "asynchrony" or mismatch between reality demands and consequent coping strategies.

The relationship of the family unit to support systems in the environment (i.e., those systems that in some way support the parental function) has recently received attention from an ecological perspective as an important determinant of child maltreatment. Support systems fulfill a number of social functions which relate directly to child abuse: (1) they provide feedback to parents about themselves and their children and monitor levels of disturbance in parent-child relationships; (2) they supply whatever additional services and resources are necessary for the effective management of family life; and (3) they provide for the satisfaction and control of emotional needs and impulses in acceptable channels (Garbarino, 1977). Support systems operate through the establishment of large social networks which connect the smaller-network family to its environment.

Drawing on the well-established finding that abusing and neglecting families tend to be socially isolated, without community, church, club, group, friendship, or extended family ties (Elmer, 1967; Green et al., 1974; Young, 1964), several investigators have suggested that child maltreatment is a direct function of an inavailability, inadequacy, and underutilization of support systems which could ameliorate the effects of disruptive socioeconomic forces on the family (Bronfenbrenner, 1974). Research by Garbarino and his associates (Garbarino, 1976; Garbarino & Crouter, 1978) has provided evidence for this hypothesis; the addition of factors reflecting the presence of support systems in the environment

(for example, enrollment in daycare, stability of neighborhood) accounted for much more of the variance in rates of child maltreatment than economic indices alone. A study by Giovannoni and Billingsley (1974) on the extended family relationships of neglecting vs. adequate low-income mothers also bears on the issue of support systems in operation. They found that neglecting mothers had few, if any, contacts with relatives during the previous year, while adequate mothers had seen all their relatives during the same time span. The authors concluded that "relationships with extended kin were highly salient features of the lives of the women in this study, and when absent or impaired, a matter that impinged upon maternal adequacy" (p. 74). Further confirmation of the association between abuse and lack of support is provided by Green et al. (1974). Their sample of 60 abusive mothers complained of alienation from spouses and extended family members, and a corresponding acute lack of help with child rearing.

Social-Learning Model. From a social-learning approach, child maltreatment is conceptualized as a learned pattern of parent-child interaction defined as abusive or neglectful by the social context. Two features are stressed in this analysis: (1) because child maltreatment is viewed as learned behavior, it is explained by, and subject to, the same laws of learning that apply to other social behaviors; and (2) because child maltreatment is seen as a pattern of interaction, the roles of both parent and child in creating and maintaining conditions of abuse are stressed.

The well-supported finding that abusing and neglecting parents were themselves maltreated as children suggests that these parents are using the same techniques that their own parents used to control and care for them. A social-learning analysis indicates a number of factors that makes this outcome likely. Exposure to aggressive or neglecting models of

parenting in childhood is a powerful source for learning, through observation, patterns of abusive caretaking that may be utilized in adulthood. Extensive research on imitative learning in children has demonstrated that "mere observation of aggressive models, regardless of the quality of the model-child relationship, is a sufficient condition for producing imitative aggression in children" (Bandura & Huston, 1961, p. 317). Exposure to abusing models also serves an informative function by legitimizing and sanctioning the use of violence against children (for a review of aggressive modeling, see Stein & Freidrich, 1975). It is likely that in the absence of alternative child-rearing models, adults from abusive homes will repeat the only parenting model they know.

Apart from serving as role models for aggressive behavior, punitive and neglectful parents provide highly frustrating, often painful, experiences for their children. Observational and experimental research on aggression indicates that frustration and physical attack are potent elicitors of aggressive reactions in children (see Feshbach, 1970). Studies on parental punishment have consistently found a positive relationship between physical punishment and aggressive behavior in children (Feshbach, 1973). Moreover, aggression appears to have a negative effect on the production of empathic responses in children (Feshbach & Feshbach, 1969), which may in turn encourage increased aggressiveness. Longitudinal data point to the stability of aggressive behaviors over time, at least for males (e.g., Kagan & Moss, 1962), suggesting that aggressive children become aggressive adults.

Once established in the adult's behavioral repertoire, aggressive responses must compete with nonabusive responses designed to control children's behavior. But the use of force often gains ascendancy in the response hierarchy because it is reinforced by the cessation, if only

temporarily, of the child's aversive behavior. As Parke and Collmer note, "a number of studies (e.g., Davitz, 1952) have shown that, under conditions of stress and frustration, predominant responses are likely to be emitted; in short, the typical use of physically punitive responses in disciplinary contexts makes it more likely that these same types of response will be employed in anger-eliciting situations" (1975, p. 537).

Both sides of the parent-child equation have been implicated in the escalation of aggressive behavior to abusive levels. Experimental studies of punishment indicate that inconsistent administration of punishment tends to be ineffective in controlling children's present behaviors, and more importantly, may engender more resistance to behavioral extinction or inhibition in the future (Deur & Parke, 1970; Parke & Deur, 1972). Clinical studies of abusive families have noted the marked degree of inconsistency in parental disciplining (Elmer, 1977) and its "lack of corrective purpose" (Young, 1964, p. 181). Either alone, or paired with intermittent reinforcement, inconsistent punishment may serve to maintain or increase the child's aversive behaviors, and consequently, to intensify parental punitiveness. Patterson and Cobb (1971) describe a coercion process wherein the behavior of each member of a dyad is an aversive stimulus to the other, eliciting aversive responses designed to terminate the aversive stimulus, and ultimately creating a spiraling pattern of increasingly aversive interaction. For example, a whining child may instigate parental yelling, which in turn elicits tantrum behavior from the child, which consequently provokes parental hitting.

A study by Parke, Sawin, & Knelling (1974), as cited in Parke & Collmer (1975), indicates the importance of the child's reactions to discipline in determining his subsequent punishment. Adults were instructed to discipline, via a closed-circuit videotape, a misbehaving

child who then reacted in one of four ways: by ignoring the adult, making reparations, pleading with the adult, or defying the adult. Children who behaved defiantly received the harshest punishment following subsequent misbehavior, and children who behaved reparatively received the least.

Characteristics of the Maltreated Child

Age. The most severe cases of child abuse and neglect are seen in children under 3 years of age (Blumberg, 1974; Elmer, 1977; Galdston, 1965; Green, 1978; Kempe et al., 1962; Walters, 1975). Although maltreatment has been documented through adolescence (Gelles, Straus, & Steinmetz, 1979; Gil, 1970), one-half to two-thirds of reported cases involve children under 6 years of age (Gil, 1970; Johnson & Morse, 1968). Many factors have been linked to this finding. Evidence of maltreatment in younger children may be more obvious or medically serious due to the higher levels of physical and developmental vulnerability in early life. In addition the preverbal child is unable to provide information to others about his life experiences or to significantly alter, through his own initiatives, the amount of contact he has with maltreating adults. Finally, maltreating parents are particularly associated with daily living with younger children, whose "normal" behaviors can include sustained crying, feeding disruptions, demands for attention, toilet-training accidents, temper tantrums, irritability, and unreasoned disobedience (Blumberg, 1974; Kempe & Kempe, 1978; Weston, 1974). Exacerbated by socioeconomic, marital, or personal stresses, the frustrations inherent in raising young children may be potent elicitors of abusive reactions from parents.

Sex. In those studies where sex differences have been found, boys are more often reported to be targets of abuse than girls (Gelles et al.,

1979; Gil, 1970; Green, 1978). This may be due to the fact that boys 3 months or younger sleep considerably less, and cry and fuss significantly more than girls (Moss, 1967). Other sex differences in behavior appearing in the preschool years that may have impact on children's manageability and consequently on child maltreatment include differences in aggression and in compliance. Maccoby and Jacklin (1974) conclude that boys from as early as 2 years of age are more aggressive both physically and verbally, more likely to engage in bursts of strenuous physical activity, and less compliant to the demands and directions of adults than are girls. These behaviors may function directly as elicitors of parental violence or they may indirectly encourage child abuse by heightening parental stress and loss of control.

Birth History. The prenatal and neonatal histories of maltreated children suggest several factors that may contribute to child abuse and neglect. Although rates of illegitimacy do not appear to differentiate abused from nonabused children (Johnson & Morse, 1968), investigators agree that children resulting from unplanned or unwanted pregnancies are more likely to be maltreated (Blumberg, 1974; Gelles, 1973; Jacobs & Kent, 1977).

In addition, the incidence of prematurity found in samples of abused and neglected children, typically ranging from 22% to 30%, is significantly higher than the 7-8% average for the population at large (Elmer, 1977; Jacobs & Kent, 1977; Klein & Stern, 1971). Elmer (1977) reports that low-birth-weight infants are "known to be more difficult to care for than full-term babies" (p. 49) for a number of reasons: because of immature digestive systems, they eat less and must be fed more frequently; and because of immature nervous systems, they tend to be more irritable and to cry more often. That excessive crying may be extremely stressful to

adults is suggested by Frodip, Lamb, Leavitt, and Donovan (1978). They presented parents with 6-minute videotapes of crying and smiling infants and found that infantile crying elicited significant increases in autonomic arousal and negative feelings such as anger, distress and discomfort in the adults. In addition to problems in management, low birth weight increases the likelihood of neonatal medical complications. Prematurity continues to be associated with the delayed development of intellectual, verbal, social, and physical skills and the increased likelihood of behavior problems such as hyperactivity through infancy and early childhood (Caputo & Mandell, 1970; Elmer, 1977).

Beside its effects on the appearance and behaviors of the neonate, prematurity has ramifications for the earliest interaction between mother and child because it necessitates extended periods of mother-infant separation. Evidence from both animal and human studies that early postpartum separation may indeed produce disturbances in the later development of parent-child attachment has been reported in a number of instances (Kennell, Gordon, & Klaus, 1970; Liefer, Lederman, Barnett, & Williams, 1972). After their review of research on the premature infant, Parke and Collmer (1975) conclude that "the burden, stress, and disappointment associated with the birth and care of a low birth weight infant could increase the probability of abuse" (p. 552).

Individual Differences. There is evidence from a variety of sources that the maltreated child is often developmentally or physically different from siblings and peers. It is unclear whether these differences are a significant cause, rather than largely the result, of child abuse and neglect. Gil (1970) reported that during the year preceding the abusive incident, 29% of abused children showed disturbances in social interaction and general functioning, 14% displayed physical handicaps of some degree,

and an additional 8% revealed impairments in intellectual functioning. Similarly, Johnson and Morse (1968) reported that 70% of their samples of abused, inner-city children had shown physical or developmental deviation prior to their injury. These findings strongly suggest that deviation in the child is a precursor to maltreatment; and in some cases, where congenital defects, deformities, or other inborn impairments are present from birth, it is clearly so (Blumberg, 1974; Green et al., 1974). However, in most instances, the etiology of the deviation is not obvious, and most probably involves the interplay of both hereditary and environmental factors.

Research on neonates and infants indicates that, even within normal limits, there are large hereditary individual differences in such temperamental qualities as activity level, adaptability, irritability, soothability, and preferred modes of interaction (e.g., Carey & McDevitt, 1978; Korner, 1974; Moss, 1967). It appears that those infants who are more difficult to care for--who are colicky, irritable, demanding, poor feeders, resistive to physical contact, less adaptable, and hard to satisfy--run an increased risk of being maltreated (Blumberg, 1974; Green et al., 1974). The relationship between difficulty in management and child maltreatment continues through childhood, with extremely active, restless, and aggressive children reported to be more vulnerable to abuse and neglect (Dubanoski, Evans, & Higuchi, 1978; Green et al., 1974; Johnson & Morse, 1968). Several investigators (e.g., Elmer, 1977; Green et al., 1974) conclude that certain otherwise normal characteristics of the child seem to hold special significance and triggering potential for the abusive parent; these characteristics include biologically-determined attributes (e.g., the sex or ordinal position of the child), particular age-appropriate behaviors (e.g., sexual behavior), selected

physical traits (e.g., facial resemblance to the parent), or physical unattractiveness.

Regardless of the source of the behaviors, abused and neglected children have been described as whining, fussy, listless, chronically crying, restless, demanding, stubborn, resistive, unresponsive, pallid, sickly, emaciated, panicky, fearful, and unsmiling (Johnson & Morse, 1968); apathetic, unappealing (Galdston, 1965); particularly prone to develop violent behavior as a character trait (Galdston, 1971); shy, hypervigilant, either highly compliant or extremely aggressive, untrusting, withdrawn, severely depressed, negative, hyperactive (Kempe & Kempe, 1978); frequently sad, dejected, self-deprecatory, self-destructive, low in self-esteem and frustration tolerance, engaging in provocative, belligerent, and limit-testing behavior which elicits beatings and punishment from parents, other adults, and peers (Green, 1978); and anxious, hostile, and low in empathy (Feshbach, 1973). In addition, Kempe and Kempe (1978) estimate that 20% to 50% of abused children are significantly neurologically damaged so that they lag behind age mates in language development and the attainment of physical skills. Other investigators have noted the higher incidence of mental retardation, cognitive deficits, and aberrant or defective speech patterns (Elmer, 1977; Green, 1978). By school age, the number of abused and neglected children placed in grades below their age level, in mental institutions, and in special educational classes for the learning disabled, emotionally disturbed, or mentally retarded is noteworthy (Gil, 1970; Green, 1978; Kline, 1977).

However, the same serious methodological criticisms that can be made of the research aimed at isolating the distinctive personality characteristics of abusive parents apply with even greater strength to these studies of maltreated children. The lack of representative samples and the failure

to use control or comparison groups or to conduct statistical tests of significance on observed differences render the reported findings tentative and inconclusive; when, in fact, research is properly designed, the results are often remarkably at variance with the majority of the literature. Elmer (1977), in a follow-up study of traumatized children, compared abused subjects with a comparison group of accident children and with a control group of subjects with no history of trauma; subjects were matched with regard to age, sex, race, socioeconomic class, language development, self-concept, intellectual functioning, and various personality characteristics. She found that "when pertinent demographic variables were taken into account, the abused children differed significantly from their peers only in weight and in some measures of impulsivity. Each of these differences was in relation to either [control or accident children, respectively], not to both groups, a fact that tends to weaken the results" (p. 107). The majority of all the children studied showed some degree of disturbance, but this was evenly distributed across the groups. Thus, 70% of the entire sample experienced speech problems and 39% were doing poorly in school; in addition, all the children looked sad, fearful, and anxious. The author concluded that "lower-class membership, with the stresses produced by grossly insufficient income, poor housing, poor health, etc., may be as potent as abuse for the subsequent development of the child" (pp. 108-109).

Maltreatment and Social Interaction

There has been little direct experimental analysis of the social interactions of maltreated children with either parents or peers, but the several studies that have made controlled comparisons deserve special attention. A recent study by Hyman and Parr (1978) found significant differences in the interactive patterns of abused and nonabused mother-

child dyads. The authors compared 12 abused children ranging in age from 6 to 24 months to a control group pair-matched for sex, age, ordinal position, parental age, home accommodations, and ethnic group in the Strange Situation procedure. Abused children generally showed a greater tendency to become and remain distressed in both separation and reunion episodes and to decrease their toy play and vocalization compared to their control counterparts; such behavior is indicative of anxious attachment. Abusing mothers were less contingently responsive to their infants than were control mothers, but showed few other behavioral differences.

Burgess and Conger (1978) observed 17 abusive, 17 neglecting, and 19 control families matched on pertinent demographic variables while performing experimentally created tasks in their homes. The results indicated that abusive and neglecting families differed significantly in patterns of interaction from control families, these differences largely determined by maternal behaviors. Overall, neglecting parents were the most negative and least positive in their family interactions across the three groups; abusive parents, compared with controls, had less contact both physically and verbally with family members and relatively more aversive interactions. The behaviors of mothers were particularly significant. Although their rates of physical and verbal responding to their children were similar, neglecting mothers directed substantially more negative, and less positive, contacts to their children than did control mothers. Abusing mothers, on the other hand, had less verbal, as well as less positive, interactions with their children than did controls. Maltreated children responded to their parents in kind, engaging in less verbal and physical interaction, especially with mothers. However, contrary to the authors' expectations, no remarkable differences

were found among the children from the three family types (median age = 6.5 years). Patterns of interaction between siblings did not differ over the three family types, nor did interactions between spouses. These data suggest that child maltreatment affects parent-child behaviors directly but may not disturb the interactions of other family members.

Systematic information concerning the peer interactions of abused and neglected children is almost nonexistent; available findings are clinically-based, descriptive in nature, and largely anecdotal (see, for example, Galdston, 1971; Green, 1978). However, a controlled investigation by George and Main (1979) compared the social interactions among abused toddlers in special daycare centers with those occurring among nonabused controls attending other centers. Although both groups approached peers equally frequently, abused children generally showed more ambivalent and aggressive behaviors to other children. Group differences were even more pronounced for caregiver-directed behaviors. These results are quite different from the findings of Seay, Alexander, and Harlow (1964). They compared the peer behaviors of normal, ferally-reared monkeys with those of monkeys raised by mothers who subjected them to life-threatening levels of maltreatment. In general, the infant-infant social interactions were remarkably similar in the abused and normal groups, with both groups developing and maintaining effective contact and play patterns. The authors concluded that "inadequate or abusive mothering was a variable of little importance in the long-term development of the infant-infant social interactions" (p. 351).

The review indicates several important factors which can be summarized as follows: (1) economically disadvantaged children are more maltreated than those from higher social classes; (2) maltreated children are more likely to have some individual difference which marks them off from other

children--for example, they are premature; (3) maltreating parents were likely themselves to have been maltreated; and (4) maltreatment impairs the relationship between parent and child.

What is needed in addition to the work already undertaken is a study of the patterns of social behavior among maltreated children and their parents and the consequences of that maltreatment in terms of the child's other social relations. In the present study, such an analysis was undertaken.

THE NATURALISTIC STUDY OF CHILDREN'S BEHAVIOR

Much of the research in early social development makes use of experimentally-contrived situations in laboratory settings. But such procedures may severely restrict the generalizability of any conclusions drawn. Therefore, it was our intent to study children's social behaviors under conditions of greater ecological validity, in terms of both procedures and setting. We turn to a consideration of the general methodological issues which apply to the present research.

The Mother-Child Relationship

Despite the fact that most studies of attachment have been based on ethological conceptions, Ragozin (1980) notes that "none employed a central method of ethology: systematic, naturalistic observation of behavior" (p. 409). In general, three types of situations have been used to investigate the attachment relationship: (1) a free play situation in which no restriction is placed on the child's behavior while the mother's behavior is experimentally structured; (2) a separation situation where the mother leaves her child, usually abruptly and without warning; and (3) a reunion situation when the mother returns. A major methodological problem encountered in all these situations is the use of the laboratory setting.

There are suggestions that the novelty inherent in the laboratory may seriously affect the child's behavior and distort the meaning of results. For example, Clarke-Stewart (1973) and Rinkoff and Corter (1980) found that proximity-seeking and vocal distress were more likely to occur in the laboratory than in the home. Ross, Kotelchuck, Kagan and Zelazo (1975) also reported that separation protest was more intense, and play behavior more disturbed, following maternal separation in the laboratory than at home. Such findings have led many investigators to question the extent to which results obtained in artificial contexts can be generalized to behavior in real-life settings (e.g., Belsky & Steinberg, 1978; Bronfenbrenner, 1977; Lewis, 1973; Riegel, 1975).

In addition to the general issue of setting, all these situations incorporate procedural features which are problematic. To begin with, the mother's behavior is typically restricted in ways that may make her seem strange to her child; she is instructed, for example, not to initiate contact with her child (e.g., Coates, Anderson & Hartup, 1972), or to engage in particular behaviors in the playroom (e.g., Ainsworth & Wittig, 1969). During separation and reunion episodes, the child may be further confused and distressed by the repeated, closely spaced, and stilted exits and entrances of the mother as called for by the design of the study (e.g., in Ainsworth's "Strange Situation" paradigm). In all these conditions, the child is faced with departures from normal behavior patterns on the part of the mother. Thus, the child's observed reactions may be determined not so much by the experience of maternal separation or reunion as by the discrepancy between the mother's usual behavior and her experimentally assigned behavior. A recent study by Ragozin (1978) found that children's behavior in the Strange Situation procedure were not related to their behaviors in analogous separation and reunion situations which

occurred in their daycare centers. Maccoby and Feldman (1972) also found that children who interacted extensively with their mothers in a natural setting (i.e., nursery school) were not the same children who showed frequent attachment behavior under laboratory conditions.

Related to these considerations is the more specific distinction between departure and separation. Weinraub and Lewis (1974) have shown that the child's behavior as the mother leaves (departure) is unrelated to his behavior once the mother is gone (separation). They suggest that what is commonly referred to in the literature as separation may in fact consist of two different conditions. The distinction between departure (mother present) and separation (mother absent) has been maintained in the present research.

An appreciation of the influence exerted by situational variables and the effect of novelty on children's behavior led to the decision to study mother-child interaction (1) in a more natural and familiar context than a laboratory and (2) in departure, separation, and reunion situations which the child experiences as part of his normal day, and which therefore have greater ecological validity. For these purposes, the daycare center is an almost ideal setting. For the children who attend them, daycare centers are familiar environments where mothers' leaving and returning are daily routines. Studies indicate that, following a period of adjustment, daycare is not a stressful environment for young children (e.g., Rubenstein & Howes, 1976; Schwarz, Krolick, & Strickland, 1973), and does not appear to have adverse effects on the development of mother attachment, even when begun in infancy (e.g., Cummings, 1980; Moskowitz, Schwarz, & Corsini, 1977; Portnoy & Simmons, 1978; Ragozin, 1980; Roopnarine & Lamb, 1978).

In the present study, a naturally occurring separation took place

when the mother dropped her child off at the center in the morning (departure) and was no longer present (separation). Similarly, a natural reunion occurred when the mother returned to the center to pick her child up at the end of the day (reunion). While maintaining their salient features, these conditions differ from traditional laboratory situations in a number of important ways. First, daycare-based departures and reunions were separated by a full day; the targeted child was never left alone in a room; and maternal behavior was not experimentally manipulated in any way. These procedures allowed for the assessment of children's separation and reunion behaviors which were less contaminated by extraneous stress factors. Second, the adult stranger with whom the child is left in laboratory procedures was replaced by the familiar caregiver in the daycare setting. It was thus possible to study children's responses to adults other than their mothers without the issue of "strangeness" confounding results. Finally, in the present research, different types of social partners were present in the playroom at the same time. This special feature of the daycare setting permitted a comparison of the concurrent social relations of young children with their mothers, caregivers and peers.

Peer Relationships

Most of the recent investigations into early peer interaction have either studied (1) two- to four-member gatherings of home-reared children brought to the laboratory to interact for a specified amount of time, usually up to one hour (Bronson, 1974; Eckerman et al., 1975); or (2) experimentally constructed play groups of about five children who play together over a period of several weeks or months (e.g., Durfee & Lee, 1973; Mueller & DeStefano, 1974). Although it uses more refined method-

ology than earlier studies, a major problem with much of this research lies in its use of the laboratory setting. It has already been demonstrated that situational factors have a significant effect on mother-infant interaction, such that behavioral outcomes found in the laboratory have not been duplicated in the home or daycare setting. It is likely that situational factors affect peer interaction in much the same way; hence the need to study young children in a more natural environment than a laboratory. A recent study by Jeffers and Lore (1979) found that young children were more effective in eliciting interaction with a playmate and engaged in more positive and aggressive peer behaviors when at home than in unfamiliar settings.

Another biasing factor is the use of home-reared (often first-born) infant samples. If these children have had little peer interaction (and Lewis et al., 1975, discovered that fewer than 20% of the infants they studied under 18 months of age regularly played with peers), then their behavior in these studies cannot properly represent infant competency with peers.

A further criticism of infant peer research is the failure to make a distinction between infant strangers and infant friends. Many of the studies reported have made use of peers who are strangers to the subject. In these experiments, the assumption is made that infants react in the same manner to familiar and unfamiliar peers, a notion contradicted by recent research (Lewis et al., 1975; Mueller & Rich, 1976). Some studies compare the interaction of unacquainted peers with mother-infant interaction; such comparisons are clearly confounded by the degree of familiarity. If peer interaction is to be considered comparable to mother-child interaction, the relative amounts of time spent with the peer and with the mother must be weighed.

Finally, some of this research has examined peer interaction when mothers are present in the playroom. However, few studies have directly investigated the effects of mothers on the peer behavior of very young children. Maccoby and Feldman (1972) found that on mother-present days, preschoolers engaged in slightly (but not significantly) less peer interaction than on mother-absent days. However, Mueller and DeStefano's (1974) work with toddler playgroups led them to state that "time and again we were impressed with how disruptive adult behavior was of the emerging, but still unstable peer exchanges" (p. 15). Since recent evidence shows that the presence of peers affects toddlers' behaviors to mothers (Rubenstein & Howes, 1976), it is possible that the presence of mothers affects children's behaviors with peers.

In consideration of the issues raised above, the present research studied the peer behavior of young children in the context of a full-time daycare center. In addition to being familiar and natural environments for the children who attend them, daycare centers provide infants with the opportunity to interact with peers on a regular basis without their mothers. In order to ensure familiarization with the caregivers and peer group, and adjustment to the center's routines, children were observed only after prior attendance of at least two months. Children's naturally occurring behaviors were sampled at intervals throughout the day during free and structured play.

CHAPTER II

METHOD

SUBJECTS

The 26 children who served as subjects in the present study attended a full-day daycare center in Trenton, New Jersey. Since eligibility for this urban center was based upon economic need as defined by Title XX of the Federal Social Security Act, all subjects came from families in the lower socioeconomic categories who lived in the immediate vicinity of the center. Most of the children (88%) were from minority groups, none were physically disabled, and all were living with their natural mothers. This was the first daycare experience for all of the children.

Twelve of the children (46% of the sample) had been identified by the New Jersey Division of Youth and Family Services as maltreated and in need of daycare placement. For the present sample, this assignment was based largely on the documentation of chronic and severe maternal neglect. Although some of these children also experienced frequent or inappropriate physical punishment, the occurrence of the most extreme forms of physical abuse had not been established. The 14 children who served as the control group (54% of the sample) had no reported history of either abuse or neglect; their mothers had voluntarily enrolled them in daycare.

The children in both groups ranged in age from 8 to 32 months. At the center, they were separated into two classes on the basis of age: those children under 18 months were in the infant room (N = 10; Mean Age = 12.7), while those over 18 months were in the toddler room (N = 16; Mean

Age = 26.0). Both rooms were large, modern, and equipped with developmentally appropriate toys and furnishings. Three female caregivers staffed each room at any given time; each had received special training in early childhood education and most were minority group members. The child to caregiver ratio was about 1:3 in the infant room, and about 1:5 in the toddler room. Table 1 presents the number of children in each of the groups based on maltreatment and age classification.

A check was made for differences between the maltreated and control groups on a number of salient variables; these are also presented in Table 1. In terms of child-related characteristics, the groups did not differ significantly in the mean age of their members. Since the daycare center was an ongoing facility, many of the children had been enrolled for considerably longer periods of time than the minimum criterion of two months' attendance required by the study. The groups were not found to differ in the mean length of time members attended daycare. There was also no significant difference in the sex composition of the groups. For this reason, and because preliminary examination revealed no major sex differences in the behaviors under study, the data from both sexes were combined for all analyses. Finally, the percentage of maltreated and control children with siblings at home was not found to differ significantly. The maltreated group averaged 2 children per family, the control group 1.86.

Maternal characteristics of interest are presented in Table 2. No significant differences were found in the percentage of maltreating and control mothers who were over 21 years, who were married, whose family income was at or below the poverty level, and who worked outside the home. Thus, except for their maltreatment histories, the groups were quite similar.

TABLE 1
Sample Characteristics

Part A: Number of Subjects by Group			
<u>Group</u>	<u>Control</u>	<u>Maltreated</u>	<u>Total</u>
Younger	6	4	10
Older	8	8	16
Total	14	12	26

Part B: Children's Ages and Time in Center (in Months)							
<u>Group</u>		<u>Control</u>		<u>Maltreated</u>		<u>Total</u>	
		Age	Time	Age	Time	Age	Time
Younger	Mean	12.90	7.27	12.44	7.75	12.71	7.46
	SD	3.21	4.44	3.87	4.24	3.28	4.12
	Range	8-16	2-12	8-17	3-13	8-17	2-13
Older	Mean	25.30	12.38	26.78	13.71	26.04	13.04
	SD	4.24	9.90	3.97	10.56	4.27	10.12
	Range	20-31	2-28	19.5-32	2-27	19.5-32	2-28

Part C: Sex Composition of Groups				
<u>Group</u>		<u>Control</u>	<u>Maltreated</u>	<u>Total</u>
Younger	Male	4	2	6
	Female	2	2	4
Older	Male	4	3	7
	Female	4	5	9
Total	Male	8	5	13
	Female	6	7	13

Part D: Percentage of Children with Siblings			
<u>Group</u>	<u>Control</u>	<u>Maltreated</u>	<u>Total</u>
Younger	100	25	70
Older	63	63	63
Total	79	50	65

TABLE 2

Differences in Maternal Variables
(% of Mothers in Each Group)

Variables	Control	Maltreated	Chi Square	
Age over 21 years	86	67	1.25	N.S.
Married	36	33	.02	N.S.
Income at poverty level	71	83	.52	N.S.
Employed	36	25	.35	N.S.

PROCEDURE

All data were collected by observation of the children interacting with their mothers, caregivers, and peers in the context of the daycare center. Permission to observe her child in the classroom was obtained from each mother, and there were no mothers who refused to participate.

Frequent visits were made to the center by the observers before the data collection began. During these visits, mothers and caregivers were cautioned against interacting with observers, and such overtures by the children were gently ignored. During this period the scoring procedures were clarified and refined, and observers became proficient and reliable in their use.

To record observations, the observer positioned herself as unobtrusively as possible with the freedom to follow subjects when necessary. By the time actual data collection began, the children, mothers and caregivers were accustomed to the presence of the observers and were able to ignore them for the most part.

Four different conditions commonly used in the experimental study of young children's social relationships were investigated in the present research. Because of our interest in studying these conditions as they occurred naturally, certain modifications in the usual experimental paradigms were necessary. These conditions, as they occurred in the daycare center, were:

Departure Condition

Observation began with the entrance of each mother-child pair into the playroom and continued until the mother took her leave. Mothers received no special instructions about how to behave but were told to follow their usual routines. In this condition, mothers and their children had the opportunity to interact with each other as well as with the care-

givers and other children present. To ensure this, no mother-child dyad was observed when they were the first arrivals of the day. Both maternal and child behaviors were recorded during departure; these will be considered in detail later. For each target pair a total of three departure episodes on non-consecutive days were recorded. Data analyses were conducted on the sums of the values over the three episodes.

Separation Condition

Each child was subsequently observed for the 2-minute period immediately following maternal departure. In this period children were free to interact with caregivers and peers, to search for mothers, and to play with toys, etc. Observations from three separation episodes were recorded for each child.

Reunion Condition

A naturally occurring reunion took place when the mothers returned at the end of the day to pick up their children. Observation began when the target child first took notice of the mother, and ended when the pair left the playroom. Both maternal and child behaviors were recorded during reunion. A total of three reunion episodes, occurring on non-consecutive days, were obtained for each pair, with the additional constraint that departures and reunions were not observed on the same day for any pair.

Free Play Condition

Young children's social and nonsocial behaviors in the daycare center were recorded during the free play condition. Each subject was observed for twelve 5-minute periods for a total of 60 minutes. Observation periods were randomly assigned with the following constraints: for each child, data collection occurred across different days and different situations (e.g., unstructured play, play in teacher-organized activities,

etc.); and a target child was observed at its assigned time as long as the child was in a situation where social contact was possible, whether or not such contact actually occurred. This permitted an investigation of both the quantity and nature of spontaneous social behavior.

DATA COLLECTION

Observers were instructed to record the target subject's behaviors in as much detail as possible. For this purpose, time-locked behavioral check-sheets were constructed, which listed the specific behaviors applicable to each condition to be observed. The check-sheets were divided into six 10-second time periods, representing one minute per sheet. A portable tape recorder with an earplug attachment beeped off the 10-second intervals for the observer.

Behaviors were scored as they occurred rather than following a discrete observation period. Each instance of observed behavior was recorded either by a check to designate its occurrence or by a symbol to specify its social referent, "p" for peer, "m" for mother, and "c" for caregiver (for example, "p" in "touch" row when child touches peer). Behaviors not specifically listed on the sheet were noted in a space so designated. More than one kind of response could be scored (e.g., smile and touch peer) in each 10-second period, but only one instance of a given behavior could be recorded for each period.

Using this procedure, about 30 child behaviors and 20 maternal behaviors were distinguished and recorded. For each condition, composite categories of behavior were created for subsequent data analyses, since others have found these broad categories more useful than single behaviors (Coates & Lewis, 1980; Vandell, 1979). Table 3 lists the behaviors shown by children in each of the four conditions and the way they were

clustered into categories; Table 4 presents this information for maternal behaviors in departure and reunion. Definitions of all behaviors and check sheets for each condition are provided in the Appendix.

DATA ANALYSES

The data from each condition were subjected to two major kinds of analysis. In the first, the unit of measurement was the number of 10-second periods in which a given behavior occurred summing over episodes. After initial frequency counts were computed for each behavior, composite categories were created by combining the frequencies of related behaviors. As indicated in Tables 3 and 4, these categories varied in the number of constituent behaviors, from one (for example, in Stay Near, Look, etc.) to four or more (for example, in Positive Behavior, etc.). It was possible for individual behaviors of the same category to occur within the same 10-second period and for each to be scored in that interval. As a result, the frequencies of categories with multiple variables may have been overestimated relative to single variable categories. While this limited the extent to which different categories of behavior could be compared to each other, it did not substantially affect the statistical analysis of behavioral differences between groups of children (or mothers). To assess the effects of maternal maltreatment and children's age on the dependent variables, univariate analyses of variance were performed on individual behaviors and on categories of behavior, and multivariate analyses of variance were conducted over all behavioral categories.

A second type of analysis was done using the number of children (or mothers) who showed a given behavior over episodes of each condition.

TABLE 3

Part A: Children's Behaviors Observed During Departure and Reunion

<u>Category</u>	<u>Behaviors</u>
Stay Near	stay near
Physical Contact	touch; hold; hold hands; sit lap
Hug/Kiss	hug; kiss
Look	look at
Vocalize	vocalize; request help
Play With	play with
Farewell	wave; say bye; follow mother
Greet	greet; lift arms; clap; call mother
Positive Affect	smile/laugh
Negative Affect	fret; cry; protest/anger
Movement	gross motor activity (i.e., crawling, riding)
Toy Play	play w/object

Part B: Children's Behaviors During Separation and Free Play

<u>Category</u>	<u>Behaviors</u>
Stay Near	stay near
Physical Contact	touch; hold hands; lie/lean/sit lap
Hug/Kiss	hug; kiss
Look	look at
Vocalize	vocalize to
Positive Behavior	Play with; imitate; follow; offer; accept; share; show
Negative Behavior	hit; take; resist take; push/pull; pull hair; bite
Positive Affect	smile/laugh
Negative Affect	fret; cry; protest/anger; frown
Movement	gross motor activity
Toy Play	play w/object
Play w/Self	play w/self
Vocalize Non-Directed	vocalize w/out social direction, e.g., hum
Look/Go to Door	look at door; go to door

TABLE 4

Mothers' Behaviors Observed During Departure and Reunion

<u>Category</u>	<u>Behaviors to Child</u>
Stay Near	stay near
Physical Contact	touch; hold/pick-up; hold hands
Caretake	caretake (i.e., diaper, dress, etc.)
Look	look at
Verbalize	inform; instruct; question; vocalize; talk to
Positive Behavior	soothe; praise; hug; kiss; smile/laugh; play with
Negative Behavior	scold; ignore
Farewell	say bye; wave
Greet	name; greet

Chi Square analyses were performed on individual behaviors and on categories of behavior to assess maltreatment and age group differences.

For category analysis, all subjects who showed at least one of the behaviors under consideration were counted.

Length of Departure and Reunion

Although the total amount of time a child was observed in the separation and free play conditions was fixed by experimental design (i.e., two minutes for three episodes in separation, 60 minutes in total for free play), the time of departure and reunion varied in each episode for each mother-child pair. For departure, episodes lasted on the average less than two minutes ($\bar{X} = 115$ seconds), but the range was from 37 to 227 seconds per pair. It was decided that the last 30 seconds (i.e., the final three 10-second periods) prior to mother's exit from the playroom would be the time period in which to assess the departure behaviors of both mother and child. Considerations of both a conceptual and practical nature led to the selection of this time frame. First, the primary interest of the present research was in studying one type of mother-child interaction: the response of mothers and children to the specific task of leaving each other. This was felt to be most clearly delineated in the period immediately prior to maternal departure. Second, although no dyads separated in less time, 23% of the mothers stayed with their children no longer than 30 seconds in at least one departure episode. This interval became the lowest common denominator which could be met by all mother-child pairs in all episodes. That this empirically-derived interval has validity in assessing departure styles is supported by recent research. A study by Weinraub and Lewis (1977) found that, when they were encouraged to respond naturally, departing mothers took a mean of 23.4 seconds to leave their young children in a playroom.

Reunion episodes also averaged less than two minutes ($\bar{X} = 111$ seconds), ranging from 32 to 350 seconds for individual mother-child pairs. In order to assess only reunion behaviors, the first 30 seconds following the mother's perceived (by the child) entry into her child's room was the interval chosen for data analysis. Although no pairs left the playroom in less time, 31% stayed no longer than 30 seconds from the beginning of the defined reunion period during at least one episode. As in the departure condition, 30 seconds was also the longest interval which could be met by all reuniting pairs in all episodes.

Observer Reliability

Reliability was computed by dividing the number of agreements by the number of agreements plus the number of disagreements for the minute-by-minute scores of each behavior. During training sessions at the daycare center, the two observers practiced scoring together until an average criterion of 85% agreement was obtained for behavioral measures. After actual data collection began, reliabilities were obtained on about 20% of the sample. For child behaviors, these ranged from .72 (for follow) to .98 (for cry), with an average of .86. For maternal behaviors, reliabilities ranged from .66 (for instruct) to 1.00 (for greet), with an average of .89.

CHAPTER III

RESULTS AND DISCUSSION

The presentation of research findings has been organized in terms of the four conditions under study, with separate sections for departure, separation, reunion, and free play. Each section follows a general format that provides:

- (1) a description of the behaviors of the total sample under consideration;
- (2) an analysis of the effects of the two independent variables, maternal maltreatment and children's age, on the observed behaviors; and
- (3) a comparison of all the social responses that children displayed during that condition.

BEHAVIOR DURING DEPARTURE

This section begins with a consideration of the behaviors shown by mothers as they leave their children at the daycare center. Following this, children's responses to mothers, to caregivers, and to peers are examined. Finally, an analysis of children's overall social behavior during the departure condition is undertaken.

MATERNAL BEHAVIOR DURING DEPARTURE

Frequency of Maternal Behavior

In general, mothers used a variety of behaviors to maintain contact with their children during routine departures at the daycare center.

Table 5 presents the mean number of occurrences, percentage of total time, and percentage of mothers who engaged in various behaviors while separating from their children. Visual regard emerged as the most common maternal behavior, with departing mothers spending over 34% of the time looking at their children. Behaviors resulting in close proximity were also frequent: 81% of mothers stayed near their children for an average of 21% of the total time, and 42% engaged in brief periods of direct physical contact (i.e., touching, holding hands). Behaviors of a clearly positive tone took the form of soothing, praising, kissing, and smiling/laughing at children; as a category, they occurred almost three times as often as negative behaviors, which took the form of scolding or ignoring. Almost 40% of mothers talked to their children before leaving them. Finally, half the mothers said bye and/or waved, spending 12% of the time in such activities.

Maltreatment as a Variable

The attachment literature suggests a relationship between antecedent maternal behaviors and the quality of her child's attachment. Studies by Ainsworth and others (e.g., Ainsworth et al., 1978; Main et al., 1979) have indicated that mothers whose infants are insecurely attached tend to be less responsive and accessible, and more rejecting and emotionally negative than mothers of securely attached children. In the present study, maternal behavior toward her child prior to her leaving the day-care center showed marked differences as a function of whether or not the mother was a maltreating parent. Table 6 presents the mean number of occurrences of various behavioral categories, and the percentage of mothers engaging in these behaviors, during departure episodes. A multivariate analysis of variance on these categories indicated a significant difference in the overall responses of maltreating and control mothers,

TABLE 5

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Mothers (N = 26) Showing Behavior
Toward Children in Departure

Mother Behavior	$\bar{X}$	SD	% Time	% Mothers
Stay Near	1.92	1.55	21.3	80.8
Physical Contact	.54	.86	6.0	42.3
Caretake	.69	1.16	7.7	38.5
Look	3.08	1.76	34.2	96.2
Verbalize	.65	1.02	7.2	38.5
Farewell	1.04	1.28	11.6	50.0
Positive Behavior	.85	1.17	9.4	42.3
Negative Behavior	.31	.97	3.4	11.5

$F(8,15) = 2.91, p \leq .04.$

Group differences were apparent in a number of behaviors. Maltreating mothers tended to spend less time staying near their children, $F(1,22) = 3.96, p \leq .06$; compared to 7% of control mothers, 33% of maltreating mothers were never near their children at any time during departure, $\chi^2(1) = 2.85, p \leq .09$. Although levels of overall verbalization were comparable, the groups differed in the content of their speech. Fewer maltreating mothers gave information to their children, $\chi^2(1) = 2.73, p \leq .10$, and their remarks were less directly focused on the current situation. Similarly, they less often informed their children that they were leaving, by waving and/or saying bye, $F(1,22) = 6.01, p \leq .03$. While 71% of control mothers engaged in these behaviors, only 25% of maltreating mothers did so, $\chi^2(1) = 5.57, p \leq .02$.

In terms of emotional tone, maltreating mothers were more aversive than their control counterparts due to the combination of higher levels of negative, and lower levels of positive interactions with their children. Maltreating mothers directed more specifically negative behaviors to their children than did control mothers, $F(1,22) = 3.71, p \leq .07$. Only maltreating mothers (25%) were observed to scold or ignore their children, $\chi^2(1) = 3.96, p \leq .05$. In addition, maltreating mothers displayed fewer types of positive behavior to their children. In considering separately the five behaviors making up the category of positive maternal behavior, it was found that mothers did not differ in soothing or kissing their children. However, no maltreating mothers smiled, praised, or played with their youngsters, while 29% of control mothers did so, $\chi^2(1) = 3.86, p \leq .05$.

Interestingly, caretaking behaviors showed an age x maltreatment interaction effect, $F(1,22) = 5.44, p \leq .03$; of all groups, maltreating

TABLE 6

Mean Number of 10-Second Periods of Occurrence and Percentage of Mothers Showing Behavior Toward Children in Departure

Mother Behavior		$\bar{X}$			%		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	2.50	.50	1.70	100	50	80
	O	2.25	1.88	2.06	88	75	81
	Tot	2.36** ^a	1.42	1.92	93** ^a	67	81
Physical Contact	Y	.33	.25	.30	33	25	30
	O	.88	.50	.69	50	50	50
	Tot	.64	.42	.54	43	42	42
Caretake	Y	.17	1.75** ^c	.80	17	50	30
	O	.88	.38	.63	63	25	44
	Tot	.57	.83	.69	43	33	38
Look	Y	2.00	2.50	2.20	83	100	90
	O	3.63	3.63	3.63** ^b	100	100	100
	Tot	2.93	3.25	3.08	93	100	96
Verbalize	Y	.50	.25	.40	17	25	20
	O	1.00	.63	.81	63	38	50
	Tot	.79	.50	.65	43	33	38
Farewell	Y	1.67	.25	1.10	83	25	60
	O	1.50	.50	1.00	63	25	44
	Tot	1.57** ^a	.42	1.04	71** ^a	25	50
Positive Behavior	Y	.84	.25	.60	33	25	30
	O	1.13	.88	1.00	50	50	50
	Tot	1.00	.67	.85	43	42	42
Negative Behavior	Y	.00	1.00	.40	0	50	20
	O	.00	.50	.25	0	13	6
	Tot	.00	.67** ^a	.31	0	25** ^a	12

*p ≤ .10

**p ≤ .05

Significance level of the ^a maltreatment difference,

^b age difference, and ^c maltreatment x age difference.

mothers of younger children engaged in the most caretaking activities. Rather than reflecting greater concern for their infants, however, this finding is a further indication of the maltreating mothers' greater neglect. School policy requires that each child be dressed and cleanly diapered before being left at the center in the morning. While control mothers routinely carried out these activities at home, maltreating mothers did not, and were compelled to perform them in the daycare center.

In summary, maltreating mothers were distinguishable from controls because of their higher levels of negative responses and their lower levels of proximal contact, positive behaviors and affect, and leave-taking behavior. These findings suggest that: (1) the two groups--control and maltreating mothers--determined by the State Division of Youth and Family Services, reflect real differences in maternal behavior; and (2) maltreatment affects less obvious aspects of a mother's behavior, including the way in which she handles natural separations from her child.

Age as a Variable

Table 6 shows the effect of children's age on the mean number of occurrences, and percentage of mothers engaging in various behaviors during departure. A MANOVA performed on all behavioral categories indicated no reliable difference between the mothers of older and younger children. Similarly, the ANOVAs computed for separate behaviors showed no significant group differences, with one exception: mothers tended to look more at older than younger children, $F(1,22) = 3.85$, $p \leq .07$. Thus, at least when their children were under three years of age, mothers tended to employ similar types of behavior during routine departures. The major impact of the child's age was seen instead in the length of departure episodes: mothers of infants spent almost twice as long with their children before leaving them as did mothers of older children, $F(1,22) = 21.33$, $p \leq .001$.

CHILDREN'S BEHAVIOR TO MOTHERS DURING DEPARTURE

Frequency of Child Behavior

Table 7 presents the mean number of occurrences, percentage of total time, and percentage of children who showed maternally-directed behaviors during the departure condition. Children responded to the impending separation with a variety of proximal and distal behaviors which served to orient them specifically to their mothers. They spent about 36% of the interval looking at their mothers, and about 23% of the time staying close by. Direct contact with departing mothers tended to be brief but positive in tone: 42% of the children touched or held hands with their mothers; almost 35% hugged or kissed mothers; and 8% played with them. There were no instances of clinging or agonistic behaviors (e.g., hitting or pushing) directed to mothers. Finally, almost 25% of the children displayed some type of "farewell" behavior, by waving, saying bye, and/or following mother to the door.

During this pre-separation period, both positive and negative affect were expressed, but 58% of the children showed no affective responses of any kind. In general, emotional displays tended to be brief. Negative affect, in the form of fretting, crying, and/or anger occurred more than five times as frequently as positive affect (i.e., smiling/laughing). The majority of children who displayed affect showed either positive or negative affect; only 18% of the children showed both.

Despite their focus on departing mothers, children showed a marked interest in their environment. Non-social play and gross motor activity were common, with 50% of the children engaging in toy play, and 65% moving around the room, by walking, running, crawling, etc.

In summary, these findings suggest that the familiar departure situation occurring as a natural event in the daycare routine elicited the

TABLE 7

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Mothers in Departure

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	2.04	1.59	22.7	80.8
Physical Contact	.54	.86	6.0	42.3
Hug/Kiss	.62	.94	6.9	34.6
Look	3.19	1.94	35.4	92.3
Vocalize	.12	.33	1.3	11.5
Play With	.08	.27	.9	7.7
Farewell	.35	.69	3.9	23.1
Positive Affect	.19	.49	2.1	15.4
Negative Affect	.96	1.53	10.7	34.6
Movement	2.08	2.06	23.1	65.4
Toy Play	1.15	1.35	12.8	50.0

kinds of contact-maintaining behaviors often associated with attachment to mothers in other contexts. However, distress at mother's leaving, as measured by crying, protest or clinging, and disturbance of play and exploration, was minimal for this sample of daycare children. That such distress is more usual in laboratory separation procedures indicates the important role played by context in determining how the child reacts to maternal departure.

Maltreatment as a Variable

To assess the quality of the child's relationship to its mother, investigators often use a laboratory-based separation procedure. Behaviors of particular importance in making such assessments relate to the child's attempts to attain and maintain contact with the mother (e.g., by staying near, looking at mother) as well as the child's affective expressions. The departure condition in the present research provided the opportunity to study maltreated and normally reared children with their mothers in the context of an impending separation.

Table 8 presents the mean number of occurrences, and the percentage of children by group, directing behaviors to mothers during departure episodes. Although no significant maltreatment effect was found in the MANOVA conducted on children's overall behavior, maltreated and control children differed in a number of specific behaviors. Maltreated children looked significantly less at their mothers, $F(1,22) = 5.60$, $p \leq .03$, and tended to stay further away from them, $F(1,22) = 4.08$, $p \leq .06$, than did their control counterparts. Fewer of the children who were maltreated stayed near their mothers at any point during the departure interval, $\chi^2(1) = 2.85$, $p \leq .09$. Toy play, an activity which reduced involvement with the mother, showed a significant age x maltreatment interaction effect, $F(1,22) = 4.84$, $p \leq .04$. With increasing age, maltreated chil-

TABLE 8

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Mothers in Departure

Child Behavior		$\bar{X}$			$\%$		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	2.50	.50	1.70	100	50	80
	O	2.50	2.00	2.25	88	75	81
	Tot	2.50** ^a	1.50	2.04	93** ^a	67	81
Physical Contact	Y	.33	.25	.30	33	25	30
	O	.88	.50	.69	50	50	50
	Tot	.64	.42	.54	43	42	42
Hug/ Kiss	Y	.50	.25	.40	33	25	30
	O	.75	.75	.75	38	38	38
	Tot	.64	.58	.62	36	33	35
Look	Y	4.00	1.25	2.90	100	75	90
	O	3.75	3.00	3.38	100	88	94
	Tot	3.86** ^a	2.42	3.19	100	83	92
Vocalize	Y	.00	.00	.00	0	0	0
	O	.13	.25	.19	13	25	19
	Tot	.07	.17	.12	7	17	12
Play With	Y	.17	.00	.10	17	0	10
	O	.00	.13	.06	0	13	6
	Tot	.07	.08	.08	7	8	8
Farewell	Y	.67	.00	.40	33	0	20
	O	.50	.13	.31	38	13	25
	Tot	.57** ^a	.08	.35	36** ^a	8	23
Positive Affect	Y	.33	.25	.30	33	25	30** ^b
	O	.00	.25	.13	0	13	6
	Tot	.14	.25	.19	14	17	15
Negative Affect	Y	1.17	2.25	1.60** ^b	50	50	50
	O	.75	.38	.56	38	13	25
	Tot	.93	1.00	.96	43	25	35
Movement	Y	1.67	.00	1.00	67	0	40
	O	2.75	2.75	2.75** ^b	75	88	81** ^b
	Tot	2.29	1.83	2.08	71	58	65
Toy Play	Y	1.83	.25** ^c	1.20	67	25	50
	O	.75	1.50	1.13	25	75	50
	Tot	1.21	1.08	1.15	43	58	50

*p ≤ .10

**p ≤ .05

Significance level of the ^a maltreatment difference,
^b age difference, and ^c maltreatment x age difference.

dren focused more attention on toys than did control children, whose toy play in the presence of mothers decreased with age. Maltreated children were also less likely to display any form of "farewell" behavior in response to their mothers' leaving, $F(1,22) = 3.51$, $p \leq .08$.

Children's affective responses during departure were also sensitive to the effects of maternal maltreatment. As groups, maltreated and control children showed similar overall levels of positive and of negative affect. However, when these categories were combined, it was found that fewer of the children who were maltreated expressed any kind of affect in the presence of their mothers; while 57% of control children smiled, laughed, fretted, cried or showed protest/anger during departure, only 25% of maltreated children did so, $\chi^2(1) = 2.79$, $p \leq .10$. Furthermore, group differences emerged in the patterning of affective behavior. In the control group, no child displayed both positive and negative affect, while in the maltreated group, children who were emotionally reactive showed both types of affect, $\chi^2(1) = 7.2$, $p \leq .01$. Thus, control children were more affectively consistent as individuals, while maltreated children appeared more ambivalent.

In summary, children's responses to mothers during routine departures reflected the degree to which they experienced a positive relationship with their mothers. Maltreated children were less likely to seek or maintain contact with their mothers, in either a proximal or distal mode, less responsive to mothers as they left, and more emotionally inhibited or ambivalent than their control counterparts. It is interesting to note that despite these specific behavioral differences, maltreated and control children showed greater similarity to one another than did their mothers. That is, while maltreatment exerted an overall effect on maternal behavior, when all categories were considered, this was not the case

for children.

Age as a Variable

Table 8 presents the mean number of occurrences, and percentage of children by age group who directed various behaviors to mothers during departure. A MANOVA indicated that younger and older children did not differ significantly in their overall behavior to mothers. Similarly, univariate ANOVAs showed no significant age changes in the occurrence of proximity-related behaviors (staying near or physically contacting mother), distal behaviors (looking at or vocalizing to mother), and responses to mother's leaving (hugging/kissing or "farewell behaviors").

However, age differences were found in affective and movement behaviors. Infants showed almost three times as much negative affect as older children, $F(1,22) = 3.53$, $p \leq .08$. They also tended to show more positive affect: 30% of younger, compared to 6% of older, children smiled or laughed in the presence of their mothers, $\chi^2(1) = 2.67$, $p \leq .10$. When the categories of positive and negative affect were combined, significantly more of the infants were emotionally expressive, $\chi^2(1) = 5.22$, $p \leq .03$. Movement around the classroom increased reliably with age, $F(1,22) = 6.04$, $p \leq .03$. Twice as many of the older as the younger children engaged in some type of gross motor activity (e.g., running, walking, crawling), $\chi^2(1) = 4.62$, $p \leq .05$. Our findings are in substantial agreement with those of Ragozin (1980) who also observed daycare-based separations in children from 1½ to 3 years of age. She reported that overall proximity and communication (e.g., vocalization) directed to mothers remained stable across the age range, while crying declined with age.

CHILDREN'S BEHAVIOR TO CAREGIVERS DURING DEPARTURE

Frequency of Child Behavior

Children's responses to familiar adults in the daycare center during the period when mothers were leaving them are considered in this section. Table 9 presents the mean number of occurrences, percentage of total time, and percentage of children showing behaviors directed to caregivers during the departure condition. It may be seen that contact with caregivers was predominantly visual; children spent about 40% of the time looking at their caregivers. But in the presence of departing mothers, children were less likely to seek proximal contact with caregivers: only 12% of the children stayed near their caregivers, and even fewer (8%) engaged in physical contact. Social play with caregivers was also limited, and none of the children hugged or kissed them. However, there were no instances of negative or agonistic behavior directed to caregivers, and 25% of the children submitted to some form of caretaking without protest.

Maltreatment as a Variable

Clinical studies in the area of child abuse and neglect have often reported that children develop obvious impairments in their social relationships, and multiple behavioral problems with teachers and peers, as a direct consequence of maltreatment by mothers. However, recent experimental research focusing on the maltreated child's social interactions within the family has indicated that the effects of a maltreating mother-child relationship do not generalize to children's responses to fathers and siblings (Burgess & Conger, 1978). The data from the present research extend these preliminary findings from family-based studies to children's interactions with secondary caregivers and peers.

Table 10 presents the mean number of occurrences, and percentage of children by group directing behaviors to caregivers during departure

TABLE 9

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Caregivers in Departure

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	.35	1.23	3.9	11.5
Physical Contact	.12	.43	1.3	7.7
Hug/Kiss	.00	.00	.0	0.0
Look	3.54	2.10	39.3	100.0
Vocalize	.04	.20	.4	3.8
Play With	.08	.39	.9	3.8
Caretaken	.69	1.08	7.7	26.9

TABLE 10

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Caregivers in Departure

Child Behavior		<u>$\bar{X}$</u>			<u>%</u>		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	.50	.00	.30	33	0	20
	0	.75	.00	.38	13	0	6
	Tot	.64	.00	.35	21 ^a	0	12
Physical Contact	Y	.17	.00	.10	17	0	10
	0	.25	.00	.13	13	0	6
	Tot	.21	.00	.12	14	0	8
Hug/ Kiss	Y	.00	.00	.00	0	0	0
	0	.00	.00	.00	0	0	0
	Tot	.00	.00	.00	0	0	0
Look	Y	2.67	3.25	2.90	100	100	100
	0	3.63	4.25	3.94	100	100	100
	Tot	3.21	3.92	3.54	100	100	100
Vocalize	Y	.00	.00	.00	0	0	0
	0	.00	.13	.06	0	13	6
	Tot	.00	.08	.04	0	8	4
Play With	Y	.00	.00	.00	0	0	0
	0	.00	.25	.13	0	13	6
	Tot	.00	.17	.08	0	8	4

* $p \leq .10$

** $p \leq .05$

Significance level of the ^amaltreatment difference,

^bage difference, and ^cmaltreatment x age difference.

episodes. In general, maltreated children were indistinguishable from controls: a MANOVA failed to find a significant group difference in overall behavior to caregivers, and analyses of separate categories and behaviors produced similar results. However, when the categories of staying near and physical contact were combined, it was found that maltreated children avoided close contact with caregivers, at least in their initial encounters of the day. Compared to 29% of controls, no maltreated children were observed to stay near and/or touch their caregivers, $\chi^2(1) = 3.86, p \leq .05$.

Age as a Variable

As Table 10 shows, older and younger children engaged in comparable levels of caregiver-directed behavior during departure. No significant age effects were found in the overall MANOVA, or in the analyses of individual categories and behaviors.

CHILDREN'S BEHAVIOR TO PEERS DURING DEPARTURE

Frequency of Child Behavior

Children's first contacts with peers occurred in the presence of mothers and caregivers during the departure condition. Table 11 presents the mean number of occurrences, percentage of total time, and percentage of children showing behaviors to their peers in this period. The data indicate that children directed to peers the same kinds of behavior shown to adults. Again, the most common behavior was visual regard; children looked at other children about 35% of the time. But proximal contact also occurred: almost 25% of the children spent some time staying near their peers, and 8% touched or held hands with them. In the presence of departing mothers, vocalizing to peers or playing with them

TABLE 11

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Peers in Departure

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	.46	.90	5.1	23.1
Physical Contact	.08	.27	.9	7.7
Hug/Kiss	.00	.00	.0	0.0
Look	3.12	2.12	34.7	96.2
Vocalize	.15	.54	1.7	7.7
Play With	.19	.69	2.1	7.7

TABLE 12

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Peers in Departure

Child Behavior		$\bar{X}$			%		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	.83	1.00	.90* ^b	50	50	50** ^b
	O	.00	.38	.19	0	13	6
	Tot	.36	.58	.46	21	25	23
Physical Contact	Y	.17	.00	.10	17	0	10
	O	.13	.00	.06	13	0	6
	Tot	.14	.00	.08	14	0	8
Hug/ Kiss	Y	.00	.00	.00	0	0	0
	O	.00	.00	.00	0	0	0
	Tot	.00	.00	.00	0	0	0
Look	Y	2.83	3.50	3.10	100	100	100
	O	2.50	3.75	3.13	88	100	94
	Tot	2.64	3.67	3.12	93	100	96
Vocalize	Y	.00	.00	.00	0	0	0
	O	.25	.25	.25	13	13	13
	Tot	.14	.17	.15	7	8	8
Play With	Y	.33	.75	.50* ^b	17	25	20
	O	.00	.00	.00	0	0	0
	Tot	.14	.25	.19	7	8	8

*p ≤ .10

**p ≤ .05

Significance level of the ^a maltreatment difference,

^b age difference, and ^c maltreatment x age difference.

were brief occurrences. Although no children hugged or kissed their peers, none were observed to hit, push or show any other negative behavior during departure.

Maltreatment as a Variable

Children's responses to other children did not differ markedly as a function of whether or not they were maltreated by their mothers. Table 12 presents the mean number of occurrences and percentage of children showing peer-directed behaviors during the departure condition. It was found that maltreated children did not differ significantly from controls on any of the proximal, distal, or play behaviors shown to peers. A MANOVA performed on all categories of behavior found no difference between the groups in overall peer behavior. Thus, while maternal maltreatment affected children's behaviors to mothers during departure episodes, it did not affect children's peer behaviors.

Age as a Variable

Children's age appeared to have little effect on their overall peer behavior during departure. When all behavioral categories were considered, a MANOVA failed to find a significant difference between the older and younger groups. However, as Table 12 indicates, several specific behaviors differed as a function of the child's age. Compared to older children, infants tended to stay near their peers more often, $F(1,22) = 4.20$, $p \leq .06$, and partly as a consequence, to engage in more peer play, $F(1,22) = 3.84$, $p \leq .07$. In all other behaviors, the groups did not differ.

COMPARISON OF SOCIAL BEHAVIORS DURING DEPARTURE

Comparative analyses of children's social responses during departure episodes are presented in the sections that follow. Of special interest are the effects of different social partners, and maternal maltreatment

on all socially-directed behavior. To assess these effects, repeated measures analyses of variance with two between-subjects factors (maltreatment and age) and one within-subjects factor (social object) were performed on all behavioral categories.

Social Object as a Variable

Figure 1 shows the mean number of occurrences of the behaviors directed to mothers, caregivers, and peers by the entire sample of children during the departure condition. It is clear from Figure 1 that children's social responses differed depending upon the person with whom they interacted. In this pre-separation period, mothers were the primary interpersonal focus, to whom the greatest frequency of attachment-related behaviors were directed.

Table 13 presents the mean number of occurrences of the social behaviors shown to mothers, caregivers, and peers, as well as the results of the ANOVAs conducted on each variable. These findings show the main effect of social object was significant in the case of stay near, physical contact, and hug/kiss. T tests confirmed that children stayed near, physically contacted, and hugged/kissed mothers more than either caregivers or peers.

However, children's social responses during departure were not exclusively mother-oriented. Social play and social speech tended to be directed to peers more than to any of the adults present, but mean frequencies for these categories were too low to yield significant differences. In addition, children looked at caregivers and peers as often as their mothers.

Maltreatment and Social Behavior

In previous sections, the ways in which maternal maltreatment affected, in turn, the mother-child, caregiver-child, and peer-child systems

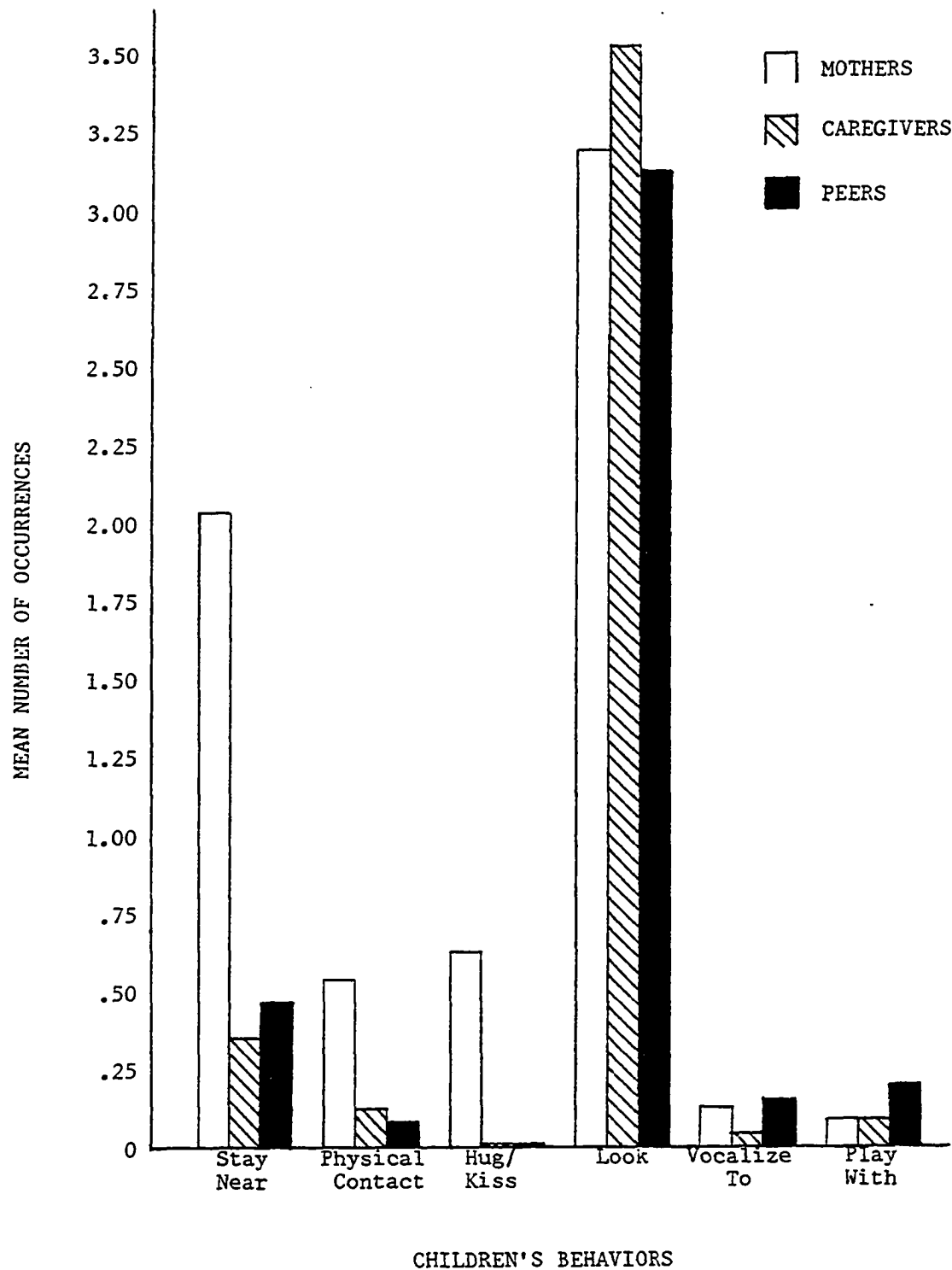


Figure 1. Mean number of 10-second periods of occurrence of children's behaviors to mothers, caregivers, and peers in departure.

TABLE 13

Differences in Mean Number of Occurrences of Children's Behavior to
Mothers, Caregivers, and Peers in Departure

Child Behavior	To Mother	To Caregiver	To Peer	Repeated Meas. F(2,50)	p $\leq$
Stay Near	2.04**	.35	.46	13.38	.0001
Physical Contact	.54**	.12	.08	6.77	.003
Hug/Kiss	.62**	.00	.00	11.11	.0001
Look	3.19	3.54	3.12	.27	.77
Vocalize	.12	.04	.15	.77	.47
Play With	.08	.08	.19	.46	.63

during departure were presented. In this section, the effects of maltreatment on overall social behavior, and on patterns of interaction across social objects are considered.

The behaviors that maltreated and control children directed to mothers, caregivers, and peers during departure are presented in Table 14. The first issue to be considered is whether maternal maltreatment affected children's overall sociability in the playroom. The last columns of Table 14 show the total mean frequencies for each response category summed across social objects; essentially these composite means reflect the overall tendencies of maltreated and control children to engage in particular social behaviors, without regard to the identity of the person to whom they were directed. When a MANOVA was performed on all categories of behavior, no significant difference between the groups in their overall sociability was found. In addition, ANOVAs failed to find significant group differences for any of the separate behavioral categories shown in Table 14. There was, however, a tendency for control children to stay near others more than did maltreated children, $F(1,22) = 3.29$, $p \leq .09$.

However, maltreatment was found to affect the patterning of this sociability, when the relative responses to mothers, caregivers and peers were compared. Figure 2 shows the sum of the mean frequencies of all responses directed to each of the social objects listed in Table 14 by maltreated and control children during departure episodes. It may be seen from the figure that, in general, maltreated children engaged in less contact with mothers but more contact with peers when compared to control children, who showed the reverse pattern of interaction. Caregivers received the same overall attention from the two groups. A significant group x social object interaction effect was found when all social

TABLE 14

Mean Number of 10-Second Periods of Occurrence of Children's Behavior
Toward Mothers, Caregivers, and Peers in Departure

<u>Child Behavior</u>		<u>To Mother</u>			<u>To Caregiver</u>			<u>To Peer</u>			<u>Across Object</u>		
		Con	Mal	Tot	Con	Mal	Tot	Con	Mal	Tot	Con	Mal	Tot
Stay	Y	2.50	.50	1.70	.50	.00	.30	.83	1.00	.90*	3.83	1.50	2.90
	0	2.50	2.00	2.25	.75	.00	.38	.00	.38	.19	3.25	2.38	2.81
	Tot	2.50*	1.50	2.04	.64	.00	.35	.36	.58	.46	3.50*	2.08	2.85
Physical Contact	Y	.33	.25	.30	.17	.00	.10	.17	.00	.10	.67	.25	.50
	0	.88	.50	.69	.25	.00	.13	.13	.00	.06	1.26	.50	.88
	Tot	.64	.42	.54	.21	.00	.12	.14	.00	.08	.99	.42	.74
Hug/ Kiss	Y	.50	.25	.40	.00	.00	.00	.00	.00	.00	.50	.25	.40
	0	.75	.75	.75	.00	.00	.00	.00	.00	.00	.75	.75	.75
	Tot	.64	.58	.62	.00	.00	.00	.00	.00	.00	.64	.58	.62
Look	Y	4.00	1.25	2.90	2.67	3.25	2.90	2.83	3.50	3.10	9.50	8.00	8.90
	0	3.75	3.00	3.38	3.63	4.25	3.94	2.50	3.75	3.13	9.88	11.00	10.44
	Tot	3.86**	2.42	3.19	3.21	3.92	3.54	2.64	3.67	3.12	9.71	10.00	9.85
Vocalize	Y	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	0	.13	.25	.19	.00	.13	.06	.25	.25	.25	.38	.63	.50
	Tot	.07	.17	.12	.00	.08	.04	.14	.17	.15	.21	.42	.31
Play With	Y	.17	.00	.10	.00	.00	.00	.33	.75	.50*	.50	.75	.60
	0	.00	.13	.06	.00	.25	.13	.00	.00	.00	.00	.38	.19
	Tot	.07	.08	.08	.00	.17	.08	.14	.25	.19	.21	.50	.35

*p ≤ .10

**p ≤ .05

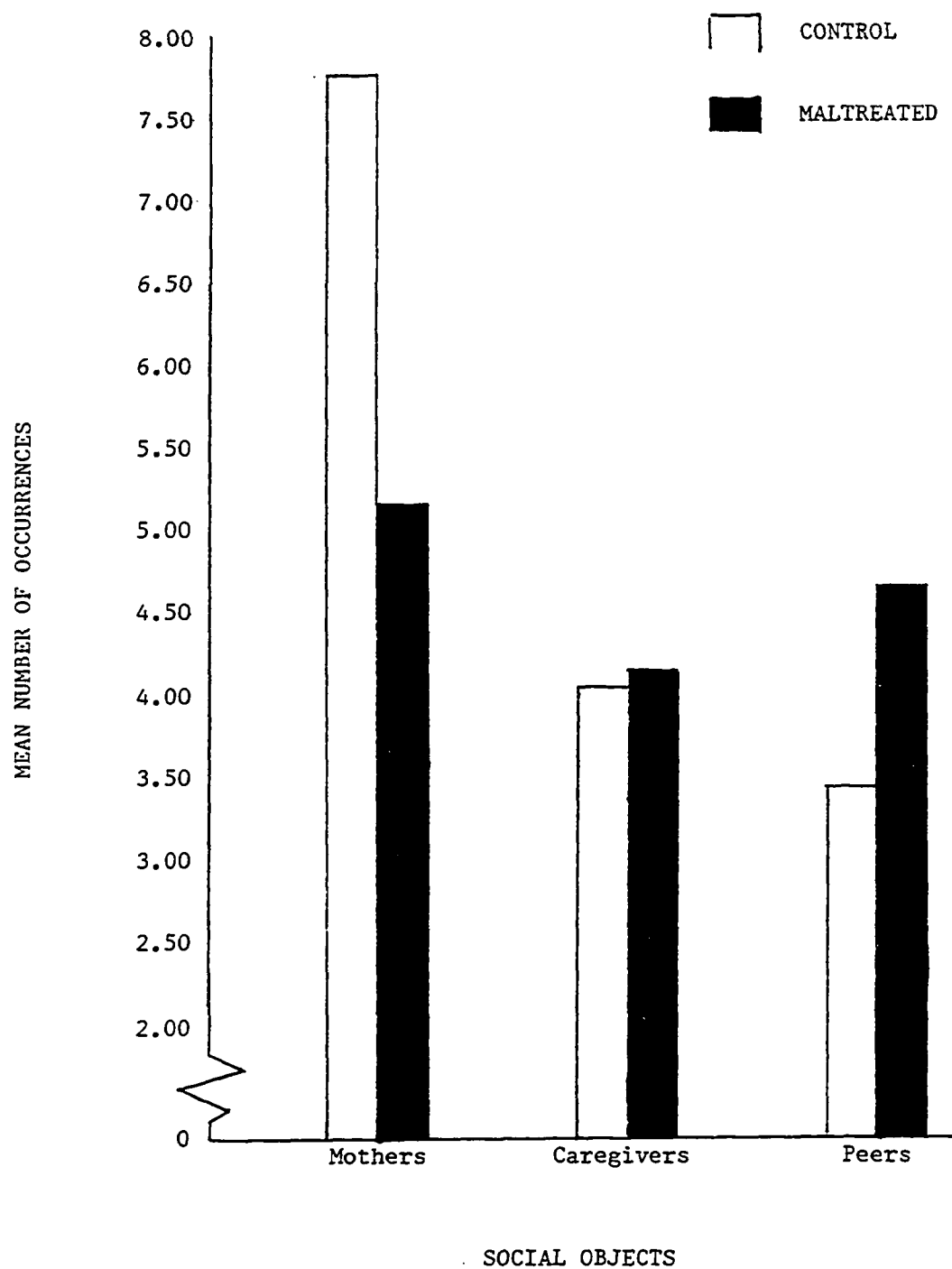


Figure 2. Total mean number of occurrences of all behavior shown by control and maltreated children to different social objects in departure.

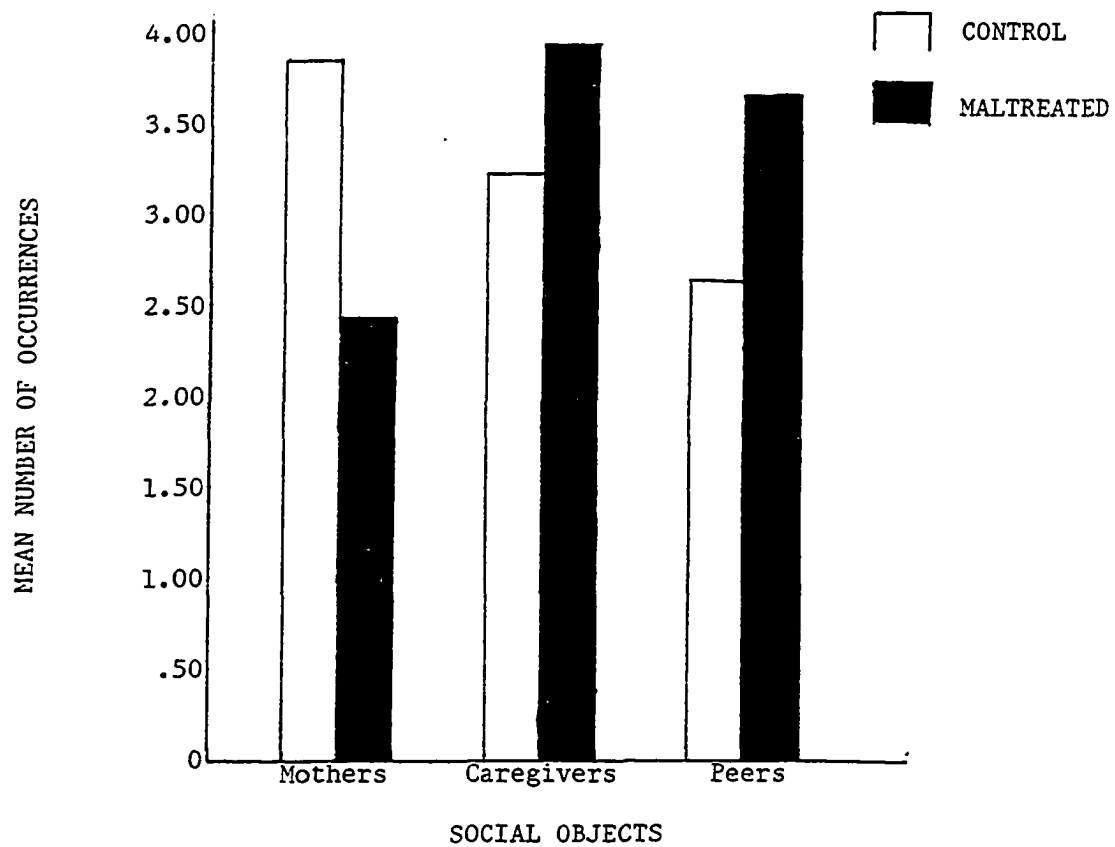


Figure 3. Mean number of occurrences of LOOK in departure.

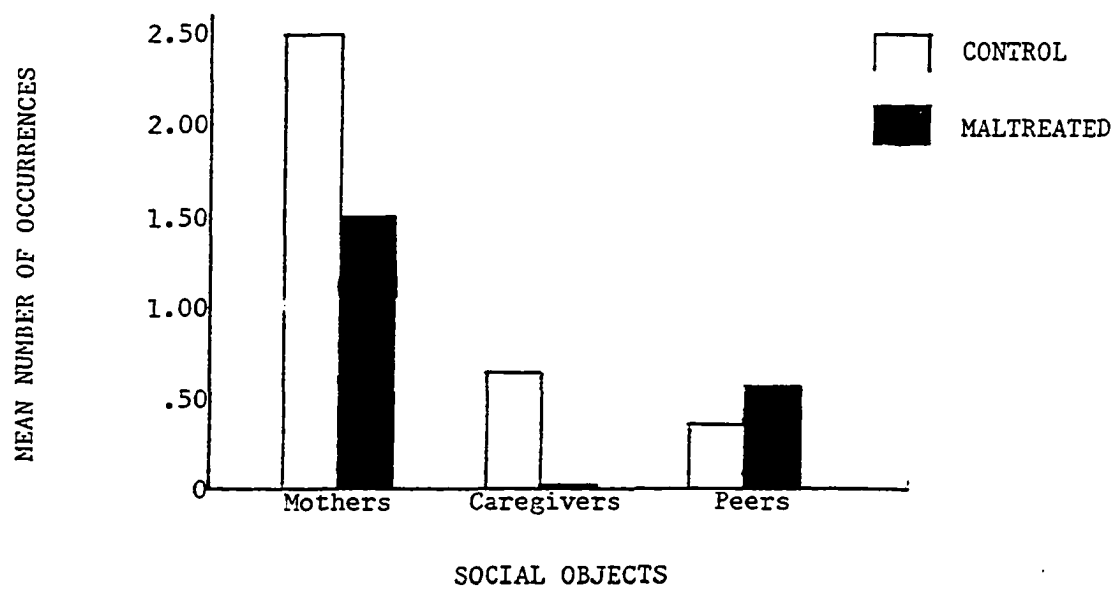


Figure 4. Mean number of occurrences of STAY NEAR in departure.

behaviors were considered, $F(2,46) = 3.46$, $p \leq .05$.

Particular behaviors appeared to be more sensitive to the group $\times$ social object interaction effect; these were stay near and looking. Figure 3 shows the patterning of maltreated and control children's socially-directed looking, the most frequent distal response in departure. Although the overall amount of socially-directed visual regard was not significantly different for the two groups, maltreated children looked more at peers than mothers, while controls looked more at mothers than peers, $F(2,46) = 2.78$, $p \leq .07$. A similar pattern emerged for children's most common proximal behavior, staying near others. As shown in Figure 4, maltreated children tended to stay near mothers less but near peers more than did their control counterparts, $F(2,46) = 2.46$, $p \leq .09$.

In summary, the data indicate that maltreated and control children maintained comparable levels of social contact in the daycare setting by choosing somewhat different interpersonal targets. For normally treated children, the departure condition strongly elicited mother-directed behavior; for maltreated children, peers became an important focus. These results suggest that, given supportive group environments, early peer relations develop despite a relatively poor mother-child relationship.

BEHAVIOR DURING SEPARATION

Children's reactions to separation from their mothers were assessed during the first two minutes immediately following maternal departure from the playroom. The present separation situation differs from typical laboratory separation conditions on a number of critical dimensions. The aim of separation procedures in the laboratory is to heighten arousal, and subsequently certain behaviors thought to reflect attachment, by stressing the child. To that end, the child is left in an unfamiliar

room either alone or in the company of a strange adult. Maternal absence in this situation is interpreted by the mother, the experimenter, and the child as distressing.

In the school setting, separation from the mother is a prerequisite for starting the day's activities, and as such serves a positive signaling function for the mother, teacher and child alike. Here, separation is accompanied by a minimum of stress, since the child is left in a familiar room in the presence of known teachers and peers. Further, separation embedded in the school context is a consistent, meaningful feature of the child's experience, whereas separation in the laboratory context, lacking functional relatedness to the child's activities, is inherently less comprehensible and assimilable. Clearly, from the child's point of view, the two separation situations differ in aim, meaningfulness, and interpretability. The behaviors elicited by each situation may create different pictures of the nature of the child's relationship to the mother following her departure. The present research sought to explore the nature of children's separation behaviors which were minimally confounded by the effects of stress and confusion.

This section begins with the findings regarding children's general reactions to maternal absence, and is followed by a consideration of behaviors directed specifically to caregivers and to peers. Finally, a comparative analysis of all social responses shown by children during the separation condition is provided.

CHILDREN'S BEHAVIOR RELATED TO MOTHERS DURING SEPARATION

Frequency of Child Behavior

Common distress reactions shown by young children when their mothers leave them include crying, following mother to the door, decreased amount

of play, and decreased movement. Table 15 presents the mean number of occurrences, percentage of total time, and percentage of children showing these behaviors during maternal separations occurring in the daycare center. Many of the children showed some degree of distress: 50% expressed negative affect in the form of fretting, crying, or anger, and over 25% looked at or went to the door from which mothers exited. Overall, 62% of the children showed one, or both, of these reactions, for an average of 10% of the interval studied. However, individual variability was considerable, and children spent from 3% to 56% of the time engaged in either of these classes of behaviors.

It should be noted that positive affect was also observed, and 50% of the children smiled or laughed at some point during the episode. In addition, 62% of the children engaged in vocalizations that were positive in tone and not directed to any person (chattering, singing, etc.). It would appear that under familiar conditions, separation experiences are more likely to evoke both negative and positive reactions.

Finally, separations in the daycare center were not accompanied by the diminution of play or movement activities often seen in laboratory-based separations. Almost all the children played with toys (89% of the sample) or engaged in gross motor responses (85%). There was three times more toy play during separation than in the immediately preceding departure period. These findings suggest that the separation distress which occurred in these familiar and routine circumstances was less disruptive of overall behavior; distress reactions in the daycare center were limited to negative affect and search responses and had little effect on play, movement and vocal behavior.

Maltreatment as a Variable

The relationship between the child's response to separation and the

TABLE 15

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Affect, Movement, Toy Play,
and Other Behavior in Separation

Child Behavior	X	SD	% Time	% Children
Positive Affect	.85	1.19	2.4	50.0
Negative Affect	2.85	4.79	7.9	50.0
Movement	7.00	5.11	19.4	84.6
Toy Play	13.00	9.42	36.1	88.5
Play w/Self	1.19	2.86	3.3	30.8
Vocalize Non-Directed	3.42	4.91	9.5	61.5
Look/Go to Door	.65	1.55	1.8	26.9

quality of the mother-child interaction remains an unsettled issue. Some studies have reported that children who had a more positive relationship with their mothers were more distressed during maternal absence (e.g., Blurton-Jones & Leach, 1972; Schaffer & Emerson, 1964). Conversely, others have found that children of unresponsive, insensitive, or rejecting mothers were more likely to show separation distress (e.g., Stayton & Ainsworth, 1973; Tizard & Tizard, 1971). Still others have reported no systematic relationship between the child's distress and the mother's responsiveness (e.g., Fleener & Cairn, 1970). In the present research, it was possible to compare children who experienced a less positive relationship with their mothers, i.e., the maltreated group, with normally-reared children in a naturally-occurring separation situation.

Table 16 presents the mean number of occurrences, and percentage of children by group, showing attachment-related behaviors during separations from mothers. The data suggest some differences in the way maltreated and control children responded to maternal absence. Although the groups showed similar amounts of negative affect, controls expressed almost four times as much positive affect as their maltreated classmates, $F(1,22) = 4.92$, $p \leq .04$. While only 7% of the control group displayed no emotional reaction of any kind, 42% of maltreated children were affectively neutral, $\chi^2(1) = 4.22$, $p \leq .04$. In addition, twice as many control children looked at or went to the door from which mothers exited, although this difference did not reach significance.

Significant age x maltreatment interaction effects were found for toy play, $F(1,22) = 5.16$, $p \leq .04$, and for non-directed vocalization, $F(1,22) = 5.63$, $p \leq .03$. While these behaviors decreased with age for control children following maternal separation, both toy play and non-social speech increased with age in the maltreated group. Finally, sig-

TABLE 16

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Affect, Movement, Toy Play, and Other Behavior in Separation

Child Behavior		$\bar{X}$			$\%$		
		Con	Mal	Tot	Con	Mal	Tot
Positive Affect	Y	1.67	.25	1.10	67	25	50
	O	1.00	.38	.69	63	38	50
	Tot	1.29** ^a	.33	.85	64	33	50
Negative Affect	Y	4.00	1.50	3.00	50	50	50
	O	3.00	2.50	2.75	50	50	50
	Tot	3.43	2.17	2.85	50	50	50
Movement	Y	8.00	5.25	6.90	83	100	90
	O	5.25	8.88	7.06	63	100	81
	Tot	6.43	7.67	7.00	71	100**	85
Toy Play	Y	16.00	13.50	15.00	100	100	100
	O	5.38** ^c	18.13	11.75	75	88	81
	Tot	9.93	16.58	13.00	86	92	89
Play w/Self	Y	.17	.25	.20	17	25	20
	O	2.25	1.38	1.81	38	38	38
	Tot	1.36	1.00	1.19	29	33	31
Vocalize Non-Directed	Y	5.33	1.75	3.90	83	50	70
	O	.50** ^c	5.75	3.13	25	88	56
	Tot	2.57	4.42	3.42	50	75	62
Look/Go To Door	Y	2.00	.75	1.50** ^b	50	50	50
	O	.25	.00	.13	25	0	13
	Tot	1.00	.25	.65	36	17	27

*p $\leq$.10

**p $\leq$.05

Significance level of the ^a maltreatment difference,
^b age difference, and ^c maltreatment x age difference.

nificantly more of the maltreated children occupied themselves in moving around the playroom, $\chi^2(1) = 4.05$, $p \leq .05$.

In summary, the degree to which children experienced a positive relationship with their mothers was reflected in their separation reactions. Compared to controls, children who were maltreated appeared more detached from their mothers: they were less likely to express affect or search for mothers, and more likely to become involved in non-social activities like toy play, movement, and non-directed speech, with age. These behaviors may indicate a greater avoidance of mothers on the part of maltreated children, or a stronger sense of their reduced ability to alter maternal behavior by their own responses.

Age as a Variable

As Table 16 indicates, there were few differences in children's reactions to relatively non-stressful separations from their mothers, as a function of age alone. Infants did, however, look or go to the door from which mothers exited more often than older children, $F(1,22) = 4.66$, $p \leq .05$. In all other behaviors, younger and older children did not differ significantly.

CHILDREN'S BEHAVIORS TO CAREGIVERS DURING SEPARATION

Frequency of Child Behavior

The first period of the day when children were alone with caregivers (and peers) occurred during the two minutes of maternal separation. Table 17 presents the mean number of occurrences, the percentage of total time, and the percentage of children engaging in caregiver-directed behaviors during this period.

The data clearly document the children's responsiveness to secondary caregivers in the absence of their mothers. All the children looked at

TABLE 17

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Caregivers in Separation

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	5.85	6.10	16.3	73.1
Physical Contact	9.58	9.88	26.6	76.9
Hug/Kiss	.27	.60	.8	19.2
Look	22.15	6.60	61.5	100.0
Vocalize	1.58	3.92	4.4	23.1
Positive Behavior	1.62	2.95	4.5	38.5
Negative Behavior	.15	.37	.4	15.4

caregivers, spending over 60% of the time in visual contact. About 25% of the children verbalized directly to caregivers. In addition, once mothers had gone, proximal modes of contact occurred with great frequency and variety: almost 75% of the children stayed near their caregivers, and 77% engaged in some form(s) of direct physical contact (i.e., touch, lie/lean, hold hands, be held). Moreover, a combined total of 54% of the children directed affectionate and/or positive responses to their caregivers; almost 20% hugged or kissed caregivers, and almost 40% showed at least one of the following positive behaviors: imitate, follow, play with, accept object, offer, or show object. Negative behaviors were far less common occurrences. Displayed by 15% of the children, they involved taking objects away from caregivers; no child was observed to hit caregivers. These findings indicate that daycare children had developed relationships with their caregivers that encompassed the range of behaviors typically associated with attachment.

Maltreatment as a Variable

Table 18 presents the mean number of occurrences, and percentage of children by group, showing caregiver-directed behaviors during the separation condition. The data recapitulate the basic finding obtained from departure episodes, namely, that maternal maltreatment did not markedly affect the child's other social relationships. When a MANOVA was performed on all categories of behavior, it was found that maltreated children did not differ significantly from controls in their overall response to caregivers. Similar results were obtained for separate categories and behaviors: the groups did not differ in their looking, staying near, vocalizing, hugging/kissing, positive and negative behaviors. There was, however, a tendency for older maltreated children to engage in less direct physical contact with their caregivers, $F(1,22) = 3.08$, $p \leq .09$.

TABLE 18

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Caregivers in Separation

Child Behavior		<u>$\bar{X}$</u>			<u>%</u>		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	8.67	6.75	7.90	100	75	90
	O	3.50	5.63	4.56	50	75	63
	Tot	5.71	6.00	5.85	71	75	73
Physical Contact	Y	10.33	15.50	12.40	83	100	90
	O	12.00	3.63* ^c	7.81	75	63	69
	Tot	11.29	7.58	9.58	79	75	77
Hug/ Kiss	Y	.50	.00	.30	33	0	20
	O	.13	.38	.25	13	25	19
	Tot	.29	.25	.27	21	17	19
Look	Y	22.17	25.50	23.50	100	100	100
	O	23.38	19.25	21.31	100	100	100
	Tot	22.86	21.33	22.15	100	100	100
Vocalize	Y	.00	.25	.10	0	25	10
	O	2.00	3.00	2.50	25	38	31
	Tot	1.14	2.08	1.58	14	33	23
Positive Behavior	Y	.50	1.50	.90	33	50	40
	O	2.51	1.63	2.06	38	38	38
	Tot	1.65	1.59	1.62	36	42	39
Negative- Behavior	Y	.33	.50	.40** ^b	33	50	40* ^b
	O	.00	.00	.00	0	0	0
	Tot	.14	.17	.15	14	17	15

* $p \leq .10$

** $p \leq .05$

Significance level of the ^a maltreatment difference,
^b age difference, and ^c maltreatment x age difference.

Age as a Variable

There were few age-related differences in children's behaviors to caregivers during separation episodes, as shown in Table 18. A MANOVA indicated no difference between younger and older children when all behaviors were considered. However, younger children directed more negative behavior to caregivers (which involved taking away objects) than did older children, who never engaged in this type of behavior, $F(1,22) = 9.82$, $p \leq .005$.

CHILDREN'S BEHAVIORS TO PEERS DURING SEPARATION

Frequency of Child Behavior

Table 19 presents the mean number of occurrences, the percentage of total time, and the percentage of children showing behaviors directed toward peers during the separation condition. In their first encounters after mothers had gone, almost all the children looked at and stayed near their peers; these responses were common and averaged about 60% and 35% of the total time respectively. Although less common, other forms of peer contact also occurred. Over half the children engaged in physical contact (limited to touching in this period), and over 34% vocalized directly to peers. Finally, instances of positive, negative, and affectionate behavior were observed.

Maltreatment as a Variable

Table 20 presents the mean number of occurrences, and percentage of children by group, showing peer-directed behaviors during separation episodes. In general, maltreated children did not differ markedly from controls. No significant maltreatment effect was found in the overall MANOVA, or in the separate analyses conducted on staying near, looking at, vocalizing to, and engaging in positive behavior with peers.

TABLE 19

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Peers in Separation

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	12.27	9.38	34.1	88.5
Physical Contact	1.27	1.73	3.5	53.8
Hug/Kiss	.19	.98	.5	3.8
Look	21.08	6.95	59.0	100.0
Vocalize	.85	1.71	2.4	34.6
Positive Behavior	.46	1.03	1.3	30.8
Negative Behavior	1.04	1.29	2.9	53.8

TABLE 20

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Peers in Separation

Child Behavior		$\bar{X}$			%		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	14.67	17.75	15.90	100	100	100
	O	9.63	10.38	10.00	75	88	81
	Tot	11.79	12.83	12.27	86	92	88
Physical Contact	Y	1.50	3.50	2.30** ^b	67	100	80** ^b
	O	.50	.75	.63	25	50	38
	Tot	.93	1.67** ^a	1.27	43	67	54
Hug/ Kiss	Y	.00	1.25	.50	0	25	10
	O	.00	.00	.00	0	0	0
	Tot	.00	.42	.19	0	8	4
Look	Y	19.83	20.25	20.00	100	100	100
	O	21.38	22.13	21.75	100	100	100
	Tot	20.71	21.50	21.08	100	100	100
Vocalize	Y	.17	.00	.10	17	0	10
	O	.63	2.00	1.31** ^b	38	63	50** ^b
	Tot	.43	1.33	.85	29	42	35
Positive Behavior	Y	1.00	.25	.70	33	25	30
	O	.38	.25	.31	38	25	31
	Tot	.64	.25	.46	36	25	31
Negative Behavior	Y	1.33	1.50	1.40	50	100	70
	O	.13	1.51	.81	13	75	44
	Tot	.64	1.51** ^a	1.04	29	83** ^a	54

* $p \leq .10$

** $p \leq .05$

Significance level of the ^a maltreatment difference,
^b age difference, and ^c maltreatment x age difference.

However, group differences did emerge with regard to two categories of behavior. First, maltreated children tended to physically contact their peers more than did controls, $F(1,22) = 3.48$, $p \leq .08$. Second, children who were maltreated engaged in significantly more negative behavior, $F(1,22) = 5.26$, $p \leq .03$. This category was a composite of hitting and struggling over toys (i.e., taking and resisting takes). When these behaviors were analyzed separately, it was found that only hitting reliably differentiated maltreated and control children, $F(1,22) = 7.14$, $p \leq .01$, while struggling over toys was equally frequent in both groups. Compared to 7% of their control classmates, 67% of maltreated children were observed to hit their peers during separation, $\chi^2(1) = 10.12$, $p \leq .001$.

Age as a Variable

In the few minutes following maternal separation, age differences in children's peer behaviors were minimal. A MANOVA failed to find a significant difference in the overall peer behavior of older and younger children. However, as Table 20 indicates, two individual categories of behavior showed reliable age changes. Infants were significantly more likely to engage in direct physical contact with age mates than were older children, $F(1,22) = 9.67$, $p \leq .005$. In contrast, older children were found to verbalize to their peers more, $F(1,22) = 4.73$, $p \leq .05$.

COMPARISON OF SOCIAL BEHAVIORS DURING SEPARATION

The sections that follow compare children's social responses during separation episodes with specific regard to the effects of social object and maltreatment.

Social Object as a Variable

Figure 5 shows the mean number of occurrences of the behaviors directed to caregivers and peers by the entire sample of children during the

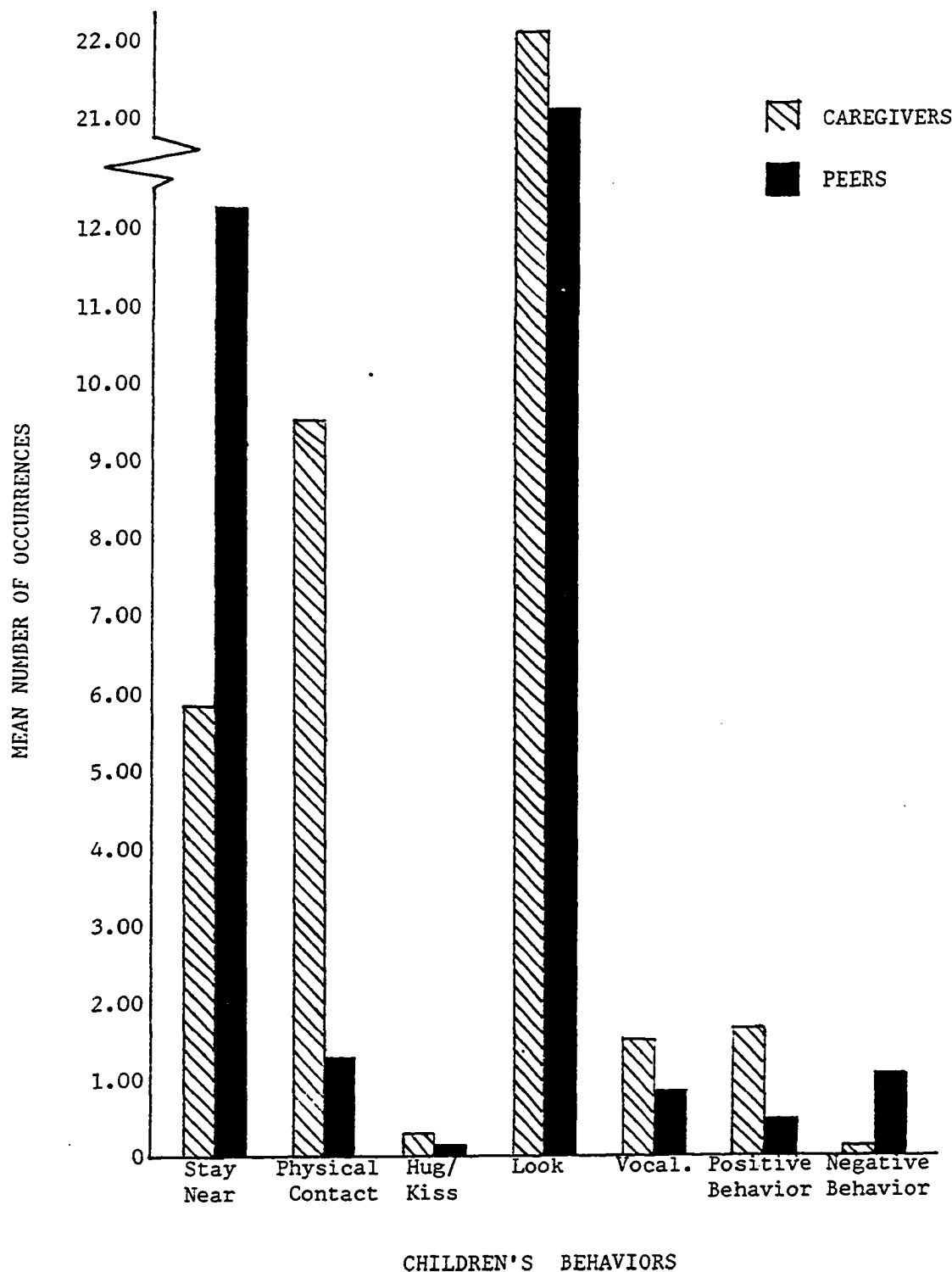


Figure 5. Mean number of 10-second periods of occurrence of children's behaviors to caregivers and peers in separation.

TABLE 21

Differences in Mean Number of Occurrences of Children's Behavior to
Caregivers and Peers in Separation

Child Behavior	To Caregiver	To Peer	Repeated Meas. F(1,25)	p $\leq$
Stay Near	5.85	12.27**	10.02	.004
Physical Contact	9.58**	1.27	17.49	.0003
Hug/Kiss	.27	.19	.11	.75
Look	22.15	21.08	.22	.64
Vocalize	1.58	.85	1.01	.32
Positive Behavior	1.62*	.46	3.08	.09
Negative Behavior	.15	1.04**	5.17	.03

separation condition. Two general points are noteworthy: first, the children did not withdraw when mothers left them, but remained responsive to social objects; and second, they reacted differentially to caregivers and peers.

Table 21 presents the results of repeated measures ANOVAs for each of the behavioral categories with social object as the within-subjects factor. These analyses indicate that, in general, when they needed comforting, children were more likely to seek out caregivers than peers. Table 21 shows that children engaged in significantly more direct physical contact with their caregivers. In their role as comforters, caregivers attempted to prevent or alleviate upset through the distraction of objects and social games; hence the greater frequency of positive behaviors like accepting toys, imitating, etc. with caregivers than with peers during this period.

On the other hand, children clearly preferred to stay near their peers rather than their caregivers during the separation condition. Proximity to peers included toy play as well as some disputes over toys. However, since peers were not as compliant as caregivers, this resulted in significantly more negative behaviors shown to peers than to caregivers.

Maltreatment and Social Behavior

As previously reported, children's maternally-related separation behaviors suggested that maltreated children were less responsive to their mothers' leaving than were controls. Whether maternal maltreatment also exerted a detrimental effect on children's responsiveness to other social objects in the absence of their mothers is now considered.

Table 22 presents the mean number of occurrences by group of children's behaviors directed to caregivers and peers following separation from mothers. To assess overall sociability, composite mean frequencies

TABLE 22

Mean Number of 10-Second Periods of Occurrence of Children's Behavior
Toward Caregivers and Peers in Separation

Child Behavior	To Caregiver			To Peer			Across Object		
	Con	Mal	Tot	Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	8.67	6.75	7.90	14.67	17.75	23.33	24.50	23.80*
	O	3.50	5.63	4.56	9.63	10.38	13.13	16.00	14.56
	Tot	5.71	6.00	5.85	11.79	12.83	17.50	18.83	18.12
Physical Contact	Y	10.33	15.50	12.40	1.50	3.50	11.83	19.00	14.70*
	O	12.00	3.63*	7.81	.50	.75	12.50	4.38*	8.44
	Tot	11.29	7.58	9.58	.93	1.67*	12.21	9.25	10.85
Hug/ Kiss	Y	.50	.00	.30	.00	1.25	.50	1.25	.80
	O	.13	.38	.25	.00	.00	.13	.38	.25
	Tot	.29	.25	.27	.00	.42	.29	.67	.46
Look	Y	22.17	25.50	23.50	19.83	20.25	42.00	45.75	43.50
	O	23.38	19.25	21.31	21.38	22.13	45.00	41.62	43.31
	Tot	22.86	21.33	22.15	20.71	21.50	43.71	43.00	43.38
Vocalize	Y	.00	.25	.10	.17	.00	.17	.25	.20
	O	2.00	3.00	2.50	.63	2.00	2.63	5.00	3.81*
	Tot	1.14	2.08	1.58	.43	1.33	1.57	3.42	2.42
Positive Behavior	Y	.50	1.50	.90	1.00	.25	1.50	1.75	1.60
	O	2.51	1.63	2.06	.38	.25	2.88	1.88	2.38
	Tot	1.65	1.59	1.62	.64	.25	2.29	1.83	2.08
Negative Behavior	Y	.33	.50	.40**	1.33	1.50	1.66	2.00	1.80
	O	.00	.00	.00	.13	1.51	.13	1.51	.81
	Tot	.14	.17	.15	.64	1.51**	.78	1.68*	1.19

*p ≤ .10

**p ≤ .05

for each behavioral category were derived by summing across social object (see the last columns of Table 22). This served as an indication of the extent to which maltreated and control children engaged in particular behaviors without regard to whether they were directed to caregivers or peers. No significant maltreatment effect was found in the MANOVA conducted on all categories of behavior. ANOVAs conducted on individual categories also revealed no significant group differences. There was, however, a tendency for maltreated children to engage in more negative behavior during this period, $F(1,22) = 3.48, p \leq .08$.

Group differences emerged in the patterning of this sociability, when relative responses to caregivers and peers were compared. Figure 6 shows the total mean number of occurrences by group of all the behaviors directed to caregivers and to peers (listed in Table 22) during the separation condition. It may be seen that, compared to controls, maltreated children engaged in more peer but less caregiver contact. A repeated measures ANOVA indicated a significant group x social object interaction effect when all behavior was considered, $F(1,22) = 4.76, p \leq .05$.

The specific variables sensitive to this effect were hug/kiss and physical contact. Figure 7 shows the mean number of occurrences of children's hugging and kissing directed to caregivers and to peers. Maltreated children were more affectionate to peers than caregivers, while the reverse was true for control children, $F(1,22) = 4.89, p \leq .04$. Children's physical contact behavior, shown in Figure 8, followed a similar pattern. Maltreated children touched caregivers less, but peers more than did controls, $F(1,22) = 4.20, p \leq .06$.

In summary, the separation data suggest that differences between maltreated and control children appeared, not in their overall sociability, but in the way in which this sociability was patterned. Control children,

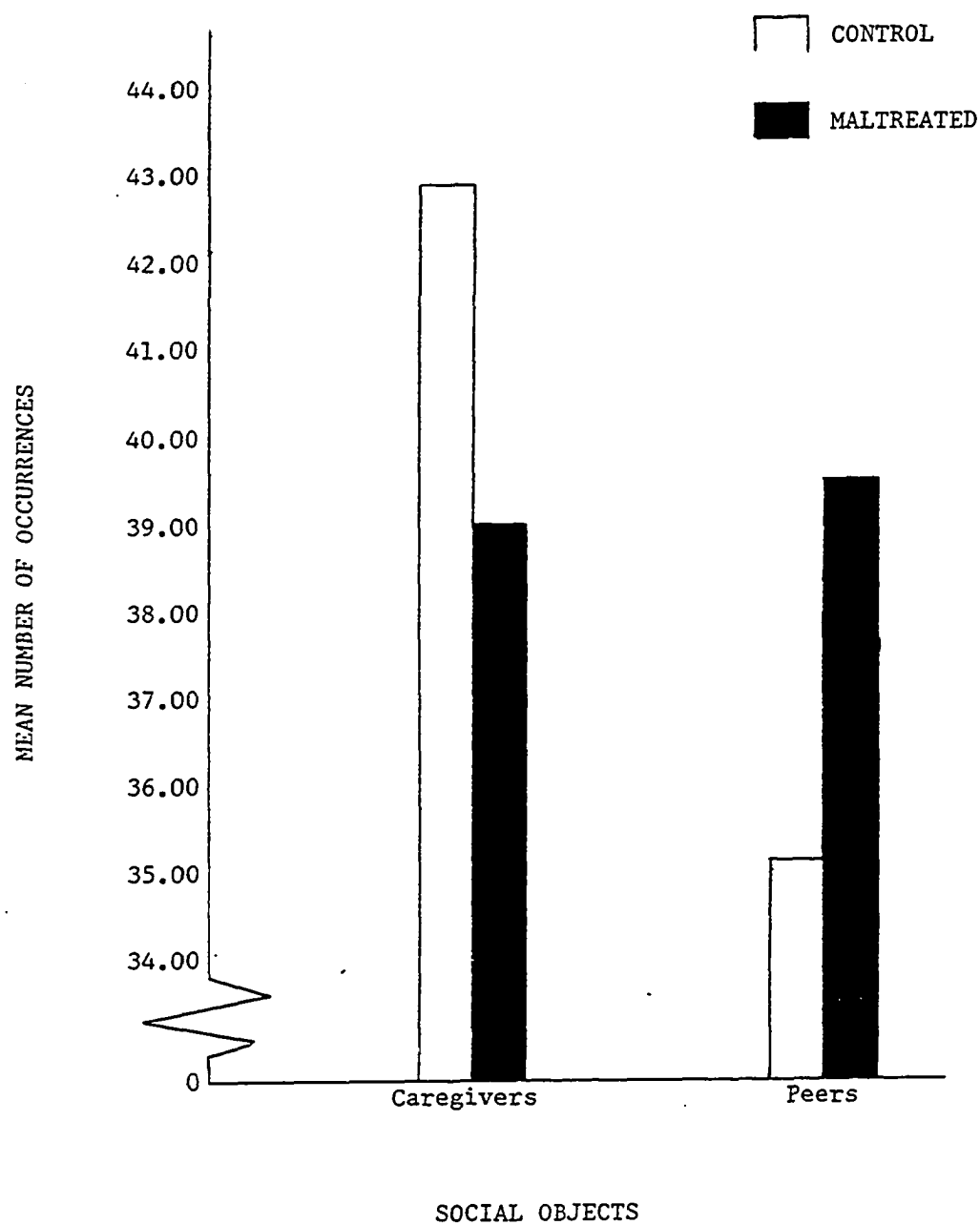


Figure 6. Total mean number of occurrences of all behavior shown by control and maltreated children to different social objects in separation.

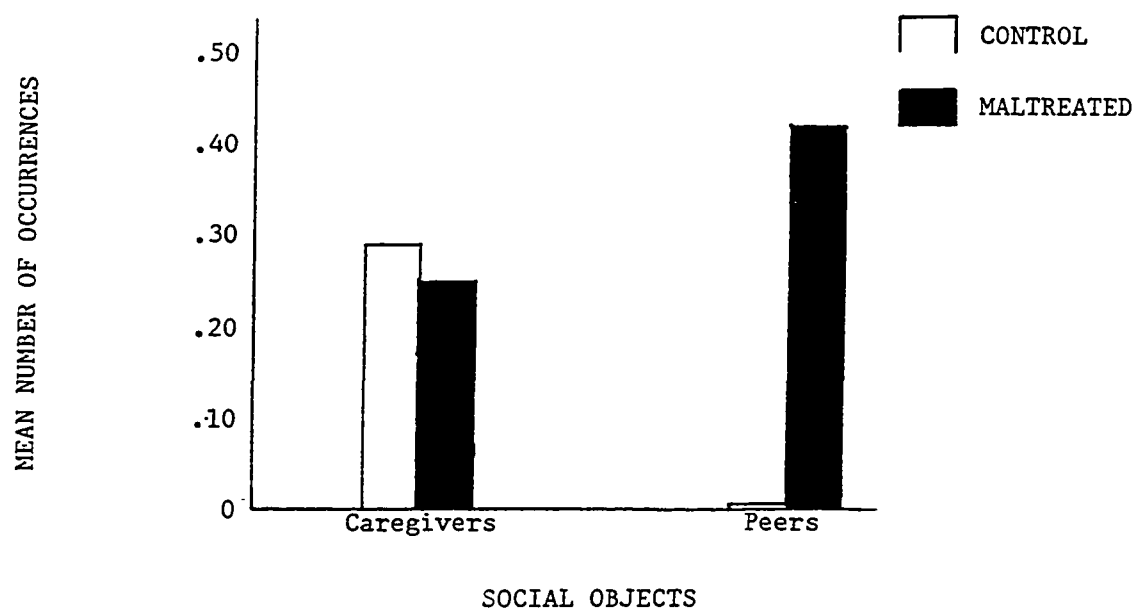


Figure 7. Mean number of occurrences of HUG/KISS in separation.

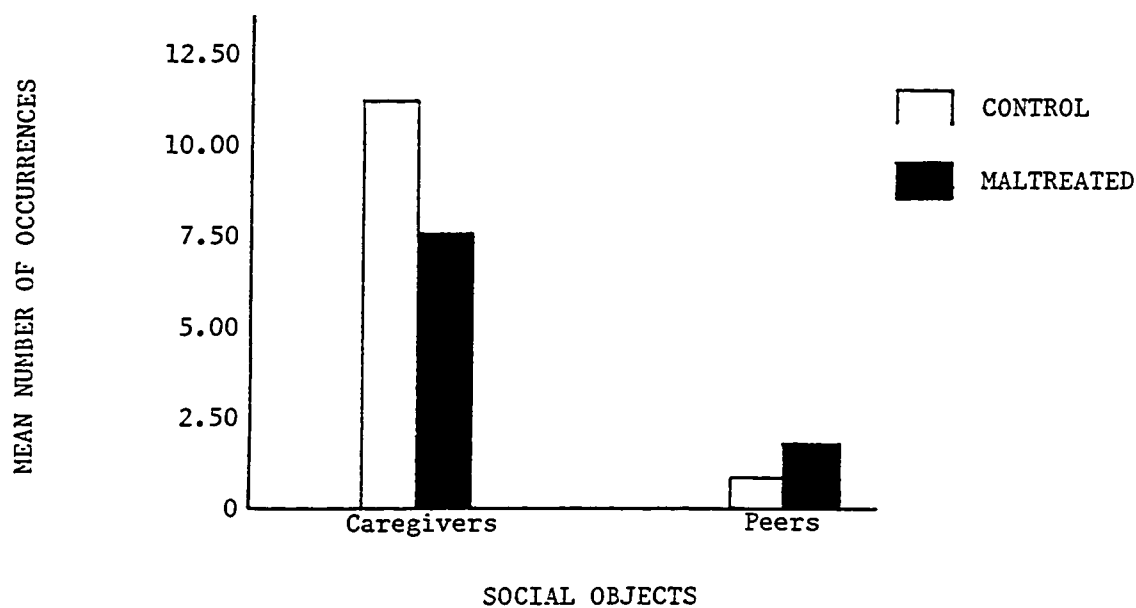


Figure 8. Mean number of occurrences of PHYSICAL CONTACT in separation.

who were relatively more mother-oriented during departure episodes, transferred their interpersonal focus to caregivers once mothers had gone. Maltreated children, on the other hand, maintained in separation episodes the relatively greater involvement with peers they first showed in departure.

BEHAVIOR DURING REUNION

In this section, first mothers' behaviors as they reunited with their youngsters are considered, and then children's responses to mothers, to caregivers, and to peers in this period are analyzed. Finally, children's overall social behavior during reunion is examined.

MATERNAL BEHAVIOR DURING REUNION

Unlike laboratory studies of attachment, the present research assessed maternal responses during naturally-occurring reunions, when mothers returned to the day care center at the end of the day. Maternal behaviors considered to be important in reunion situations include greeting, proximal contact, verbal, and affectively positive responses directed to the child.

Frequency of Maternal Behavior

Table 23 presents the mean number of occurrences, percentage of total time, and percentage of mothers who directed behaviors to their children during reunion episodes. In addition to spending over 60% of the time looking at their children, returning mothers actively promoted contact with their children. Almost 75% displayed some type of greeting, and 58% verbalized directly to their children, informing, instructing, and/or questioning them. Proximal contact was also frequent during this period: 65% of mothers stayed near their children, and 30% engaged in direct

TABLE 23

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Mothers (N = 26) Showing Behavior
Toward Children in Reunion

Mother Behavior	$\bar{X}$	SD	% Time	% Mothers
Stay Near	1.58	1.55	17.6	65.4
Physical Contact	.58	.95	6.4	30.8
Caretake	1.81	2.21	20.1	53.8
Look	5.42	1.53	60.2	100.0
Verbalize	1.31	1.44	14.6	57.7
Greet	1.42	1.42	15.8	73.1
Positive Behavior	.85	1.57	9.4	38.5
Negative Behavior	.00	.00	.0	0.0

physical contact (i.e., touching or holding hands). Caretaking, which necessarily involved proximity, occupied over half the mothers. Only positive behaviors were expressed during reunion: almost 40% of the mothers showed at least one of the following positive responses: soothing, praising, hugging, kissing, and smiling/laughing.

Maltreatment as a Variable

Following a period of separation, the mother's response to her child when the pair are reunited is thought to be a sensitive indicator of the quality of maternal attachment. Table 24 presents the mean number of occurrences and the percentage of mothers by group showing behaviors to their children during reunion. In general, the mother's responsiveness to her child differed as a function of whether or not she was a maltreating parent. A MANOVA performed on all categories of maternal behavior indicated a difference between maltreating and control mothers, $F(7,16) = 2.37, p \leq .07$.

Maltreating mothers greeted their children significantly less often, $F(1,22) = 10.42, p \leq .004$, and tended to speak to them less, $F(1,22) = 2.89, p \leq .10$, than did control mothers. In addition, they did not stay near or engage in physical contact as often, but neither of these categories showed significant group differences. However, when staying near and physical contact behaviors were combined, it was found that maltreating mothers tended to avoid proximal contact with their children, $F(1,22) = 3.66, p \leq .07$. Of special interest in this regard is maternal touching, since investigators (e.g., Ainsworth, 1979; George & Main, 1979) have suggested that rejecting mothers show an aversion to close bodily contact. In the present study, the category of physical contact included both touching and holding hands. This latter behavior showed no significant group difference, possibly because handholding in

TABLE 24

Mean Number of 10-Second Periods of Occurrence and Percentage of Mothers Showing Behavior Toward Children in Reunion

Mother Behavior		<u>$\bar{X}$</u>			<u>%</u>		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	1.17	1.25	1.20	50	75	60
	O	2.13	1.50	1.81	88	50	69
	Tot	1.71	1.42	1.58	71	58	65
Physical Contact	Y	.33	.00	.20	17	0	10
	O	1.13	.50	.81 ^a	50	38	44 ^b
	Tot	.79	.33	.58	36	25	31
Caretake	Y	3.33	3.25	3.30 ^a	67	75	70
	O	.88	.88	.88	38	50	44
	Tot	1.93	1.67	1.81	50	58	54
Look	Y	6.00	6.00	6.00	100	100	100
	O	5.50	4.63	5.06	100	100	100
	Tot	5.71	5.08	5.42	100	100	100
Verbalize	Y	1.50	.50	1.10	67	50	60
	O	1.88	1.00	1.44	63	50	56
	Tot	1.71 ^a	.83	1.31	64	50	58
Greet	Y	3.00	.75	2.10 ^b	100	75	90
	O	1.38	.63	1.00	75	50	63
	Tot	2.07 ^a	.67	1.42	86	58	73
Positive Behavior	Y	1.67	1.00	1.40	50	50	50
	O	.88	.13	.50	50	13	31
	Tot	1.21	.42	.85	50	25	39
Negative Behavior	Y	.00	.00	.00	0	0	0
	O	.00	.00	.00	0	0	0
	Tot	.00	.00	.00	0	0	0

*p ≤ .10

**p ≤ .05

Significance level of the ^a maltreatment difference,

^b age difference, and ^c maltreatment x age difference.

reunion was used by some mothers to expedite the process of leaving the center rather than as an expression of affection. However, when touching alone was considered, it was found that no maltreating mothers engaged in this behavior compared to almost 30% of control mothers, $\chi^2(1) = 3.86$, $p \leq .05$.

Five behaviors which were positive in tone, but too low in frequency of occurrence to permit individual analysis, were combined in the positive behavior category. Although maltreatment did not significantly affect the overall amount of positive behavior mothers showed to their children during reunion, it did affect the range of behaviors used. As a group, control mothers showed all five types of behavior, while maltreating mothers displayed only two (kissing and soothing). Compared to 29% of the controls, not one maltreating mother hugged, praised or smiled at her child, $\chi^2(1) = 3.86$, $p \leq .05$. Our results are similar to those of Tracy and Ainsworth (1981), who also found that rejecting mothers showed relatively more kissing and less hugging than other groups of mothers. While Tracy and Ainsworth (1981) suggest that rejecting mothers use a different mode of expressing affection than other mothers, our data also indicate that their affectionate behaviors may be considerably less varied.

Finally, during reunion maltreating mothers more often directed their attention away from their offspring than did control mothers. They spent more time looking at caregivers, $F(1,22) = 3.96$, $p \leq .06$, and talking to them, $F(1,22) = 2.89$, $p \leq .10$, compared to control mothers.

In summary, maltreating mothers showed less engagement with their children when they were reunited with them. Compared to control mothers, they engaged in less greeting, less proximal contact and fewer kinds of positive responses.

Age as a Variable

Maternal behaviors during reunion showed significant differences as a function of the child's age. A MANOVA performed on all categories of behavior indicated that mothers of older and younger children differed in their overall reunion behavior, $F(7,16) = 3.56, p \leq .02$. As Table 24 shows, mothers of infants engaged in more caretaking activities, $F(1,22) = 8.98, p \leq .01$, and somewhat longer greetings, $F(1,22) = 3.55, p \leq .08$. Mothers of older children tended to engage in more physical contact (touching and holding hands), $F(1,22) = 3.37, p \leq .09$.

As in departure episodes, the age of the child affected the length of reunion episodes. Mother-infant dyads took significantly longer to leave the playroom after distal contact was made than mother-older child pairs did, $F(1,22) = 5.00, p \leq .04$, due primarily to increased caretaking demands.

CHILDREN'S BEHAVIORS TO MOTHERS DURING REUNION

Frequency of Child Behavior

Research has shown that maternal absence tends to heighten the attachment behaviors shown by home-reared children in laboratory reunion situations. Table 25 presents the mean number of occurrences, percentage of total time, and percentage of children who engaged in various maternally-directed behaviors following reunion with their mothers. The data indicate that children who attended a full-time daycare center were highly responsive to their returning mothers. All the children looked at their mothers, spending almost 3/4 of the time in this activity. Over 26% of the children showed some type of greeting, by calling the mother, lifting arms, clapping and/or waving, and an equal number hugged and kissed mothers.

TABLE 25

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Mothers in Reunion

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	3.35	2.68	37.2	88.5
Physical Contact	.58	.95	6.4	30.8
Hug/Kiss	.42	.90	4.7	26.9
Look	6.50	1.45	72.2	100.0
Vocalize	.42	1.44	4.7	11.5
Play With	.04	.20	.01	3.8
Greet	.38	.70	4.2	26.9
Positive Affect	.88	1.18	9.8	46.2
Negative Affect	.46	1.21	5.1	15.4
Movement	2.96	2.82	32.9	73.1
Toy Play	1.73	2.15	19.2	53.8

Positive affect (smiling/laughing) occurred twice as often as negative affect (fretting and crying). No angry or protesting responses were observed. When the affective behaviors of individual children were examined, a high degree of consistency was found. Children showed either positive affect (46% of the sample) or negative affect (15%), but never both. Only 38% of the children failed to show any kind of affective response.

Although orientation to the mother was clearly the major activity in reunion, it was not incompatible with the occurrence of play behaviors. Many children played with toys and moved around the classroom before leaving the center for the day.

Maltreatment as a Variable

Because of its effects on the child's attachment behaviors, reunion has been the major situation used to assess the nature of the child's relationship to its mother. Ainsworth and her colleagues, for example, used infant reunion behaviors to identify qualitatively different patterns of attachment. Secure attachment was distinguished by such positive behavioral criteria as happy greetings, seeking and maintaining contact, and positive emotional and affectional responses; insecure attachment, by the degree of negative and avoidant behaviors.

Table 26 presents the mean number of occurrences and the percentage of children by group directing behaviors to mothers during reunion. Perhaps because reuniting with mothers following an all-day separation proved to be a powerful elicitor of attachment behaviors in general, frequency of occurrence measures were not able to differentiate the groups. Thus, although maltreated children showed fewer instances of every category of maternally-directed behavior except looking, none of these group differences reached significance, and a MANOVA comparing overall behavior

TABLE 26

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Mothers in Reunion

Child Behavior		$\bar{X}$			%		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	2.33	1.75	2.10	67	75	70
	O	4.63	3.63	4.13 ^{*b}	100	100	100 ^{**b}
	Tot	3.64	3.00	3.35	86	92	88
Physical Contact	Y	.33	.00	.20	17	0	10
	O	1.13	.50	.81 ^{*b}	50	38	44 ^{*b}
	Tot	.79	.33	.58	36	25	31
Hug/ Kiss	Y	.67	.50	.60	17	50	30
	O	.38	.25	.31	25	25	25
	Tot	.50	.33	.42	21	33	27
Look	Y	6.83	7.50	7.10 ^{*b}	100	100	100
	O	5.88	6.38	6.13	100	100	100
	Tot	6.29	6.75	6.50	100	100	100
Vocalize	Y	.00	.00	.00	0	0	0
	O	1.38	.00	.69	38	0	19
	Tot	.79	.00	.42	21 ^{*a}	0	12
Play With	Y	.00	.25	.10	0	25	10
	O	.00	.00	.00	0	0	0
	Tot	.00	.08	.04	0	8	4
Greet	Y	.33	.00	.20	17	0	10
	O	.75	.25	.50	63	13	38
	Tot	.57	.17	.38	43 ^{**a}	8	27
Positive Affect	Y	1.17	1.00	1.10	67	25	50
	O	.75	.75	.75	63	25	44
	Tot	.93	.83	.88	64 ^{**a}	25	46
Negative Affect	Y	1.17	.50	.90	33	25	30 ^{*b}
	O	.00	.38	.19	0	13	6
	Tot	.50	.42	.46	14	17	15
Movement	Y	2.00	.00	1.20	67	0	40
	O	4.38	3.75	4.06 ^{**b}	88	100	94 ^{**b}
	Tot	3.36	2.50	2.96	79	67	73
Toy Play	Y	1.33	1.00	1.20	50	25	40
	O	1.50	2.63	2.06	50	75	63
	Tot	1.43	2.08	1.73	50	58	54

*p ≤ .10

**p ≤ .05

Significance level of the ^a maltreatment difference,
^b age difference, and ^c maltreatment x age difference.

produced the same result. However, the chi square analyses were sensitive to the effect of maltreatment, and indicated that more children in the control than in the maltreated group demonstrated the kinds of behavior associated with secure attachment.

To begin with, five times as many control as maltreated children greeted returning mothers, $\chi^2(1) = 3.91$, $p \leq .05$. In addition, while 21% of the control group vocalized to their mothers, no maltreated child did so, $\chi^2(1) = 2.91$, $p \leq .09$. No group differences were found in staying near mothers, perhaps because this type of behavior is strongly activated in most children after long maternal separations. However, once in proximity, no maltreated child touched his or her mother, while almost 30% of controls did so, $\chi^2(1) = 3.86$, $p \leq .05$.

Children's emotional responses also showed the effects of maltreatment. When reuniting with mothers, significantly more control than maltreated children expressed positive affect, $\chi^2(1) = 4.01$, $p \leq .05$. Although there were no group differences in negative affect, almost three times as many maltreated as control children were affectively neutral, $\chi^2(1) = 3.77$, $p \leq .06$. When these last two categories were combined, it was found that 75% of maltreated children, compared to 36% of controls, reacted to their mothers in a neutral or negative manner, $\chi^2(1) = 3.89$, $p \leq .05$.

In summary, fewer maltreated children, compared to controls, greeted, spoke to, touched, or expressed positive affect to their returning mothers. These findings suggest that maltreated children, as a group, were less securely attached to their mothers.

Age as a Variable

Recent research has demonstrated that the age changes reported in attachment are highly dependent upon the kinds of behaviors measured and

the types of situations studied. For example, while proximal behaviors directed to the mother generally decrease with age after the first 18 months of life (e.g., Lewis, 1972; Rheingold & Eckerman, 1970), proximity-seeking under certain arousal conditions remains undiminished during the same time span. Thus Maccoby and Feldman (1972) note that from ages two to three proximal forms of attachment behavior decreased when mother and child were alone together in a room full of toys, but remained at the same levels when a stranger was introduced into the room. In the present study, reunion with mothers following a full day's separation remained a strong stimulus for eliciting attachment-related behaviors throughout the age span studied. A MANOVA revealed no significant difference between younger and older children in their overall behavior to mothers.

As Table 26 demonstrates, children's proximal behaviors did not decrease with age in daycare reunions. In fact, there was a tendency for older children to stay near and physically contact their mothers more than infants did, $F(1,22) = 3.82$, $p \leq .07$, and $F(1,22) = 3.02$, $p \leq .10$, respectively. At the same time, however, older children moved around the room significantly more than younger children, $F(1,22) = 9.01$, $p \leq .007$, often taking them further away from their mothers. Infants tended to spend more time looking at mothers, $F(1,22) = 3.21$, $p \leq .09$.

Younger and older children displayed similar amounts of positive affect to returning mothers. However, negative affect tended to decrease with age; fewer older children fretted and cried in the presence of their mothers than younger children, $\chi^2(1) = 2.67$, $p \leq .10$.

CHILDREN'S BEHAVIORS TO CAREGIVERS DURING REUNION

Frequency of Child Behavior

Children's last contact with caregivers occurred during maternal reunion, when children and their mothers were preparing to leave the day-care center. Table 27 presents the mean number of occurrences, the percentage of total time, and the percentage of children showing behaviors directed toward caregivers during this period.

Over 75% of the children looked at caregivers; this was the most common response to caregivers and it occurred over 20% of the time. All other forms of contact were very brief (occurring less than 3% of the time). About 12% of the children stayed near caregivers, and 8% engaged in physical contact during the reunion condition. In addition, 8% kissed caregivers before leaving them. Finally, 15% of the children waved or said good-bye, but since these farewells were usually given when the child was at the door, it was impossible to specify to whom they were directed. In general, these results confirm the power of the reunion situation to heighten children's orientation to their mothers.

Maltreatment as a Variable

When reuniting with mothers, both maltreated and control children showed relatively little interest in caregivers. Table 28 presents the mean number of occurrences, and percentage of children by group, showing caregiver-directed behaviors during reunion. No significant group differences were found for any of the behaviors.

Age as a Variable

As Table 28 shows, younger and older children did not significantly differ in any of the behaviors they directed to caregivers before leaving them.

TABLE 27

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Caregivers in Reunion

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	.12	.33	1.3	11.5
Physical Contact	.08	.27	.9	7.7
Hug/Kiss	.08	.27	.9	7.7
Look	1.92	1.74	21.3	76.9
Caretaken	.23	.82	2.6	11.5
Wave/Say Bye	.15	.37	1.8	15.4

TABLE 28

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Caregivers in Reunion

Child Behavior		$\bar{X}$			%		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	.00	.00	.00	0	0	0
	0	.13	.25	.19	13	25	19
	Tot	.07	.17	.12	7	17	12
Physical Contact	Y	.00	.25	.10	0	25	10
	0	.13	.00	.06	13	0	6
	Tot	.07	.08	.08	7	8	8
Hug/ Kiss	Y	.00	.25	.10	0	25	10
	0	.13	.00	.06	13	0	6
	Tot	.07	.08	.08	7	8	8
Look	Y	1.83	2.25	2.00	83	75	80
	0	1.13	2.63	1.88	75	75	75
	Tot	1.43	2.50	1.92	79	75	77
Wave/ Say Bye	Y	.33	.00	.20	33	0	20
	0	.13	.13	.13	13	13	13
	Tot	.21	.08	.15	21	8	15

*p ≤ .10

**p ≤ .05

TABLE 29

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Peers in Reunion

Child Behavior		$\bar{X}$			%		
		Con	Mal	Tot	Con	Mal	Tot
Look	Y	2.00	.25	1.30	100	25	70
	O	1.00	.50	.75	63	38	50
	Tot	1.43** ^a	.42	.96	79** ^a	33	58

*p ≤ .10

**p ≤ .05

Significance level of the ^amaltreatment difference.

CHILDREN'S BEHAVIORS TO PEERS DURING REUNION

Frequency of Child Behavior

Children directed only one behavior to their peers during reunions with mothers: 58% looked at peers for an average of 10% of the time. No direct peer contact of any type was made during this period. The attention and activity of these young children were clearly centered on returning mothers, from whom they had been separated for an entire day.

Maltreatment as a Variable

As Table 29 indicates, control children looked at their peers significantly more often than did maltreated children, $F(1,22) = 8.91$, $p \leq .01$.

Age as a Variable

As Table 29 indicates, younger and older children did not differ in their visual regard of peers.

COMPARISON OF SOCIAL BEHAVIORS DURING REUNION

Social Object as a Variable

Figure 9 shows the mean number of occurrences of behaviors directed to mothers, caregivers and peers by the entire sample of children during reunion episodes. It may be seen that children were differentially oriented to their returning mothers during this period. The effect of social object on children's behavior is presented in Table 30, which gives the results of repeated measures ANOVAs performed on each variable. During reunion, children actively sought and maintained contact with mothers to the exclusion of caregivers and peers. T tests confirmed that children stayed closer to, touched, hugged and kissed, and looked at mothers significantly more than either caregivers or peers. Although minimal contact with caregivers was maintained, peers were virtually ignored, receiving only occasional glances.

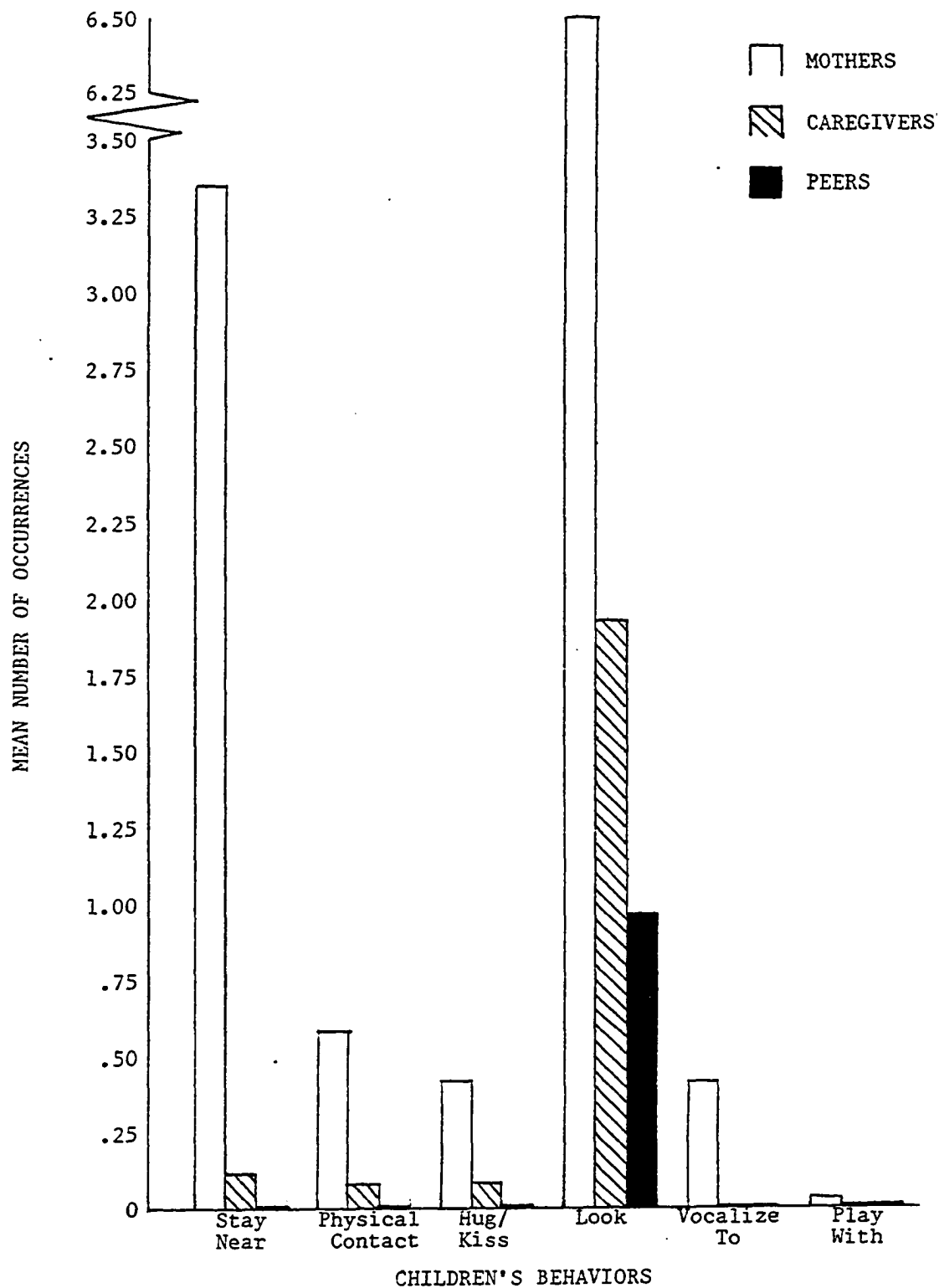


Figure 9. Mean number of 10-second periods of occurrence of children's behaviors to mothers, caregivers, and peers in reunion.

TABLE 30

Differences in Mean Number of Occurrences of Children's Behavior to Mothers, Caregivers, and Peers in Reunion

Child Behavior	To Mother	To Caregiver	To Peer	Repeated Meas. F(2,50)	p $\leq$
Stay Near	3.35**	.12	.00	40.30	.0001
Physical Contact	.58**	.08	.00	7.55	.002
Hug/Kiss	.42**	.08	.00	4.30	.02
Look	6.50**	1.92	.96	112.44	.0001
Vocalize	.42	.00	.00	2.22	.12
Play With	.04	.00	.00	1.00	.38

Important differences emerged between departure and reunion episodes. Although children directed significantly more proximal, physical contact, and affectionate behaviors to mothers during both conditions, looking and vocalizing were also mother-centered only during reunion. In departure, children were inclined to play with, talk to, and stay near peers; in reunion, peer contact was markedly reduced. The finding that, in reunion, unlike departure, social behaviors were essentially mother-directed supports the conclusion from laboratory studies that attachment behaviors are more strongly evoked when children reunite with mothers, rather than when they separate from them.

Maltreatment and Social Behavior

Table 31 presents the mean number of occurrences by group of children's responses to mothers, caregivers, and peers during reunion episodes. Summing across social objects for each behavioral category permitted an assessment of group differences in overall sociability (see the last columns of Table 31). A MANOVA performed on all categories of behavior showed no overall difference between maltreated and control children, and ANOVAs for individual behavioral categories yielded similar results. As in departure and separation conditions, maternal maltreatment did not inhibit children's overall sociability during reunion.

Because so few behaviors were directed to peers and caregivers, it was not possible to meaningfully compare the groups in their overall (or most of their individual) response(s) to the different people present during reunion episodes. Looking, the only behavior shown to mothers, caregivers and peers, did show a significant group x social object interaction effect, $F(2,46) = 4.00$, $p \leq .03$. As demonstrated in Figure 10, compared to controls, maltreated children looked more at mothers and caregivers and less at peers. Their heightened level of adult-directed visual

TABLE 31

Mean Number of 10-Second Periods of Occurrence of Children's Behavior
Toward Mothers, Caregivers, and Peers in Reunion

Child Behavior	To Mother			To Caregiver			To Peer			Across Object		
	Con	Mal	Tot	Con	Mal	Tot	Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	2.33	1.75	2.10	.00	.00	.00	.00	.00	2.33	1.75	2.10
	O	4.63	3.63	4.13*	.13	.25	.00	.00	.00	4.75	3.88	4.31*
	Tot	3.64	3.00	3.35	.07	.17	.00	.00	.00	3.71	3.17	3.46
Physical Contact	Y	.33	.00	.20	.00	.25	.00	.00	.00	.33	.25	.30
	O	1.13	.50	.81*	.13	.00	.00	.00	.00	1.25	.50	.88*
	Tot	.79	.33	.58	.07	.08	.00	.00	.00	.86	.42	.65
Hug/ Kiss	Y	.67	.50	.60	.00	.25	.00	.00	.00	.67	.75	.70
	O	.38	.25	.31	.13	.00	.00	.00	.00	.50	.25	.38
	Tot	.50	.33	.42	.07	.08	.00	.00	.00	.57	.42	.50
Look	Y	6.83	7.50	7.10*	1.83	2.25	2.00	2.00	.25	10.67	10.00	10.40
	O	5.88	6.38	6.13	1.13	2.63	1.88	1.00	.50	8.00	9.50	8.75
	Tot	6.29	6.75	6.50	1.43	2.50	1.92	1.43**	.42	9.14	9.67	9.38
Vocalize	Y	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	O	1.38	.00	.69	.00	.00	.00	.00	.00	1.38	.00	.69
	Tot	.79	.00	.42	.00	.00	.00	.00	.00	.79	.00	.42
Play With	Y	.00	.25	.10	.00	.00	.00	.00	.00	.00	.25	.10
	O	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Tot	.00	.08	.04	.00	.00	.00	.00	.00	.00	.08	.04

*p ≤ .10

**p ≤ .05

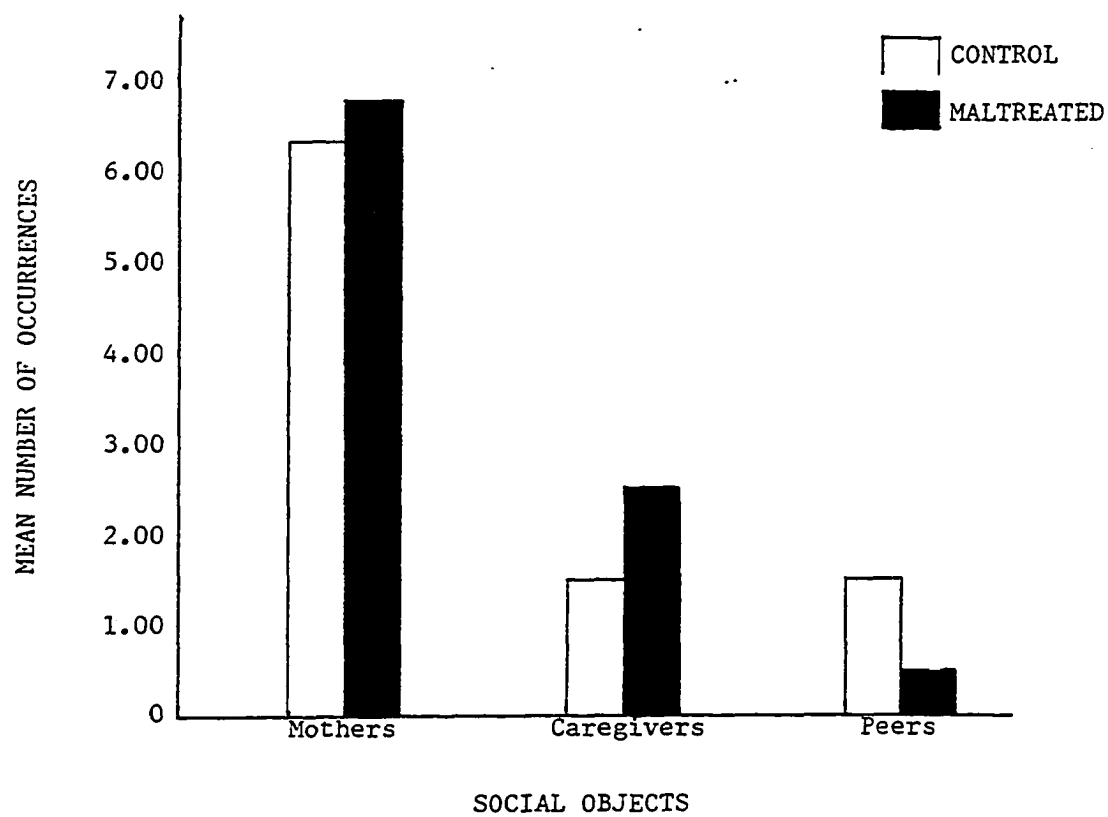


Figure 10. Mean number of occurrences of LOOK in reunion.

regard may reflect a social wariness in maltreated children precipitated by the return of their mothers.

BEHAVIOR DURING FREE PLAY

This section describes the kinds of behaviors shown by young children in an unstructured, familiar setting in which space, toys, peers and adults were freely available. It is important to emphasize that the 60 minutes of free play data were collected only during periods in which the target child was free to initiate or participate in activities and interactions of his/her own choice. Specifically excluded from consideration were those intervals when caretaking tasks were being performed (e.g., diaper changing, feeding), since these routines were almost never initiated by the child. Our focus was, therefore, on the child's self-initiated behaviors as they occurred within a social context.

Children's affect, movement, and toy play, caregiver-directed, and peer-directed behaviors are presented in turn, followed by an analysis of overall free play behavior.

CHILDREN'S AFFECT, MOVEMENT, AND TOY PLAY DURING FREE PLAY

Frequency of Child Behavior

Table 32 presents the mean number of occurrences, percentage of total time, and percentage of children who showed affective and motor behaviors and toy play during free play. Shown by virtually all children at some point during free play, these responses sometimes had no clear social referent. In general, the children spent almost 2/3 of the time playing with toys, and about 20% of the time in vigorous motor activities, such as crawling, running, throwing, dancing, riding, climbing, etc. Vocalizing in an apparently non-directed fashion (i.e., singsonging,

TABLE 32

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Affect, Movement, Toy Play,
and Other Behavior in Free Play

Child Behavior	$\bar{X}$	SD	% Time	% Children
Positive Affect	19.92	16.79	5.5	100.0
Negative Affect	8.58	4.14	2.4	92.3
Movement	63.50	29.41	17.6	96.2
Toy Play	224.38	43.74	62.3	100.0
Play w/Self	12.92	14.40	3.6	96.2
Vocalize Non-Directed	64.73	26.28	18.0	100.0

repeating a sound, humming, etc.) occurred about 20% of the time. There was twice as much positive affect (i.e., smiling/laughing) as negative affect, which included fretting, crying, anger, and frowning. Within the category of negative affect, anger was the most common emotion displayed.

Maltreatment as a Variable

Children's playroom behaviors during separation from their mothers were sensitive to the effects of maltreatment. As reported previously, during the first two minutes without their mothers, maltreated children showed less affect and more behavior that was not socially oriented (e.g., toy play, movement) than control children. That these group differences indicate differential reactions to maternal loss rather than the long-term effects of maltreatment on these behavioral systems is suggested by the children's subsequent free play behaviors.

Table 33 presents the mean number of occurrences and percentage of children by group showing affect, movement, and toy play during free play throughout the day. As the data indicate, there were no significant differences in any of these behaviors as a function of maltreatment, in terms of either frequency of occurrence or percentage of children so responding. A MANOVA on these categories failed to indicate an overall difference between maltreated and control groups.

Age as a Variable

There were age differences in children's playroom behaviors during free play episodes. A MANOVA conducted on the behavioral categories shown in Table 33 indicated a significant difference between younger and older children, $F(6,17) = 3.56$, $p \leq .02$. Older children engaged in more gross motor activity than infants, $F(1,22) = 8.48$, $p \leq .008$, although toy play did not increase in frequency with age. Overall amounts of negative and positive affect showed no age differences. However, when the

TABLE 33

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Affect, Movement, Toy Play, and Other Behavior in Free Play

Child Behavior		<u>$\bar{X}$</u>			<u>%</u>		
		Con	Mal	Tot	Con	Mal	Tot
Positive Affect	Y	13.83	12.25	13.20	100	100	100
	O	26.88	21.38	24.13	100	100	100
	Tot	21.29	18.33	19.92	100	100	100
Negative Affect	Y	8.83	10.25	9.40	100	100	100
	O	9.38	6.75	8.06	100	75	88
	Tot	9.14	7.92	8.58	100	83	92
Movement	Y	47.17	40.75	44.60	83	100	90
	O	88.38	62.25	75.31** ^b	100	100	100
	Tot	70.71	55.08	63.50	93	100	96
Toy Play	Y	241.17	231.25	237.20	100	100	100
	O	206.75	226.00	216.38	100	100	100
	Tot	221.50	227.75	224.38	100	100	100
Play w/Self	Y	9.83	16.50	12.50	100	100	100
	O	12.13	14.25	13.19	100	88	94
	Tot	11.14	15.00	12.92	100	92	96
Vocalize Non-Directed	Y	52.17	55.75	53.60	100	100	100
	O	75.38	68.00	71.69	100	100	100
	Tot	65.43	63.92	64.73	100	100	100

* $p \leq .10$

** $p \leq .05$

Significance level of the ^a maltreatment difference,

^b age difference, and ^c maltreatment x age difference.

four behaviors in the negative affect category were considered separately, it was found that younger children fretted, $F(1,22) = 6.27$, $p \leq .03$, and cried, $F(1,22) = 7.13$, $p \leq .02$ more than older children, while older children showed more anger than the infants, $F(1,22) = 15.00$, $p \leq .001$.

CHILDREN'S BEHAVIORS TO PEERS DURING FREE PLAY

Frequency of Child Behavior

Of particular interest for the present research are the kinds and quantity of freely occurring peer behaviors shown by young children. For the total sample, 23 types of peer-directed behavior were identified during free play episodes. These were organized into seven composite categories. Table 34 presents the mean number of occurrences, percentage of total time, and percentage of children engaging in peer-directed behaviors during free play. These categories of peer behavior were shown by all, or nearly all, of the children, except for hugging/kissing which was shown by 50% of the sample. In general, children spent equal amounts of time looking at and staying near classmates; these were by far the most common peer behaviors in the playroom, each occurring about 60% of the time. Next in frequency of occurrence, shown about 16% of the time, was the category of positive peer behavior, which included playing with, following, imitating, offering, accepting, sharing, and showing. Positive behavior occurred almost four times as often as negative behavior, a category which included hitting, pushing, taking away objects and resisting such take-overs, etc. Discrete instances of physical contact occurred about 10% of the time. Finally, vocalizing directly to peers as a main activity (that is, in the absence of either positive or negative behavior) occurred about 5% of the time.

TABLE 34

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Peers in Free Play

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	209.54	57.34	58.2	100.0
Physical Contact	30.46	13.92	8.5	100.0
Hug/Kiss	.88	1.37	.2	50.0
Look	210.42	28.40	58.5	100.0
Vocalize	17.54	21.11	4.9	88.5
Positive Behavior	55.92	51.73	15.5	100.0
Negative Behavior	14.35	7.02	4.0	96.2

Maltreatment as a Variable

Table 35 presents the mean number of occurrences and percentage of children by group directing behaviors to their peers during free play. To compare the peer behaviors of maltreated and control children, analyses were performed on each of the categories of free play behavior, and within each category on the individual behaviors. Subsequently a MANOVA was conducted on all seven categories in order to consider overall response to peers. The most striking finding from all these analyses was the lack of difference in the peer behavior of maltreated and control children. No significant maltreatment effects were revealed in the overall MANOVA or in the ANOVAs on the categories of behavior. Thus, maltreated children did not differ from controls in staying near, physically contacting, looking at, or vocalizing to their peers.

The groups also did not differ in their overall positive or negative peer behavior. However, maltreatment effects were found in several of the individual behaviors within these categories. In terms of negative behavior, children who were maltreated more often resisted agemates' attempts to take their toys away, $F(1,22) = 11.88$, $p \leq .003$. But this effect was primarily due to the behavior of younger groups, as indicated by a significant age x group interaction effect, $F(1,22) = 8.25$, $p \leq .01$. Thus, the two younger groups showed the most extreme difference (.50 for younger control subjects vs. 3.25 for younger maltreated subjects); in the older groups, levels of resisting takes were similar ($X = 1.63$ for older control subjects vs. 1.88 for older maltreated subjects).

In their positive behaviors, control children tended to share more, $F(1,22) = 3.95$, $p \leq .06$, but the percentages of children in each group who did so were comparable (64% for the maltreated group vs. 75% for controls). Control children also showed more imitating, playing with,

TABLE 35

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Peers in Free Play

Child Behavior		<u>$\bar{X}$</u>			<u>%</u>		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	179.00	151.50	168.00	100	100	100
	O	235.13	235.88	235.50 ^{**b}	100	100	100
	Tot	211.07	207.75	209.54	100	100	100
Physical Contact	Y	31.67	26.00	29.40	100	100	100
	O	34.63	27.63	31.13	100	100	100
	Tot	33.36	27.08	30.46	100	100	100
Hug/ Kiss	Y	.83	.25	.60	50	25	40
	O	1.00	1.13	1.06	63	50	56
	Tot	.93	.83	.88	57	42	50
Look	Y	197.00	196.75	196.90	100	100	100
	O	223.50	214.25	218.88 ^{*b}	100	100	100
	Tot	212.14	208.42	210.42	100	100	100
Vocalize	Y	4.67	3.75	4.30 ^b	67	75	70
	O	26.50	25.13	25.81 ^{**b}	100	100	100 ^{*b}
	Tot	17.14	18.00	17.54	86	92	88
Positive Behavior	Y	14.00	5.75	10.70	100	100	100
	O	103.75	64.63	84.19 ^{**b}	100	100	100
	Tot	65.29	45.00	55.92	100	100	100
Negative Behavior	Y	12.50	15.50	13.70	100	100	100
	O	14.75	14.75	14.75	100	88	94
	Tot	13.79	15.00	14.35	100	92	96

* $p \leq .10$

** $p \leq .05$

Significance level of the ^a maltreatment difference,

^b age difference, and ^c maltreatment x age difference.

and following, while maltreated children showed more offering, accepting, and showing objects; none of these differences were significant.

In summary, it was found that only minor differences emerged in the peer behavior of maltreated and control children, and, moreover, that these differences tended to dissipate with age. This finding is perhaps all the more surprising in light of the data (i.e., maternal departure and reunion behavior), which suggest that the maltreated children were continuing to experience a more aversive interaction with their mothers than were controls.

Age as a Variable

Responses to peers during free play were markedly affected by children's age. Table 35 presents the mean number of occurrences and percentage of children by age group showing peer-directed behaviors during this condition. A MANOVA conducted on all categories indicated a significant difference between younger and older children, $F(7,16) = 5.34$, $p \leq .003$. In general, with increasing age, social behaviors directed towards peers became more common.

Older children stayed near peers more, $F(1,22) = 12.44$, $p \leq .002$, and also tended to look at them more, $F(1,22) = 3.82$, $p \leq .06$, than did younger children. Vocalizing became more social with development. Speech directed to other children increased markedly with age, both in terms of number of occurrences, $F(1,22) = 7.44$, $p \leq .02$, and number of children showing the behavior, $\chi^2(1) = 5.43$, $p \leq .02$, while vocalizing without a clear social referent did not increase significantly with age.

Despite the expanded degree of peer contact demonstrated by older children, negative behavior did not increase with age. No group differences were found for any of the individual behaviors or for the composite category of negative behaviors shown to peers.

What did show a dramatic age-related increase, occurring almost eight times more often in the older group, was the positive behavior category, $F(1,22) = 26.01$, $p \leq .001$. Particular behaviors were found most likely to change during the first three years of life. Playing with other children (e.g., in fantasy play, doll play, building together with blocks, etc.) jumped from a mean occurrence of 1.70 in the younger group to 55.19 in the older group, $F(1,22) = 24.38$, $p \leq .0001$, becoming the most frequent form of positive peer behavior in the playroom. Almost 88% of older children, compared to 40% of younger children, engaged in some type of play with peers, $\chi^2(1) = 7.85$, $p \leq .01$. Older children also imitated, $F(1,22) = 8.50$, $p \leq .01$, and followed, $F(1,22) = 11.62$, $p \leq .003$, their peers more than did infants. In terms of group percentages, twice as many older children imitated peers, $\chi^2(1) = 4.50$, $p \leq .05$, and eight times as many followed them, $\chi^2(1) = 15.35$, $p \leq .001$. While offering toys to age-mates occurred only slightly (and non-significantly) more often in the older group, actively accepting such offers was almost seven times more frequent among older children, $F(1,22) = 5.78$, $p \leq .025$. While 56% of older children accepted toys from their peers, only 10% of infants did so, $\chi^2(1) = 5.38$, $p \leq .03$.

Two forms of peer interaction showed no pronounced age effects. Showing something to another child remained a low frequency behavior at all ages. Sharing with another child showed only a small and non-significant increase with age.

In summary, there were definite developmental changes in peer sociability during the first three years of life. Children were more likely to stay near, look at, and vocalize directly to peers as they grew older. The positive peer behaviors (of imitating, following, playing with and accepting toys from age-mates) also increased reliably with age. Conversely,

negative peer contacts, as seen in hitting, taking toys from, pushing, etc., did not become more frequent with age.

CHILDREN'S BEHAVIORS TO CAREGIVERS DURING FREE PLAY

Previous sections have considered the behavior of young children toward their caregivers during the relatively stressful events of maternal separation and reunion. The free play condition permitted an examination of the responses shown to familiar adults other than mothers when children were not under stress.

Frequency of Child Behavior

Table 36 presents the mean number of occurrences, percentage of total time, and percentage of children showing behaviors to their caregivers in an unrestricted play situation. Visual regard was the most common behavior directed to caregivers, and children spent about 50% of the time looking at their caregivers. The next most frequent behavior, staying near caregivers, occurred about 25% of the time. In general, physical contact with caregivers, which was shown in touching, being held, lap sitting and holding hands, tended to be relatively brief (averaging less than 10% of the total time). All other forms of contact were even less frequent, occurring less than 5% of the time. There was more positive than negative behavior directed to caregivers, but the majority of children showed both types. Finally, 75% of the children vocalized to their caregivers and almost 40% hugged/kissed them at some point in free play.

Maltreatment as a Variable

In general, maltreatment by mothers did not strongly affect the way children responded to their caregivers in free play. Table 37 presents the mean number of occurrences and percentage of children by group showing

TABLE 36

Mean Number of 10-Second Periods of Occurrence, Percentage of Total Time,
and Percentage of Children (N = 26) Showing Behavior
Toward Caregivers in Free Play

Child Behavior	$\bar{X}$	SD	% Time	% Children
Stay Near	85.00	42.40	23.6	100.0
Physical Contact	34.65	24.79	9.6	100.0
Hug/Kiss	.65	.98	.2	38.5
Look	170.81	36.56	47.7	100.0
Vocalize	16.08	19.92	4.5	76.9
Positive Behavior	14.81	11.51	4.1	92.3
Negative Behavior	2.65	1.98	.7	84.6

caregiver-directed behaviors in this condition. A MANOVA performed on all categories of behavior indicated no difference in the overall behavior of maltreated and control children.

Significant group differences were found in particular categories of behavior. Following a trend established during their initial contacts of the day, maltreated children continued to engage in less physical contact with their caregivers during free play, $F(1,22) = 4.79$, $p \leq .05$. However, staying near caregivers showed a group x age interaction effect; that is, with age, maltreated children were more likely to stay near their caregivers, while this behavior diminished in control groups, $F(1,22) = 3.74$, $p \leq .07$. Finally, children who were maltreated tended to look at their caregivers more, $F(1,22) = 3.94$, $p \leq .06$.

In summary, the groups did not differ in their overall behavior to caregivers in free play. However, compared to controls, maltreated children avoided actual physical contact, preferring to look at and, with increased age, to stay near their caregivers in the daycare center.

Age as a Variable

As with their peer behavior, children's behaviors to caregivers during free play differed as a function of their age group. Table 37 presents the mean number of occurrences and percentage of children by age showing caregiver-directed responses in free play episodes. A MANOVA on all categories indicated a significant difference between younger and older children, $F(7,16) = 16.64$, $p \leq .0001$.

Although staying near caregivers showed no age effects, younger children engaged in more direct physical contact with caregivers, $F(1,22) = 37.79$, $p \leq .001$, and tended to hug and kiss them more, $F(1,22) = 3.22$, $p \leq .09$. Older children, on the other hand, vocalized to their caregivers more often, $F(1,22) = 5.32$, $p \leq .04$.

TABLE 37

Mean Number of 10-Second Periods of Occurrence and Percentage of Children Showing Behavior Toward Caregivers in Free Play

Child Behavior		<u>$\bar{X}$</u>			<u>%</u>		
		Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	94.00	58.50	79.80	100	100	100
	O	73.25	103.25 ^{*c}	88.25	100	100	100
	Tot	82.14	88.33	85.00	100	100	100
Physical Contact	Y	67.67	45.25	58.70 ^{**b}	100	100	100
	O	20.88	18.38	19.63	100	100	100
	Tot	40.93 ^{**a}	27.33	34.65	100	100	100
Hug/ Kiss	Y	1.17	1.00	1.10 ^{*b}	50	100	70 ^{*b}
	O	.38	.38	.38	13	25	19
	Tot	.71	.58	.65	29	50	38
Look	Y	173.33	197.50	183.00	100	100	100
	O	147.25	179.13	163.19	100	100	100
	Tot	158.43	185.25 ^{*a}	170.81	100	100	100
Vocalize	Y	3.00	9.00	5.40	50	50	50
	O	14.75	30.75	22.75 ^{**b}	100	88	94 ^{*b}
	Tot	9.71	23.50	16.08	79	75	77
Positive Behavior	Y	8.00	14.00	10.40	100	75	90
	O	15.75	19.38	17.56	100	88	94
	Tot	12.43	17.58	14.81	100	83	92
Negative Behavior	Y	3.50	2.00	2.90	100	75	90
	O	2.00	3.00	2.50	88	75	81
	Tot	2.64	2.67	2.65	93	75	85

*p ≤ .10

**p ≤ .05

Significance level of the ^a maltreatment difference,
^b age difference, and ^c maltreatment x age difference.

There was no marked difference in the overall amount of positive behavior the older and younger children directed to caregivers, although this category increased dramatically with age when the focus was peers. However, two particular positive behaviors showed significant age effects. Compared to infants, older children followed caregivers more, $F(1,22) = 10.40$, $p \leq .004$, and were more likely to imitate them, $\chi^2(1) = 10.12$, $p \leq .001$.

In summary, there was a significant change with age in children's overall behavior toward caregivers during free play. In particular, while infants engaged in more physical contact, older children spoke more to caregivers. In their positive contacts, younger children hugged and kissed caregivers more often, while older children imitated and followed more often.

COMPARISON OF SOCIAL BEHAVIORS DURING FREE PLAY

Social Object as a Variable

Figure 11 shows the mean number of occurrences of the social responses directed to caregivers and peers by the entire sample of children during free play episodes. It may be seen that children's preference for peers over caregivers in this condition was marked. The main effect of social object on each category of behavior and corresponding significance levels are presented in Table 38. These repeated measures ANOVAs indicated that children looked at, stayed near, and directed both positive and negative behaviors to peers significantly more often than to caregivers.

Maltreatment and Social Behavior

Table 39 presents the mean number of occurrences by group of children's behaviors directed to caregivers and peers during free play episodes.

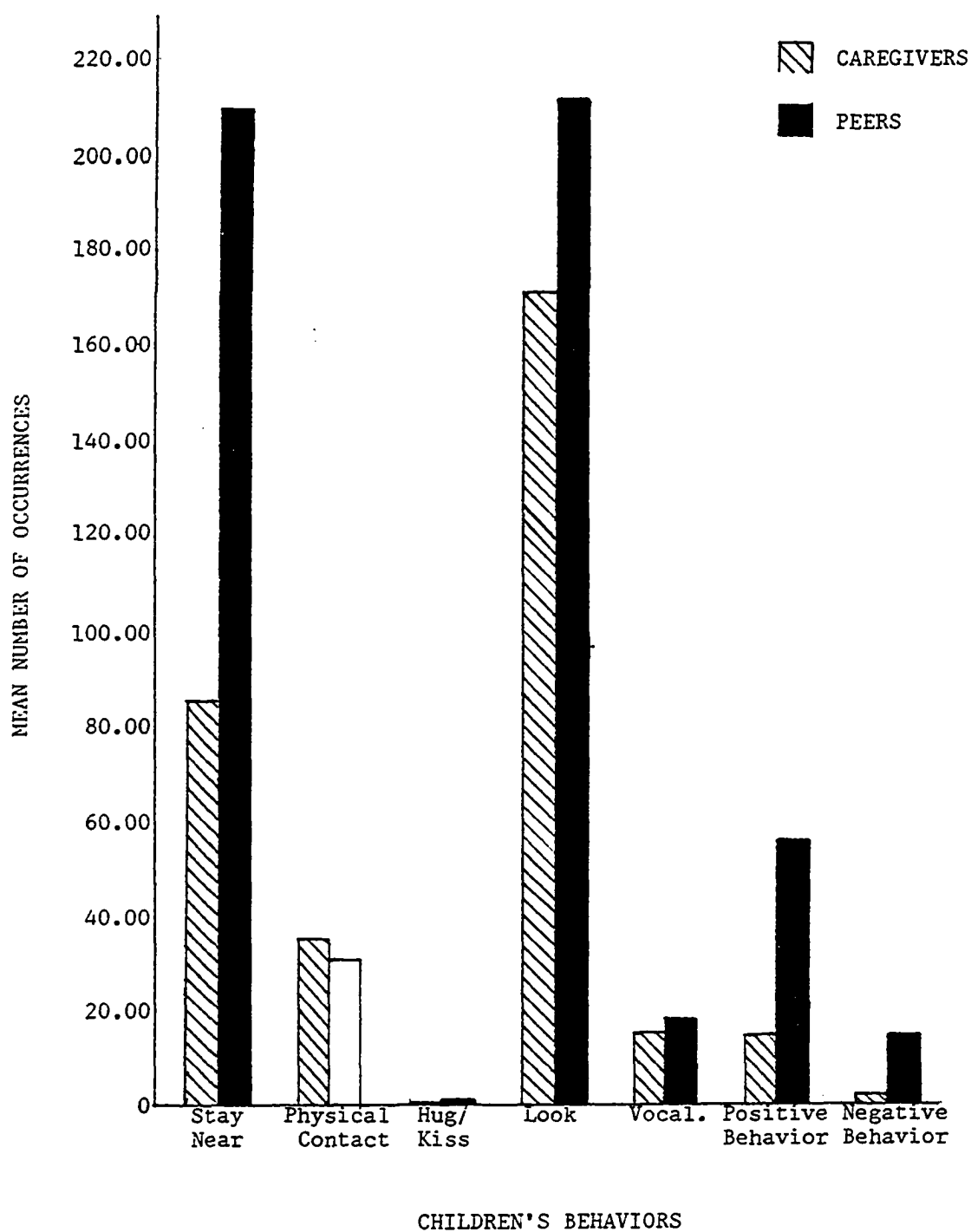


Figure 11. Mean number of 10-second periods of occurrence of children's behaviors to caregivers and peers in free play.

TABLE 38

Differences in Mean Number of Occurrences of Children's Behavior to
Caregivers and Peers in Free Play

Child Behavior	To Caregiver	To Peer	Repeated Meas. F(1,25)	p $\leq$
Stay Near	85.00	209.54**	182.97	.0001
Physical Contact	34.65	30.46	.63	.44
Hug/Kiss	.65	.88	.55	.47
Look	170.81	210.42**	21.04	.0001
Vocalize	16.08	17.54	.21	.65
Positive Behavior	14.81	55.92**	18.34	.0002
Negative Behavior	2.65	14.35**	78.39	.0001

To assess the impact of maternal maltreatment on overall sociability, composite mean frequencies were obtained for each response category by summing across social object; these are shown in the last columns of Table 39. A MANOVA performed on all categories indicated no difference in the overall sociability of maltreated and control children. In addition, there were no significant group differences found for separate categories of behavior, with one exception: maltreated children tended to avoid direct physical contact with others, when compared to controls, $F(1,22) = 4.09$, $p \leq .06$.

Few differences were found in the way the groups patterned their social responses during free play. That is, both maltreated and control children showed less caregiver and more peer behavior. A repeated measures ANOVA conducted on all responses directed to peers and to caregivers as seen in Table 39 failed to show a significant group x social objects effect. However, two distal behaviors, looking and vocalizing, did reveal such effects. Figure 12 shows the number of occurrences of socially-directed looking in each group during free play. Although visual regard of peers predominated in both groups, maltreated children looked at caregivers more and peers less relative to controls, $F(1,23) = 5.97$, $p \leq .03$. In their social speech, shown in Figure 13, both groups were equally responsive to peers. This was an increase over caregiver-directed vocalizations for controls, but a decrease for maltreated children, $F(1,23) = 5.00$, $p \leq .04$.

In summary, both maltreated and control groups showed a preference for peers over caregivers during free play episodes. For control children, this represented a reversal in interpersonal focus from earlier conditions (i.e., departure and separation) in which attention was centered primarily on adults. For maltreated children, however, there was

TABLE 39

Mean Number of 10-Second Periods of Occurrence of Children's Behavior
Toward Caregivers and Peers in Free Play

Child Behavior	To Caregiver			To Peer			Across Object		
	Con	Mal	Tot	Con	Mal	Tot	Con	Mal	Tot
Stay Near	Y	94.00	58.50	79.80	179.00	151.50	273.00	210.00	247.80
	O	73.25	103.25*	88.25	235.13	235.88	308.38	339.13	323.75**
	Tot	82.14	88.33	85.00	211.07	207.75	293.21	296.08	294.54
Physical Contact	Y	67.67	45.25	58.70**	31.67	26.00	99.33	71.25	88.10**
	O	20.88	18.38	19.63	34.63	27.63	55.50	46.00	50.75
	Tot	40.93**	27.33	34.65	33.36	27.08	74.29*	54.42	65.12
Hug/ Kiss	Y	1.17	1.00	1.10*	.83	.25	2.00	1.25	1.70
	O	.38	.38	.38	1.00	1.13	1.38	1.50	1.44
	Tot	.71	.58	.65	.93	.83	1.64	1.42	1.54
Look	Y	173.33	197.50	183.00	197.00	196.75	370.33	394.25	379.90
	O	147.25	179.13	163.19	223.50	214.25	370.75	393.38	382.07
	Tot	158.43	185.25*	170.81	212.14	208.42	370.57	393.67	381.23
Vocalize	Y	3.00	9.00	5.40	4.67	3.75	7.67	12.75	9.70
	O	14.75	30.75	22.75**	26.50	25.13	41.25	55.88	48.56**
	Tot	9.71	23.50	16.08	17.14	18.00	26.86	41.50	33.62
Positive Behavior	Y	8.00	14.00	10.40	14.00	5.75	22.00	19.75	21.10
	O	15.75	19.38	17.56	103.75	64.63	119.50	84.00	101.75**
	Tot	12.43	17.58	14.81	65.29	45.00	77.71	62.58	70.73
Negative Behavior	Y	3.50	2.00	2.90	12.50	15.50	16.00	17.50	16.60
	O	2.00	3.00	2.50	14.75	14.75	16.75	17.75	17.25
	Tot	2.64	2.67	2.65	13.79	15.00	16.43	17.67	17.00

*p ≤ .10

**p ≤ .05

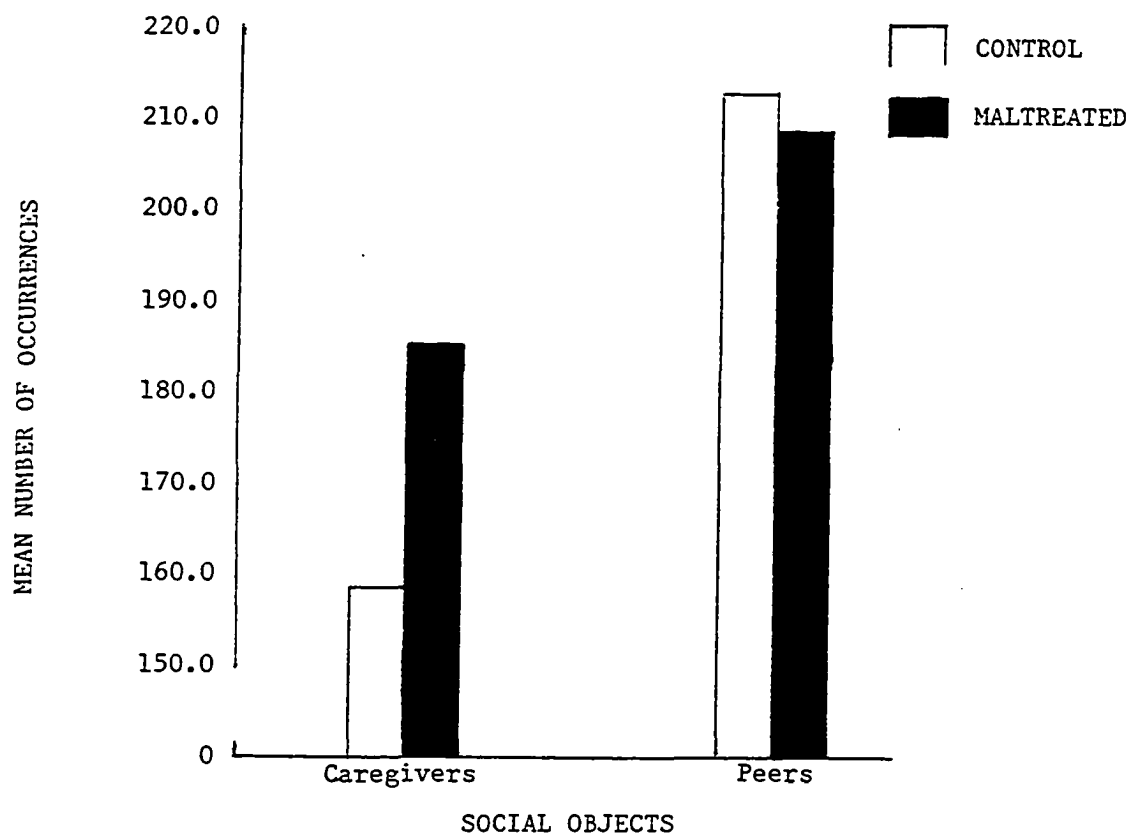


Figure 12. Mean number of occurrences of LOOK in free play.

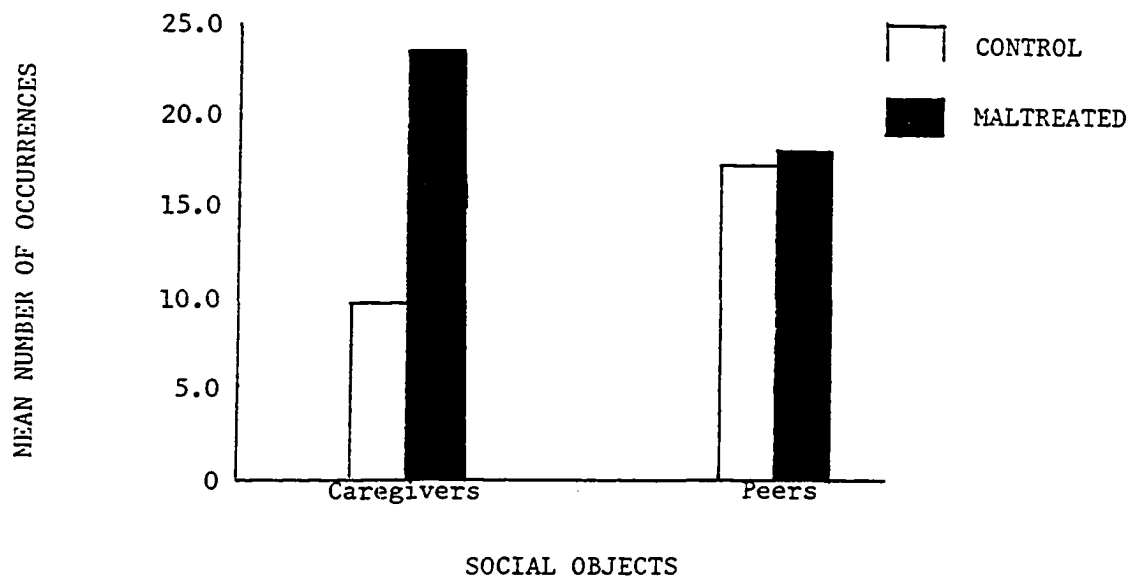


FIGURE 13. Mean number of occurrences of VOCALIZE in free play.

no such reversal, and peer interest was consistently maintained throughout conditions. In general, there was little evidence to suggest that children with less positive maternal relationships showed either disturbed peer relations or severely impaired relations with other adults.

CHAPTER IV

SUMMARY AND CONCLUSIONS

MALTREATMENT AND SOCIAL DEVELOPMENT

The ability of young children, even in the first year of life, to engage in relatively sophisticated interactions with a range of social partners has been documented by research conducted in the last decade (e.g., Durfee & Lee, 1975; Eckermann & Whatley, 1977; Vandell et al., 1980). A central issue in the study of these early social relations concerns the extent to which experiences with the mother determine the child's subsequent relationships with others. The epigenetic and social-network models described in this paper offer opposing views on this question. As a result, they disagree over whether a poor mother-infant relationship necessarily leads to impairments in the child's relations with other children or adults. In the current research, this theoretical difference was articulated in contrasting predictions concerning the effects of maternal maltreatment on the peer and caregiver relationships of young children enrolled in a daycare facility. This setting provided the opportunity to examine the social consequences of poor mothering in the light of early, consistent, and extensive exposure to peers and adults.

Research Limitations

The findings presented in this paper were based on the observation and detailed recording of children's spontaneous reactions to a variety of important social experiences encountered in their everyday lives. Although this approach is a more ecologically meaningful one, it poses its own set

of research problems. To begin with, there are inherent and well-known dangers in drawing causal conclusions from an observational study. Therefore, the current research should be viewed as a preliminary exploration into a complex and disputed issue in early social development. Further experimental investigation is necessary before the theoretical implications derived from our observations can be confirmed.

Another limitation concerns the number of children available for study. Because a full day program designed for normal infants and toddlers which also accepts children identified as maltreated is rare indeed, our sample is small, urban-based, and lower-class. Data from such a sample must, of course, be interpreted with care. In addition, the child maltreatment reported in this study consisted predominantly of severe neglect rather than extreme physical abuse. Since different types of maltreatment undoubtedly have some unique consequences, our subjects do not represent all maltreated children. Yet they shared a crucial social experience with other abused and neglected children: an impaired relationship with their mothers.

The children under study varied in the length of time they had spent in daycare beyond the two months required by research design. The relationship between time in daycare and peer behavior was not examined, however, because there were too few subjects in each age group to do so meaningfully. Nevertheless, this would have provided a stronger test of the social-network model, which predicts improvement in peer interaction skills as peer experience increases.

Finally, sequential analysis of the data was not undertaken because of the large number of behaviors under consideration. It is possible that a fine-grained analysis of interactive flow might have highlighted more subtle behavioral differences between the maltreated and control groups than those revealed in the frequency of occurrence measures.

Mother-Child Relationship

Both the epigenetic and social network models share the belief that maternal maltreatment disturbs the bond between mother and child. Our findings show significant behavioral differences between maltreating and control mothers as they separated and reunited with their children in the daycare center. To begin with, maltreating mothers tended to avoid contact with their children more than did control mothers: they maintained less proximity, spoke less to their children, greeted them less upon meeting, and said good-bye less in departures. In emotional tone, maltreating mothers were more aversive than control mothers, directing both more negative and fewer positive behaviors to their children. It is noteworthy that no maltreating mothers praised, smiled at, or hugged their children, while only maltreating mothers scolded or ignored bids for attention. In their overall behavior, this sample of maltreating mothers closely resembled groups of normal mothers studied by Ainsworth (e.g., Ainsworth et al., 1978) and Main (e.g., Main, 1977) who reject their infants. Although these findings are based on the particular situations of separation and reunion in the daycare center, they are remarkably similar to the findings of Burgess and Conger (1978), who studied abusive and neglecting families doing a variety of tasks in their homes. These investigators also found that maltreating mothers were more aversive, and less likely to engage in physical or verbal contact with their children. Together, these results support the conclusion that the behavioral correlates of maltreatment extend beyond the particular episodes of violence or neglect to define a mode of maternal responding that is generally less adequate and more negative across a range of situations.

The effects of maltreatment were also evident in children's responses to their mothers. When separating from them, maltreated children were

less likely to maintain visual or proximal contact with their mothers, to say good-bye or follow them, or to express any affect. Upon reunion, fewer maltreated children greeted, spoke to, touched, or displayed positive affect to their mothers compared to control children. No analysis of the attachment pattern of individual subjects was undertaken because the traditional Strange Situation procedure was not used in the present research, and because the number of subjects was small. However, our findings would seem to support George and Main's (1979) suggestion that maltreated children are most similar to maternally rejected infants in normal samples who display an insecure, mother-avoidant pattern of attachment in laboratory separation studies. More directly, our data point to a striking behavioral similarity between maltreated children and their mothers, with both members limiting the amount of social contact and positive feelings within the dyad. This kind of reciprocal social withdrawal was also noted by Burgess and Conger (1978) and may be a general feature of mother-child interaction in maltreating families. Some investigators (e.g., Johnson & Morse, 1968; Kempe & Kempe, 1978) have emphasized the child's role in this equation, suggesting that some infants have behavioral atypicalities which make them more difficult to care for and more susceptible to maltreatment. Our data cannot speak directly to this question, since we have no information concerning the neonatal period. However, it should be noted that for our sample, group differences in overall behavior were more pronounced for the mothers than for their children, and, further, that maltreated children maintained comparable levels of overall sociability even in the presence of their mothers when other social objects were available for contact. Thus, there was little evidence of inherent behavioral abnormalities at the time our sample of maltreated children was studied.

Child-Caregiver Relationship

To examine whether maternal maltreatment affected children's relations with other adults, their responses to familiar caregivers at the daycare center were analyzed. Previous studies have indicated that kibbutz (e.g., Fox, 1977) and daycare (e.g., Ragozin, 1980; Ricciuti, 1974) children may form attachment-like relationships to their caregivers. More specifically, Cummings (1980) concluded that, in the daycare setting, "children seemed to form a sort of intermediate attachment to caregivers, somewhere between the strong relationship developed with the mother and the lack of a relationship evident toward strangers" (p. 36). The children in the present study appeared to have formed such a relationship with their caregivers. In the absence of their mothers, especially during periods of stress, children tended to seek out contact with caregivers. However, separating and reuniting with caregivers at the daycare center did not evoke the strong reactions observed with mothers.

There was little evidence in our data to suggest that maltreatment markedly inhibited or impaired children's relationships to their caregivers. Maltreated and control children did not differ significantly in overall behavior, or in most of the specific behaviors, shown to caregivers under any of the conditions studied. However, group differences appeared in the patterning of physical closeness which were noteworthy. Control children showed more direct physical contact (e.g., touching, lap sitting) with caregivers, immediately after separating from mothers and during free play. In contrast, maltreated children engaged in relatively more proximal contact than did controls, staying closer to caregivers throughout the day, and also looking at them more. Thus, it appeared that maltreated children, with more reason to find danger in direct physical contact, displayed their attachment to caregivers through increased

proximity; controls, on the other hand, had less need to engage in such indirect behavior. Even so, it can be seen that maltreated children made important distinctions between their mothers and caregivers so that the groups were more similar in their caregiver-directed than in their maternally-directed behaviors. Rather than transferring, in total, the avoidant pattern of interaction characterizing their maternal relationships, maltreated children appear to have generalized a fearfulness of touching adults when compared to control children.

Peer Relations

In examining the broader social consequences of maternal maltreatment, peer relations are of special theoretical concern. In the social-network model, the peer system is viewed as functionally different and relatively independent from the mother-child system, so that adequate peer-interaction skills develop through direct experience with age-mates (Lewis, 1981). If this is the case, then the maltreated and control children in the present study should be similar in their peer behavior, since both groups were comparable in peer experience. In the epigenetic view, the two systems are causally and sequentially related, with an adequate mother-child relationship acting as a necessary precursor to peer competence (e.g., Ainsworth et al., 1978). Therefore, children who experienced a poor relationship with their mothers because of maltreatment should show corresponding difficulties in their peer relations. We studied peer behavior by watching the children at play during the course of several months. Casual observation revealed little difference between children based on their maltreatment classification. In neither of the classrooms did the maltreated children stand out as different, either in their sociability or play with peers. There were no obvious signs of withdrawn, passive, or overly hostile behavior which could be used to identify these children.

In the 60 minutes of formal observations obtained for each child during the free play condition, there were few statistical differences over a wide range of peer-directed behaviors that could be attributed to maltreatment. In general, the groups did not differ in their proximity-seeking, physical contact, looking, vocalizing and overall positive or negative behavior directed to peers. Maltreated children were more resistant to having their toys taken from them, and tended to share less. But differences in these particular behaviors were most extreme for the younger groups, and diminished with age. As such, they may not reflect enduring behavioral characteristics associated with maltreatment, or they may be attenuated through peer experience.

There was also no indication that maltreatment adversely affected peer contacts which occurred while mothers were preparing to leave the daycare center. However, immediately following maternal departure, maltreated children hit their classmates more, although in other peer behaviors they were comparable to controls. Our data indicate that the routine maternal separations in the daycare center, while easily tolerated by most children, were still relatively stressful events. For example, separation was found to elicit the highest degree of caregiver-oriented behavior of the four conditions studied. Since investigators agree that maltreating parents, in the face of stress, express aggressive impulses too freely (e.g., Parke & Collmer, 1975), it is not surprising that their children may do so as well. Because peers were relatively "safe" objects upon which to vent such aggression, they became its immediate targets. With the absence of this stress in free play episodes, maltreated children were no more likely than controls to display aggressive behavior. This suggests that the increase in peer aggression which occurred in the initial minutes following mothers' leaving reflected a separation reaction.

Previous reports of battered and neglected children have described them as unusually aggressive or withdrawn--in either case, unable to engage in satisfactory interactions with other children (e.g., Galdston, 1971; Green, 1978). In general, these studies have lacked an adequate methodological base, and have relied upon indirect measures of behavior, such as clinical impressions, maternal reports, etc. For the most part, they have provided little direct information on the social environment or the peer experiences of the children studied. It is thus impossible to consider the extent to which poor peer relations are a function of other factors than poor mother-infant interactions. Yet we know that maltreating families tend to be personally and socially isolated from extended family and community ties, and that these mothers, like other inadequate mothers studied, may restrict the opportunity for peer contact.

Two recent studies have used controlled, observational techniques to study child-child interaction in maltreated samples and have yielded contradictory results. Burgess and Conger (1978) were unable to find significant differences in the sibling interactions occurring among abused, neglected, and control children. In contrast, George and Main (1979), who studied abused and normal children in their respective day-care centers, found more avoidance, approach-avoidance and direct assault behavior among abused peers. However, no differences were found in approach behavior or in four other categories of aggressive behavior. Several factors may account for the discrepancies between these findings and our own. First, on the average, our sample of maltreated children started daycare earlier and had almost four months more of continuous peer experience than the abused children in George and Main's study. In fact, the control groups in their study had significantly more daycare experience (over two months) than the abused groups. Numerous studies

have shown an association between peer experience and more positive, successful and sophisticated peer behaviors in early childhood (e.g., Mueller & Brenner, 1977; Rubenstein & Howes, 1976; Shea, 1981; Vandell, Wilson & Whalen, 1981). Thus, differential peer exposure may be contributing to the discrepancy in results. Second, the daycare centers in which the observations were made differed in the two studies. The several centers used by George and Main enrolled either abused or non-abused children, while the center in the present research enrolled nearly equal numbers of both in each of the classrooms studied. It is possible that maltreated children, who may come to the playroom with more limited social experiences, do not as quickly learn adequate interactional skills when left in the company of other such children. As Furman et al. (1979) have shown, normal preschool children may function as "therapists", encouraging peer interaction and providing adequate role models.

While maltreated and control children did not appear to differ markedly in their caregiver or peer behaviors, it is possible that group differences were shown in the patterning of social behavior. If, for example, it could be shown that maltreatment decreased the likelihood of both mother-directed and peer-directed behaviors, then a linear relationship between the systems might exist, despite the fact that absolute behavioral differences reached statistical significance only in the former system. On the other hand, if these systems are relatively independent, as the social network model holds, then maltreatment should affect these interactions differentially. Children's concurrent responses to mothers, peers, and caregivers were compared (i.e., the results of group x social object interaction) in the two conditions where mothers were present. During departure, compared to controls, maltreated children showed much less maternal contact but the same, or somewhat more peer contact, when

all their behavior was considered, and also with regard to the particular responses of looking and proximity. In reunion, total social behavior could not be compared since only one behavior was displayed to peers. Even so, maltreatment did not affect visual regard in the same way for the mother-child and peer systems. While maltreated children looked at mothers more, they looked at peers less than did their control counterparts.

Determinism in Social Relationships

The results of this study of maltreated children lead to the belief that poor infant-maternal relationships do not of necessity lead to poor peer relationships. These findings together with the work of Harlow (Harlow, 1969; Harlow & Harlow, 1965; Novak & Harlow, 1975; Suomi & Harlow, 1972), Hartup (Furman et al., 1979; Hartup, 1979), and Lewis (Lewis, 1979, 1982; Lewis & Feiring, 1979; Lewis et al., 1975; Weinraub, Brooks & Lewis, 1977) raise serious questions about the epigenetic view of social development. In the present study, maternal maltreatment was found to directly and adversely affect the interaction between mother and child; in fact, maltreated children as a group appeared to be insecurely attached compared to the control group. Nevertheless, they were able to engage in successful peer relations as long as they were able to engage in peer behavior. Harlow's studies of monkeys reveal the same finding--as long as infants were allowed peer contact, they had normal peer relations independent of the maternal-infant relationship.

These findings are difficult to interpret within an epigenetic framework. In attributing a causal role to the mother-child relationship, this model suggests that all subsequent relationships, such as those with peers, grow out of and are a consequence of the infant's tie to its mother. In a deterministic perspective, maternal experiences do not only affect other relationships, they shape them directly. As a result, poor

attachment is hypothesized to have a "ripple" effect, its inherent dysfunction broadening out to impair newly-developing systems of interaction. Children who display an avoidant pattern of attachment to mothers are expected to isolate themselves from peers, while those who are ambivalently attached will transfer their social hesitancy and insecurity to their peer relations (Sroufe & Waters, 1977). None of these predictions were supported by the present research. Maltreated children were neither withdrawn, nor hesitant, nor inadequate in their peer interactions; overall, they were at least as interested in their peers as were controls, and in some conditions comparatively more peer-oriented.

Some investigators (e.g., Arend et al., 1979; Esterbrooks & Lamb, 1979; Waters et al., 1979) have reported an association between the quality of attachment and later peer competence, interpreting this to mean that the mother-infant relationship determines the nature of peer relations. But deficiencies in peer behavior may be related to poor attachment without being directly caused by it. For example, it has been found that mothers who fail to promote secure attachment in their infants also limit their contact with peers (Lieberman, 1977). Without exposure to peers, poorly attached children do not have the opportunity to learn and rehearse skills necessary in the peer system. Poor mothering, especially if it is associated with mistreatment or negative interaction, may produce a general social fearfulness in children which, in turn, inhibits them from making contact with peers. In both cases, it is the lack of peer experience, rather than the failure of attachment, that causes poor peer adjustment.

All theories of social development hold that maternally-derived experiences affect the child's subsequent interpersonal relationships. But research showing that appropriate peer behavior is exhibited when infants

are raised by peers alone (Harlow, 1969), when treated by peer "therapists" (Furman et al., 1979; Suomi & Harlow, 1972), or when placed in a daycare setting, suggests that peer relations are not predicated on successful maternal relations. Instead, different systems of relationship may be seen as developing in tandem but as the results of different experiences, capable of mutually affecting each other but formatively significant in their own right. In the present study, such a perspective yields three predictions concerning the social consequences of a poor mother-child relationship. These are: (1) maltreated children will show greater impairment in their maternal relations than in their other relationships; (2) maltreatment may affect particular responses to peers and caregivers, but will not adversely affect the overall quality or success of these relationships; and (3) maltreatment is likely to affect different aspects of peer and caregiver interaction, since these systems are functionally independent from each other. Our data supports these hypotheses. Maltreated children functioned most poorly in their interactions with mothers. However, they did not differ significantly from controls in their overall sociability with either peers or caregivers. While particular responses to others were sensitive to the effects of maltreatment, these were not the same for peers and caregivers. Thus, compared to controls, maltreated children showed more aggression to their peers following separation from mothers, but generally touched their caregivers less.

The present interpretation may be challenged on the grounds that these findings reflect the operation of compensatory coping mechanisms which come into play early in life to make up for a poor mother-infant relationship. In this explanation, children are seen as substituting others, such as peers, to fulfill needs unmet by mothers. Thus, it can

be argued that, while both control and maltreated children may show similar external behaviors to peers under certain circumstances, they have taken different paths of development, with consequent differences in internalized ego structures, to achieve this outcome. In this argument, children's social behavior is still seen as causally determined by their maternal relationships, and as we have indicated, such an assertion may be unwarranted.

Social Development in the Social Network Model

We feel our data require a broader view of social development than the epigenetic model provides. As crucial as the mother-child relationship assuredly is, an accumulating body of research suggests that other systems of interaction and relationship may play a significant role in the development of different social capacities. These systems of interaction are present from birth and constitute the social network of the child. Lewis (1979) has proposed that the social network is best characterized by a matrix of social objects, i.e., those individuals with whom the child interacts, and of functions related to the child's developmental needs. The relationship between objects and functions is determined broadly by the culture, and more idiosyncratically by the family, and so varies considerably. Even so, there is evidence to suggest that parents and peers are generally associated with different social functions (Edwards & Lewis, 1979). To the extent that parents are involved in caregiving and meet the security and dependency needs of the child, an attachment relationship develops. But attachment is just one of a wide set of important functions necessary for adequate socialization. Research indicates that peer interaction facilitates the development of play (e.g., Mueller & Rich, 1976), some forms of learning and object skills (e.g., Rubenstein & Howes, 1976) and is important for the growth

of friendships (e.g., Lewis et al., 1975). Without it, there appears to be a greater risk for dysfunctional social behavior in adulthood (e.g., Cowen, Pederson, Balijian, Izzo & Trost, 1973; Harlow, 1969). Such findings support Hartup's (1979) contention that "peer interaction is central in childhood socialization and the growth of social competence, and the suspicion grows that such competencies are direct derivatives of early experiences in the peer culture" (p. 285).

For some children, the mother may be the sole object in the infant's world; as such she must satisfy all functions and needs. In such a matrix, the outcome of this single relationship will determine all others. However, if the matrix includes others such as fathers, siblings, and peers, the social consequences of the mother-child relationship may be modified. As long as flexibility in the social network is maintained, difficulties in one relationship need not produce difficulties in others, especially when different functions are considered. Thus, poor maternal relationships are most likely to lead to poor peer relations when the lack of peer experience intervenes.

Intervention Strategies

The results of the present study have relevance in considering methods of intervention designed to ameliorate the effects of child maltreatment. A review of the child abuse and neglect literature indicates that the treatment of such children has, of necessity, to be multifaceted. Child maltreatment itself is not a single entity, but rather an array of experiences falling along a continuum whose dimensions and defining criteria remain unclear. Different forms of maltreatment may have different etiologies and different developmental consequences. Because maltreatment creates a wide range of difficulties, its effects cannot be overcome by a single prescription. Treatment programs have tended to

focus on the maltreating parent, aimed at preventing further abuse and improving parenting skills. If some of the interpersonal problems exhibited by maltreated children stem not only from an impaired relationship with the parent, but from such secondary effects as social isolation, then it may also be necessary to treat the child as well. By providing an environment which contains other people, including non-abusive adults and peers, these problems may be dealt with directly. We agree with the recommendation offered by George and Main (1979) for "the establishment of specially staffed daycare centers, perhaps centers in which abused infants are placed with nonabused" (p. 317). In general, daycare attendance has not been found to disrupt the child's attachment to the mother, at least for normal samples (Belsky & Steinberg, 1978). Most recent studies have failed to find qualitative differences in attachment as a function of group rearing even when begun in infancy (Cummings, 1980; Moskowitz, Schwarz & Corsini, 1977; Portnoy & Simmons, 1978; Ragozin, 1980; Roopnarine & Lamb, 1978). In fact, several studies have indicated that daycare may exert a positive influence on children's parental relationships. Blanchard and Main (1970) found that the longer children attended daycare, the less likely they were to avoid the parent during reunion and the higher they scored on a scale of social-emotional adjustment. Vandell (1979) found that after six months, playgroup toddlers became more socially adept in their parental interactions than a comparative group of home-reared children; not only were they more active in their social exchanges with parents, they were also more responsive to adult initiatives. Of course, the direct benefit of daycare is the provision of a peer system. Studies comparing the peer relations of normal daycare and home-reared children have generally found that daycare children show heightened peer orientation, engaging in more peer inter-

actions of all kinds (e.g., Belsky & Steinberg, 1978; Ricciuti, 1974). Finally, daycare may be useful to the parent(s) as well, providing a larger support system for the family. The social network, both of the child and of the family, is an important aspect of development. No theory of social development or intervention should ignore its impact.

BEHAVIOR IN THE DAYCARE SETTING

Researchers have generally used laboratory-based procedures to study attachment in young children. Naturalistic contexts have rarely been employed, despite the fact that type of setting has been shown to exert significant effects on separation and reunion behaviors (e.g., Brookhart & Hock, 1976; Ragozin, 1978). Therefore, it is important to ascertain whether reactions typically observed in the laboratory are also seen in everyday situations. The findings of the present study support several general conclusions derived from the attachment literature. First, attachment behaviors were preferentially displayed to mothers over other familiar adults during the natural separations and reunions which took place in the daycare center. All the children directed to their mothers more proximal, physical contact and affectionate behaviors, and in reunion, more visual regard as well. These results are strikingly similar to those of Ragozin (1980), who also observed daycare-based separations and reunions. They lend support to the conclusion from studies using other methodologies that daycare does not disturb the child's attachment to the mother (e.g., Belsky & Steinberg, 1978; Farran & Ramey, 1977). Second, our data indicate that, compared to her leaving, the mother's return heightened attachment behaviors. In reunion, all behaviors were focused on mothers and little attention was paid to caregivers or peers. In departure, some responses, especially

social play, speech, and looking were as frequently directed to others, as to mothers. Moreover, children expressed five times more positive affect in reunion than in departure, and half as much negative affect.

Despite this, separating from mothers in the daycare center did not result in marked behavioral disturbances. Although some distress was shown following maternal departure, there were also expressions of positive affect along with a substantial increase in the amount of toy play over the preceding period ($\bar{X}$ = 13% of total time in departure vs. 36% in separation). Caregiver-directed behavior reached its highest level during this condition, perhaps reflecting a mechanism for coping with maternal absence. Again, these results closely parallel those of Ragozin (1980), whose sample, unlike ours, was middle-class.

During free play, children generally engaged in more social behavior with peers than with caregivers. They clearly preferred to stay near, look at, and play with their peers, and displayed a variety of positive and negative interactive behaviors. Studies of home-reared infants and toddlers in free play situations have shown that young children are more likely to involve themselves with peers, even when mothers and other adults are also present (Eckerman et al., 1975; Lewis et al., 1975; Rubenstein & Howes, 1976). Such data dispel the notion that children do not have the capacity for engaging in peer relations at very young ages.

Age Trends

As expected, separation distress declined with age. Younger children tended to fret and cry more than older children as mothers were leaving and to engage in more searching behavior once mothers had gone. Proximity to mother, however, was not shown to change with age, a finding also reported by others (e.g., Maccoby & Feldman, 1972; Ragozin, 1980). Reuniting with mothers after a full day's separation remained a strong

stimulus for eliciting attachment behavior across the age range studied. But infants expressed relatively more negative affect to returning mothers, while older children were more likely to seek physical and proximal contact.

The most striking age differences occurred during free play episodes, where age was found to exert an overall effect on children's non-directed, caregiver-directed, and peer-directed behavior. In general, older children engaged in more physical and social activity than did younger children. Moreover, with increasing age children interacted more with peers and less with caregivers, a frequent finding in previous research (e.g., Finkelstein, Dent, Gallacher & Ramey, 1978; Reuter & Yunik, 1973). But our results suggest that age-related changes in social behavior followed a different course for caregivers and peers. In the case of caregivers, proximal behaviors gave way to more distal modes of contact with age. Infants were more likely than older children to engage in direct physical behaviors with caregivers, touching, sitting in their laps, hugging and kissing them, etc. In contrast, older children were more likely to speak to caregivers, follow them, and imitate their actions. However, in the case of peers, almost all categories of behavior, whether proximal or distal, increased reliably with age. Older children engaged in more proximal, visual, verbal and positive contacts with peers than did younger children. In addition, interactive behaviors became more frequent and reciprocal with age; there were significant increases in imitating, following, accepting toy offers, and playing with peers. These differences in the way age affected caregiver- and peer-directed behavior would tend to support the hypothesis that these are different relational systems of interaction.

Finally it is interesting to note that toy play, non-directed vocalizations, and negative social behavior (to either peer or caregiver)

did not increase with age. Since these behaviors are likely to reduce social orientation, they may be incompatible with the growing sociability demonstrated in this age group.

A P P E N D I X

Dictionary of Observed Behaviors

Key: (M) = behavior applies to Mother
(C) = behavior applies to Child

Stay near (M & C): any part of the body is within arm's length of another; not scored when there is actual physical contact, as in touch, hug, etc.

Touch (M & C): nonforceful body contact; not scored when part of ongoing interaction which necessarily involves touching (i.e., picking up or holding hands).

Hold/pick-up (M & C): includes lifting, carrying, holding in arms another's body or body part such as arm or leg; not scored when part of caretaking activities.

Hold hands (M & C): includes entwining fingers or clasping another's hand.

Lie/lean/sit lap (C): includes sitting on another's lap, lying on or leaning against another, so that body is at least partially supported by another.

Hug (M & C): includes only affectionate physical contacts, but does not require a mutual response from other.

Kiss (M & C): kisses another's face or any part of body.

Caretake (M): includes any activity designed to take care of the child's physical needs, such as dressing, wiping nose, etc.

Look at (M & C): actively watches or looks at another; scored both as the sole activity and when part of an ongoing interaction (i.e., during play).

Vocalize to (M & C): any vocal expression or speech directed to another.

Vocalize non-directed (C): any vocal expression, utterance, or speech that does not appear to be directed to another; includes singing, humming, muttering to self, etc.

Request help (C): any vocal attempt indicating the need for help from another, as in getting a toy, etc.

- Inform (M): any verbalization designed to give information to the child, e.g., "I'm going to leave now."

Instruct (M): any verbalization which gives instructions to the child, e.g., "Go sit at the table."

Question (M): any verbalization which asks the child about something, e.g., "What did you do today?"

- Soothe (M): any vocal or physical attempt to calm, quiet, or reassure child; includes rocking, patting, and verbalizations such as "There, there."
- Praise (M): any positive verbal response indicating approval of child or his/her activities, e.g., "Very good."
- Scold (M): reprimands, criticizes, or makes negative comments to child about his/her activities, e.g., "Bad boy."
- Ignore (M): does not respond to child's initiatives, or avoids interaction with child by turning, walking away, etc.; includes averting gaze, quickly putting child down.
- Say bye (M & C): includes any verbal attempt to indicate farewell.
- Wave (M & C): includes any arm/hand gesture clearly in response to leave-taking.
- Follow mother (C): any motor attempt to go after departing mother.
- Look at door (C): looks at place where mother exited from room; scored only during separation.
- Go to door (C): any movement to place where mother exited from room; scored only during separation.
- Greet (M & C): includes any verbal attempt at salutation when reuniting with another.
- Lift arms (C): scored only as a greeting response to mother; includes raising arms, waving, and beckoning gestures.
- Clap (C): scored only as a greeting response to mother; otherwise scored as movement.
- Call mother (C): any verbal attempt to call to or for mother, e.g., "Mommy" or "Come here."
- Name (M): calls child by name; not scored when name is used to refer to child when talking to others.
- Smile/laugh (M & C): obvious facial expression of pleasure with or without vocal utterance.
- Fret (C): vocal utterance indicating some distress; includes fussing, whining, fretting.
- Cry (C): vocal utterance of obvious distress.
- Protest/anger (C): includes vocal as well as facial expressions of anger, complaint, objection, etc., e.g., "No" or "Mine."
- Frown (M & C): obvious facial expression of displeasure.

Play w/object (C): actively plays with, manipulates, and/or explores toys, furniture, objects, etc.

Play w/self (C): actively plays with and/or explores parts of its body, clothing, etc.; does not include thumbsucking, rocking or other repetitive or pacifying responses.

Play with (M & C): scored only when there is active interaction with another in an activity or game in which participants respond to or show awareness of the other's behavior.

Imitate (C): duplicates another's motor or vocal behavior.

Follow (C): moves in direction of another who is going (or in the process of going) away from the child; includes chasing games, as well as nonplayful pursuits.

Offer (C): gives or holds out an object toward another; scored whether or not offer is accepted.

Accept (C): takes object offered by another.

Share (C): concurrently touches, uses, plays with same object(s) as another.

Show (C): displays, or attempts to display, an object to another.

Hit (C): forcefully strikes another with hand, foot, etc.; also includes punching and scratching.

Take (C): removes unoffered object from another's possession.

Resist take (C): any forceful attempt to stop another from taking over an object.

Push/pull (C): uses hands/arms to aggressively push, shove, pull, tug at, or drag another; includes tug-of-wars over toys.

Pull hair (C): as distinct from touching hair, includes only forceful pulling or grasping another's hair.

Bite (C): bites another.

Gross motor activity (C): includes crawling, walking, running, throwing, dancing, riding, climbing, jumping, and other large muscle movements.

M-C DEPARTURE

NAME _____ MINUTE _____
DATE _____

	1	2	3	4	5	6
look at peer						
look at caregiver						
look at M						
play						
stop play						
go to M						
Follow M						
ignore M						
call						
vocal./noise						
no/neg.						
instructions						
request help						
say bye						
refer to M dep.						
proximity						
touch						
hold						
cling						
hug						
kiss						
hold hands						
hit/push						
block M						
wave						
fret						
cry						
smile/laugh						
frown						
protest/anger						

CHILD'S BEHAVIORS

	1	2	3	4	5	6
sit						
sit lap						
walk						
stand						
crawl						
lie						
picked-up						

	1	2	3	4	5	6
look at child						
look at peer						
look at caregiver						
name						
informs						
instructs						
scolds						
soothes						
praises						
says bye						
talks to others						
waves						
proximity						
touch						
hold/pick up						
hug						
kiss						
hold hands						
avoid/push away						
play/show toy						
ignore						
smile/laugh						
frown						

MOTHER'S BEHAVIORS

	1	2	3	4	5	6
dress						
sit						

SEPARATION

NAME _____ MINUTE _____
DATE _____

look at peer	1	2	3	4	5	6	T
look at caregiver							
vocalize							
gesture							
proximity							
touch							
hold/pick-up							
hug							
lie/lean/sit lap							
kiss							
hold hands							
play w/object							
play w/peer							
play w/caregiver							
play w/self							
gross movement							
strike/hit							
imitate							
follow							
push/pull							
offer							
share							
show							
accept							
throw							
take							
resist take							
bite							
male							
female							
laugh/smile							
fret							
cry							
frown							
protest/anger							
floor							
table							
yard							
crib/cot							

look to door

go to door

Touch / Bang door

Call M

NAME _____ MINUTE _____
DATE _____

look at peer	1	2	3	4	5	6	T
look at caregiver							
vocalize							
gesture							
proximity							
touch							
hold/pick-up							
hug							
lie/lean/sit lap							
kiss							
hold hands							
play w/object							
play w/peer							
play w/caregiver							
play w/self							
gross movement							
strike/hit							
imitate							
follow							
push/pull							
offer							
share							
show							
accept							
throw							
take							
resist take							
bite							
male							
female							
laugh/smile							
fret							
cry							
frown							
protest/anger							
floor							
table							
yard							
crib/cot							

	1	2	3	4	5	6
look at peer						
look at caregiver						
look at mother						
play						
stop play						
go to m						
go away fr/m						
ignore m						
greet:lift arms						
greet:clap						
call						
vocal./noise						
no/neg.						
instructions						
request help						
say bye						
proximity						
touch						
hold						
cling						
hug						
kiss						
hold hands						
hit/push						
wave						
fret						
cry						
smile/laugh						
frown						
protest/anger						

NAME _____ MINUTE _____
 DATE _____

CHILD'S BEHAVIORS

	1	2	3	4	5	6
sit						
sit lap						
walk						
stand						
crawl						
lie						
picked-up						

	1	2	3	4	5	6
look at child						
look at peer						
look at caregiver						
name						
greet						
informs						
instructs						
scolds						
soothes						
praises						
questions						
talks to others						
proximity						
touch						
hold/pick up						
hug						
kiss						
hold hands						
avoid/push away						
strike/hit						
play						
ignore						
smile/laugh						
frown						

MOTHER'S BEHAVIORS

	1	2	3	4	5	6
dress						
sit						

FREE PLAY

 NAME _____ MINUTE _____
 DATE _____

	1	2	3	4	5	6	T
look at peer							
look at caregiver							
vocalize							
gesture							
proximity							
touch							
hold/pick-up							
hug							
lie/lean/sit lap							
kiss							
hold hands							
play w/object							
play w/peer							
play w/caregiver							
play w/self							
gross movement							
strike/hit							
imitate							
follow							
push/pull							
offer							
share							
show							
accept							
throw							
take							
resist take							
bite							
male							
female							
laugh/smile							
fret							
cry							
frown							
protest/anger							
floor							
table							
yard							
crib/cot							

 NAME _____ MINUTE _____
 DATE _____

	1	2	3	4	5	6	T
look at peer							
look at caregiver							
vocalize							
gesture							
proximity							
touch							
hold/pick-up							
hug							
lie/lean/sit lap							
kiss							
hold hands							
play w/object							
play w/peer							
play w/caregiver							
play w/self							
gross movement							
strike/hit							
imitate							
follow							
push/pull							
offer							
share							
show							
accept							
throw							
take							
resist take							
bite							
male							
female							
laugh/smile							
fret							
cry							
frown							
protest/anger							
floor							
table							
yard							
crib/cot							

Observational Report of Departure and Reunion Behaviors:
Two Extreme Cases.

L. is a 17-month-old maltreated boy, attending daycare for four months at the time of study.

Departure: L. runs into the playroom ahead of Mother, and is greeted by Caregiver. He looks at a peer sitting with a bunch of toys in the middle of the room, and approaches him. He picks up a toy, and begins to play with it. When Mother enters, she goes directly to Caregiver and begins talking. She is complaining that L.'s clothes were ripped when he came home on the previous day. Without waiting for a reply, she goes on to talk about a date she had that night. L. is absorbed in his toy play, and has not looked at Mother since her entrance. As she continues her conversation with Caregiver, Mother goes up to L., picks him up without warning, and brings him to the changing table. He looks at her briefly, then turns his head sideways to look in the direction of peers and Caregiver. When Mother removes his shirt, she forcefully pulls his arm behind in an awkward position. L. looks at Mother now, and begins to fret. He makes a vocalization. Mother does not look at L.'s face or stop her activity. He is fretting more loudly and beginning to squirm around. Mother continues talking to Caregiver, but jerks his leg still. Now L. is really crying. Mother looks at him, then begins to scold him loudly. She tells him to stop fussing or he'll be in trouble. As she finishes dressing him, L. is calming down, but still crying softly. Mother complains to Caregiver that now she has to wipe L.'s face, which is stained with mucus from his crying. She takes a tissue and wipes his face, then pushes his head back and begins to clean the inside of his nose with Q-tips. L. starts screaming now. Mother scolds him again, calling him a bad boy. She puts him down disgustedly, and he moves away quickly to join a peer, who is playing on the floor with a toy. Mother signs out (a requirement of the center), and says good-bye to Caregivers. She looks at L. briefly before leaving, but does not say anything to him. He has not looked at Mother since he resumed play, and does not notice her leaving.

Reunion: L. is playing on the floor when Mother enters. She does not look for him, but goes directly to Caregiver and begins talking to her.

When he hears her voice, L. looks up; resumes play briefly, but then picks up his toy and walks over to Mother. He stays near and watches Mother as she talks. From time to time, she looks briefly at him. As she is signing out, he begins to play with his toy again. She goes to L., takes away his toy, and picks him up. He protests and starts to cry. She puts him down, and begins talking to Caregiver again. L. walks away, but continues to look at Mother. Soon she calls him to go. Although he is looking at her, he does not move. She goes after him, forcefully picking him up. He protests and cries. She kisses him, then tells him to be quiet. He is not looking at her but into the room. As she says good-bye to Caregiver, he is calmer but still fretting.

W. is a 16-month-old boy in the control group. He has been at the center for four months.

Departure: W. and his mother enter the playroom together. Mother stops to exchange greetings with Caregiver and W. stays close by. He is smiling, looking first at Caregiver, then at peers. He holds Mother's hand as they walk to the changing table. As she changes him, she frequently looks at and talks to him. Although he is generally looking at Mother, especially when she is talking to him, W. often glances at the others in the room. When she tells him she is finished, he vocalizes briefly and smiles. She returns his smile and praises him. She picks him up and carries him to the sign-in area. When she puts him down, he stays near her. A Caregiver approaches and begins talking to Mother. W. touches Mother, then looks at a peer playing in the block area. W. makes a vocalization that appears directed to no one in particular, walks over to the blocks, and begins to play. After saying good-bye to Caregiver, Mother walks over to W., calling his name. He looks up and smiles. Mother crouches down and they hug and kiss. She says, "bye baby, see you later", and he says, "bye". W. continues to watch Mother as she goes to the door. She looks back and waves, and he smiles again. Although he looks at the door after Mother has gone, he does not follow her.

Reunion: Mother enters playroom and calls W.'s name. When he sees her, W. laughs and runs straight to her. She smiles and greets him. They touch and she asks him a question. As she signs out, he stays near and looks at her. She talks to him about going home. She says, "ready?"

and holds out her hand. He smiles broadly as he takes her hand. She says good-bye to Caregiver, and tells W. to wave bye. He looks at Caregiver, waves, and smiles.

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