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AUTHOR Bates, John E.
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ABSTRACT

This paper outlines the research on the reciprocal effects of children and parents on one another and briefly discusses the methods and concepts currently employed in the area. Three types of observational studies are identified: (1) parent-infant studies in which slow-motion and stop-frame video pictures are used to analyze minute details of parent-child interaction, (2) parent-infant studies in which data is collected with a structured coding system which then yields sequential probability data, and (3) parent-older child observations. Three types of experimental studies are also identified: paradigms using imaginary or artifical adult-child interactions; those using actual, immediate interaction; and those involving ongoing rather than ad hoc relationships. Problems associated with the use of observational and experimental studies are discussed. Finally, it is suggested that child effects should be viewed as one part of a bidirectional system and that investigations be made into the means by which children's influences on adults may partly determine their own development. (JMB)

A Brief Review of Child Effects Research[1]

John E. Bates

Indiana University

In the past several years we have seen an explosive burst of interest in the effects of children upon their adult caregivers. This change has taken two forms, one conceptual and the other empirical. The conceptual change has been amazingly thorough. It is essentially impossible to find a publication concerning children's social development which does not at least mention the reciprocal influences of the child upon adult socialization agents. Although the idea of child effects has been present for a long time. (in fact Sears wrote about it in 1951), actual empirical attention to child effects dates largely from a 1968 review, in which Richard Bell reinterpreted the disappointingly inconclusive parent effects literature in terms of child effects. Since 1968 a large and growing number of studies have explicitly attended to reciprocal influences. I will outline this literature and add a few comments about the methods and concepts currently employed in the area.

The literature can be grouped into two main methodologies. The first category consists of observational studies. One subtype of observational study concerns parent-infant interaction. For example, Brazelton and his colleagues (1974) place a mother and her infant face to face in the laboratory, baby in an infant seat and mother in a chair, and tell the mother to play with the baby. The researchers then study slow-motion and stop-frame video pictures to analyze the minute details of the interaction. One type of finding that has emerged from the sequential analyses of such studies is a list of some ways in which infant and parent appear to control each other's behavior. For instance, when the infant is looking at the mother, the mother is less likely to look away from the infant than she would otherwise be (Stern, 1974).

A second parent-infant observation study paradigm involves measurement in larger-scale than exemplified by Brazelton et al. The typical paradigm here is in-home observation of the dyad, using a structured coding system. Conclusions about directions of influence typically are then drawn from sequential probability data. For example, mother vocalization has been found to be more often a response to infant vocalization than an elicitor of it (Lewis, 1972).

A third type of observational study, less frequent than parent-infant studies, concerns the reciprocal influences of parents and older children. One interesting example is a study by Wahl et al. (1974), who recorded behaviors of parents and children at home. They found, among other things, that parents were likely to respond in a reciprocal fashion to troublesome child behaviors, that is with more neutral or negative consequences than positive ones. Somewhat surprisingly, however, parents were far from totally reciprocal, and in fact were less directly reciprocal to troublesome child behaviors than were the siblings of the child.

Observational studies have made important contributions to the demonstration of child influences, particularly those of infants upon their parents. Moreover, by studying relationships in an ongoing stream, the observational studies have kept us aware of the bidirectional nature of dyadic relationships--the child and parent both influence each other. Observation studies are not without methodological problems, however. Workers in this area have the general problem of choosing an array of behavior codes which gives an accurate picture of the complex events,

but which does not exceed the capacity of observers for valid, reliable recording. This technical challenge is, of course, shared with many other kinds of study. Of concern more specifically to students of bidirectional influences are the problems involved in sequential analysis: The first of these problems is the decision as to how complex a model best describes the sequences. For example, can one adequately account for a dyadic interaction sequence with a model which says that the behavior of Person A at time t is explained simply by the behavior of Person B in the immediately preceding interval, i.e. at time $t - 1$? Or must one invoke higher-order models, perhaps involving not only Person B's behavior at $t - 1$, $t - 2$, and $t - 3$, but also Person A's own behavior in prior time intervals? At the current time, most researchers choose the simple model. This is largely because of the immense complexity of evaluating higher-order models. A second sequential analysis problem is statistical inference. There exist relatively simple procedures for comparing one subject's conditional probability of a behavior given a particular antecedent to the unconditional probability for that same behavior. However, comparisons between groups of subjects and the handling of multiple variables are currently more problematic. The technical problems of higher-order models and statistical inference are being worked on, though. So we can expect that statisticians will eventually bring us some more efficient, standard, computational tools for sequential analysis of interpersonal interaction. A third and final problem is one of interpretation. In many reports of sequential analyses there is an implied assumption of causality--events that commonly precede a behavior are regarded as causes of the behavior. This interpretation is certainly more tenable than if the events were only contemporaneously associated, as in the case of a simple correlation. However, we must occasionally remind ourselves of the fact that some unmeasured third factor may produce both the consequent and antecedent events. Stern (informal communication), for example, has suggested that much of a baby's interactive behavior with the mother is a function of the expectancies the baby has built up over time about how the mother will behave, and is not simply a function of the mother's immediately antecedent behaviors. It has been suggested (Patterson, 1974) that naturalistically observed sequences be later tested for causality with experiments.

I will now turn to experimental studies, the second main methodological category in child effects research. This category can be further subdivided into paradigms using imaginary or artificial adult-child interactions and those using actual, immediate interaction. I will consider imaginary or artificial interaction paradigms first. One kind of study under this category is exemplified by a study by Marcus (1975), in which adults were shown videotaped examples of child dependent and independent behavior and asked to report their hypothetical responses. Children's dependent behavior tended to produce directiveness and encouragement of dependence, and independent behavior tended to produce adult nondirectiveness and encouragement of independence. A second kind of imaginary or artificial interaction study is exemplified by a study by Roberts et al. (1975). Here, adults were asked to show an arithmetic skill to a child over what they thought was a closed-circuit t.v. The pre-recorded "child" either imitated or did not imitate the adult's arithmetic procedure. Roberts et al. found that imitative pupils were evaluated more favorably by the adult "teachers" and rated as more attractive than non-imitative pupils.

The second main category of experimental child effects studies is paradigms with actual-adult-child interaction. One kind of experiment in this category employs ad hoc relationships and can be illustrated with one of my own studies (Bates, 1976). I had adults play the role of teacher with child confederates who had been trained to display either of two contrasting roles. In the high positive role, the child emitted a high rate of positive nonverbal cues, mainly smiling at the adult and maintaining eye contact. In the low positive role, the child emitted low rates of these cues. The adults own positivity was assessed on a number of nonverbal variables during the adult-child interaction. Afterwards the adults were asked to rate the child's social and intellectual qualities. Compared with the low positive children, the high positive children received not only a higher level of adult nonverbal positivity during the interaction, but also more favorable written evaluations.

A final kind of experimental study involves ongoing, rather than ad hoc relationships. Very few such studies have been reported. However, a recent one by Sherman and Cormier (1974) concerned the effects of problem children's behaviors on their regular classroom teacher. The children were trained, independent of the teacher, to emit higher proportions of appropriate behavior in class. As child appropriate behavior became more frequent, the teacher's positive behavior increased and her negative behavior decreased, and interestingly, she began to respond to a higher proportion of appropriate child behaviors.

Like observational studies, experiments have been useful in demonstrating ways in which children can influence adult behavior. Experiments have one advantage over observational studies -- they more readily permit systematic variation of parameters, a concern to which I shall return shortly. A disadvantage is that one must be concerned about the generalizability from artificial situations and relationships to the more natural ones we are ultimately interested in understanding. However, it is quite feasible to design experimental situations that pertain well to the real world of adult-child relations and that still control for competing explanations of qualities of the interaction. Eventually, important experimental findings will have to be verified in naturalistic studies.

The literature so far offers ample support for the concept of child effects. So, rather than simply continuing to ask whether children affect adults, we can shift emphasis and begin asking some sophisticated questions in a more systematic way. The first such question concerns the parameters of child effects -- what specific child behaviors affect what particular kinds of adult under what particular circumstances? This is essentially a question of what variables moderate the effects of children.

Research to date offers suggestions of moderating variables, although the literature has not been systematic. One suggestion has been situational effects. For example, in the study of mine which I described earlier, adults were more responsive to the different levels of child nonverbal cues during informal, rest periods than they were during structured, teaching periods. Another moderating variable might be the general behavioral characteristics of the child. For example, Stevens-Long (1973) found adults to respond more negatively to the same aggressive acts by an over-active child than by a normally active child. A third type of moderating variable might be background characteristics of the adult, such as social class or prior experience with children. We are currently conducting some studies to evaluate such possibilities. A final suggestion is adult individual differences. A variable particularly relevant to current thinking on mother-infant interaction is parental sensitivity. One of the more interesting examples of individual differences in maternal sensitivity has been reported by Brazelton et al. (1974). Brazelton and his coworkers describe a pattern in mother-infant play, in which the mother stimulates the infant with vocalizations, exaggerated facial expressions, and a blend of expectable and surprising actions, while the infant becomes progressively more aroused, finally reaching a peak where he/she may be looking at the mother, smiling, waving limbs about, and vocalizing. The common thing for the infant to do after he/she has reached the peak of arousal is to avert his/her gaze and become temporarily unresponsive to the mother. Apparently, mothers differ in their response to this temporary shut-down by their infants. Some mothers are sensitive to it, and they themselves subside, reducing their level of stimulation, until they sense that the baby is ready for another round. Over weeks of development the infants of these sensitive mothers become more and more socially attentive; that is the mother and infant have longer rounds of interaction between infant shut-down periods. Other mothers are less sensitive to the baby's shut-down cues, and either fail to reduce or they actually increase their stimulation. Their babies do not show a growth in social attentiveness, and in fact, the babies' engaged periods may become shorter and less frequent over time. This study needs replication, and we need to know how fine-grained mother-infant play patterns in the structured setting relate to important natural developments. However, more grossly-measured differences in maternal sensitivity to infant signals have been recently related, on a larger scale, to infant cognitive and social development. Blehar et al. (1977), for example found that babies who were securely attached at age 1 year had mothers who had been more sensitive to baby cues in the early months, whereas anxiously attached infants had received less responsive mothering. This mention of the developmental

impact of adult differences in responsiveness to child behaviors suggests the second shift in emphasis the child effects area needs to undergo.

Many writers have argued that the emphasis of child effects research should be on bidirectionality of effects rather than just the creation of a new line of unidirectional studies which complements the old parent-effects research area. However, I would go further than this and assert that the most important theoretical contribution of child effects research will be an understanding of specific ways in which children may influence their own development via their effects upon adults. Thus, the second question the field should now emphasize is how child effects influence child development.

In this regard, I envision feedback loops in which the child influences and adult's behavior in a way which, in turn, influences the child's own behavior in important ways. For example, early infant social behavior, such as smiling and vocalizing, may elicit parent responses which produce momentary enjoyment as well as a number of long-term beneficial effects, including a growing, mutual attachment, the infant's awareness of ability to influence the social surroundings, and an enhanced alterness to the parent's behaviors, which may in turn produce observational learning. A less benign set of outcomes can be imagined in dyads with infants who are less prone to initiate interaction or parents who are deficient in their response capabilities. A second possible feedback loop is illustrated by the study of mine (Bates, 1976) which I have described. Teachers' nonverbal positivity had previously been demonstrated to affect children's performance level (Allen, et al., 1969). So, juxtaposing this with the finding that child nonverbal cues can influence adults' own nonverbal positivity, one can see a feedback loop in which an attentive, positive pupil produces high teacher positivity, which when communicated to the child, produces higher levels of academic performance in the child.

There are two implications that consideration of such feedback loops would have for research. In observational studies one should try to follow the example of Thoman and her associates and note not only the child behavior and adult response to that behavior, but also the child response to the adult response. In experimental studies, one should try to select as dependent variables, adult behaviors that existing literature on parent- and teacher-child interaction indicate to be closely associated with important developmental consequences.

In summary, I have given an outline of child effects methodologies; I have given examples of some of the contributions made by the different types of study; and I have mentioned a few methodological problems of the two main types of study, observational and experimental. I have concluded that the literature offers abundant support for the notion of child effects, and have argued that the area should recognize the complexities of adult-child interaction and devote more effort to systematic study of the parameters of child effects. Finally, I have suggested that we view child effects as one part of a bidirectional system and that we look for means by which children's influences on adults may partly determine their own development.

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Footnote

[1]This paper has been presented at the Midwestern Psychological Association convention, Chicago, May, 1977, as part of a symposium entitled "The effect of children on their caregivers: the bent twigs reciprocate". The paper is based on a more comprehensive review which is in draft form.