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ABSTRACT

During an experiment on infant behavior, it was observed that young children shared toys with their mothers; therefore, a series of research studies was designed to investigate this phenomenon. The general purposes of the research were: (1) to define sharing more precisely and develop objective measures of frequency and duration for it, (2) to analyze the order in which sharing behaviors occur, (3) to investigate characteristics of objects that children would share and the persons who would be shared with. Data were taken from laboratory studies and field observations. Study subjects were 18 months old. Sharing was defined in terms of the following three responses: showing objects, giving objects, and playing with them while in contact with another individual. The studies included analysis of several variables: (1) effects of novel versus familiar toys, and toy versus nontoy objects, (2) effects of differential social reinforcement, (3) recipients other than the mother (fathers, relatively unfamiliar persons), and (4) effects of environmental changes (decorations) on the showing component of sharing. Discussion focuses on the learning processes that may be involved in the origins of sharing, which is viewed as an adaptive response. Sharing in other species and in prehistoric man are also considered. (DP)

SHARING AT AN EARLY AGE

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Sharing is the commonest of behavior. All of us share with others. As scientists we share our thoughts with each other, as well as the joys and griefs of discovery. Husbands share their thoughts and possessions with wives, wives with husbands, and both share with their children. Do children share? And since we know that they do share, we may ask when does sharing start? With whom and what do they share? What is the nature of the first sharing?

I would like to be able to tell you that these questions came to my mind in the order I have set forth, that is, by theorizing that because sharing is a common behavior, when and how it begins would be of interest. The facts, however, are quite otherwise. It seems that the interesting varieties of children's behavior occur to me only by watching children. No one sees everything; our prejudices alert us to different facets of the child's behavior. What determines what I see and what guides my observations is, I believe, my predisposition to view the child as the happy experimenter, an explorer eager for new experiences, and at the same time a truly social being almost from birth.

The facts then are these. In a recent study we set out to show that some of the infant's behavior heretofore treated in the literature as dependence qualified as the opposite; that is, satisfied the definition of independence. To support the argument, we charted the activities of 12- and 18-month-old children in a free play situation in the laboratory. We measured the nature, frequency, sequence, and duration of the child's use of space, toys, and the mother, the mother being instructed to play a very passive role. We found that the children promptly entered the rooms adjoining the starting room and in a few seconds were playing with the toys they found there. They spent much more time playing with the toys than staying with their mothers. The behavior of most children was marked by vivacity and gaiety; they ran, smiled, laughed, shrieked --and they talked. One could conclude that the behavior of the children at both ages was "marked by an independent energetic spirit and by a readiness to undertake and experiment." These findings lent credence to the proposal that much of their behavior could be characterized as independent, and suggested that we do the young child a disservice by focusing so much attention on his dependence.

In addition to the above measures, we also dictated a narrative account of the child's behavior. To my surprise, the accounts revealed that many of the children showed the toys to their mothers

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and also brought toys to them, depositing them in the mothers' laps. These behaviors added considerable weight to the claim that the children behaved in an independent fashion. Here were little children--12 and 18 months of age--taking the initiative in making the other person--the mother--a partner in their play. The children were the givers, the mothers were the receivers.

These incidental findings seemed important enough to warrant study in their own right. Sharing is a valued trait in every society, and one many parents are at pains to inculcate in their children. In laboratory settings, sharing has been studied among older children and adults, but sharing in the laboratory or elsewhere has not been studied among children under two years of age. Therefore, if it can be shown that children do share from an early age--long before parents consciously exhort their children to share--we add a new dimension to our view of the very young child.

Sharing, as I shall use the term, conforms exactly to its dictionary definition. It "implies that one as the original holder grants to another the partial use, enjoyment, or possession of a thing though it may merely imply a mutual use or possession."

THE STUDIES

The series of studies I now report had several purposes. The first and most elementary purpose was to define sharing more precisely than in the previous study; and, instead of using narrative accounts alone we now used the more objective measures of frequency and duration, as well as of the order in which the behaviors occurred. We asked about the characteristics of objects the child would share, whether toys or other objects. Would novel objects increase sharing? And then, would the child share objects with persons other than the mother?

The data come from two sources, most from laboratory studies but also from field observations. I propose that for the behavior of interest no real dichotomy exists between these two sources. The laboratory is one in name only. For the average child of the community in which I work, our laboratory environment in many respects resembles environments he has already been exposed to in the normal course of events.

The children were at the midpoint of the second year of life, about 18 months of age. They were normal children, reared in the homes of parents who were on the whole above average in education. Although in the study of independence we had seen sharing in 12-month-old children, it occurred more frequently among the 18-month-old children. Their more efficient locomotion and larger repertoire of behavior recommended them for the present studies, but I do not at all mean to imply that sharing does not occur earlier--even earlier than 12 months.

All the laboratory studies took place in the same setting, a suite of 3 adjoining rooms: a fairly large room and two smaller

ones. The mother sat in a chair placed against the center of one wall of the large room, called the starting room. The wall she faced contained doors to the smaller rooms, which I shall call the toy rooms. The child always started from the mother's chair. The doors to the smaller rooms were fastened open. Each smaller room contained 2 toys or other objects as the study demanded, one near the threshold, the other near the rear wall. (A short film showed these arrangements later in the talk.)

In all studies the behavior of the mother was controlled. Generally, she was instructed to remain passive. She was not to direct the child's behavior in any way. If the child showed a toy from a distance, she could respond with a nod and a slight smile. If the child brought a toy to her, she could murmur a few words as she accepted it. The experimenter took pains to explain that we wanted to see what the child would do, that we had no firm expectations, and that if he chose to sit on her lap for the duration of the trial, that too was all right.

Three responses were selected to index sharing: showing the mother an object, giving her an object, and playing with an object that has been brought to the mother and that was still in contact with her, that is, in her lap or hand. I would like to define these in more detail.

Showing included pointing to an object or holding an object up, with some clear indication that the child was directing the mother's attention to the object. This he did by simultaneously looking towards the mother and by talking. Often the showing was accompanied by smiles and pleasant vocalizations.

Giving was defined as the child's bringing an object from a distance, that is, from one of the rooms to the mother, placing it in the mother's hand or lap, and releasing it. If subsequently he took the toy away, he still might later return and give it again.

Playing with object and mother was defined as the duration of time spent manipulating the object while it was still in contact with the mother.

These three measures were recorded independently by two observers behind one-way windows. Their agreement satisfied fairly acceptable standards--I shall talk about this later--and most of the measures I shall report are the averages of their two records. The observers also recorded two other measures, contact of toys and contact of mother, in the absence of any of the sharing behaviors. These two measures only kept track of what else the child was doing, but might eventually help us learn more about the sharing measures.

Supplementary data were obtained by video tapes of the child's behavior, by audio tapes of his and the mother's vocalizations, and by a running narrative account dictated by another observer.

(A few minutes of film shown here illustrated the setting,

the toys, the mother's position and behavior, and some examples of the child's picking up toys, carrying them to the mother, and placing them in her lap.)

Effect of Novel Toys

The first study of the series had several purposes. It provided the opportunity to test how reliably the three sharing responses could be recorded. It provided baseline data for subsequent studies. And by changing the toys for one group of subjects in a second trial, we could measure the effect of novelty upon sharing. Above all, it would offer corroborating evidence for the by-the-way observations of the independence study.

Twenty-four children, evenly divided by sex, were randomly assigned to experimental or control conditions. Each was seen individually with his mother. In Trial 1 half the children had one set of toys, and half another, to insure that the results would not be specific to only one set of toys. In Trial 2, the control group had the same set as in Trial 1; the experimental group had the other set. Each trial lasted 10 minutes. As each child entered the environment, two of these toys had been placed in each of the toy rooms.

In Trial 1, all 24 children exhibited some sharing of the toys with their mothers. Twenty-three of 24 children showed the toys a mean of 5 times, 20 of 24 carried toys and placed them in the mothers' laps or hands a mean of 9 times, and then played with the toys in the mothers' possession for a mean of 36 seconds. The one child who did not show a toy nevertheless gave, while those who did not give, showed. Every child, then, shared by our definition; and most exhibited all three of the responses during the first 10 minutes of observation.

Much variability in the frequency of showing and giving occurred, of course. One child showed toys to his mother 18 times and another gave his mother toys 25 times.

In Trial 2, the number of children who shared decreased somewhat. Now only 21 of 24 showed a toy, and only 17 of 24 gave a toy or toys to the mother. The experimental subjects showed and gave the new toys more often that the control subjects showed and gave their familiar toys, but the differences were small and a multivariate analysis of variance of all the measures revealed no significant effect of experimental treatment. That is, sharing was not reliably increased by the introduction of new toys in the second trial. Although I did not expect this finding, I am now impressed by the extent to which the familiar toys were able to maintain sharing at close to the original level of Trial 1.

To complete the story, the children spent more than half the first trial playing with the toys and only 9% of the time contacting the mother. In the second trial they still were spending almost half the trial in play with the toys, while contact of the mother increased but only to 18% of the trial duration.

Some toys were given to the mother more often than others, but all the toys were given at least once. The toy given most often was the roly-poly ball, heavy and difficult to grasp as it was. The plastic chain and the blocks and dowels were next most popular. Six of 24 children gave all the available toys to their mothers in Trial 1, the little girl in the film being one of them.

Sex differences. The behavior of boys and girls differed reliably in only two respects. Girls contacted their mothers more in Trial 2 than boys, and in contrast to boys showed toys to their mothers more often in Trial 2 than in Trial 1.

Summary. In summary, this first study showed that 18-month-old children did in fact share toys with their mothers; the earlier observations were confirmed. The children pointed to toys, held them up for the mothers to see, carried them to their mothers and released them in the mothers' laps or hands. Furthermore, they shared familiar toys at about the same frequency as novel toys.

Effect of Social Reinforcement

The next study, primarily the effort of Dale Hay, a graduate student, asked whether sharing could be increased by varying the mother's response to the child's giving her a toy. Half the mothers were instructed to make only a minimal response--if the child brought them a toy to take it without saying anything; the other mothers, in contrast, were instructed to smile broadly, say thank you, naming the child, to do this as pleasantly and enthusiastically as possible, and also to reach out to take the toy if the child brought it to them, and then to place it in their laps.

The study took place in the same laboratory setting with one of the previous sets of toys. Duration of trial was 10 minutes.

So far, 8 pairs of children have been seen. With so few pairs, the effects of the mother's exaggerated response to the child's bringing and giving a toy to her are not conclusive. Although the reinforced children showed and gave toys more often, only showing was reliably greater. They showed an average of 9 times versus 3 for the non-reinforced children.

It would premature indeed to conclude that only showing and not giving responds to reinforcement. More pairs of children must be studied. The failure to find a reliable difference in giving, if supported by additional data, might suggest that the behavior is already well established. I suspect, however, that more skill is needed in programming the mother's behavior; it has proved difficult to get some mothers to be very minimally responsive and to get others to be exuberantly responsive.

Increased Showing

The next study focused on pointing, a component of showing. To increase pointing we added attractive stimuli to the environment.

This study followed the social reinforcement study, after a break of only a few minutes. Now, when the child entered the large room with his mother three colorful posters hung from the walls, a bright wooden mobile hung in one corner of the room, and a large mobile of black and white circles hung from the center of the ceiling. The toy rooms meanwhile contained the same four toys of the previous trial. And the trial lasted 5 minutes.

Pointing was defined as extending the arm, usually with extended index finger, accompanied by regard of the mother. To measure the effect of the added stimuli--the posters and the mobiles--the frequency of pointing to these objects was compared with the frequency of their pointing to non-toy objects during the first five minutes of the preceding trial, where the non-toy objects were such things as the TV camera, microphones, door knobs, etc.

The results showed a large and reliable difference. Nineteen of the 21 children in this study pointed to the posters and mobiles, in contrast to only 8 of 21 pointing to non-toy objects in the just preceding trial. The children now pointed an average of 5 times, in contrast to a mean of less than 1; the increase was actually seven-fold, with one child pointing as many as 21 times.

We concluded, therefore, that pointing, by our definition a component of showing, and hence of sharing, could be increased just by adding posters and mobiles to the environment.

I cannot leave the behavior of pointing without comment. Pointing occurs at every age and no doubt in every culture and throughout man's history. It is a gesture of communication. Its effect on the beholder is immediate and compelling. Words are not needed. One looks where the other person's finger points. The meaning of the gesture is probably learned early by the infant, and he learns to use it early. Not only do children look where others point, but we observed that our mothers looked where their children pointed, even at so mundane an object as the ceiling.

Other Recipients of Sharing: The Father

The purpose of the next study was to find out if the children would share toys with fathers as well as with mothers.

Thirteen children, eleven boys and 2 girls, were studied, each with his father. All but one had been studied previously with his mother. The same suite of rooms was used but three new toys replaced three former ones.

The fathers were instructed to behave as were the mothers in the first novel toy study, neither entirely passively nor especially responsively. They sat in the same chair as had the mothers. Duration of trial was 10 minutes.

All 13 children seen in this study shared with their fathers. Eleven showed toys, 10 gave toys to their fathers, and 9 subsequently

played with the toys now in contact with the fathers. For those who exhibited the behavior, the mean frequency of showing toys was 7. They also gave toys to their fathers a mean of 7 times, and played with the toys in the fathers' possession for a mean duration of 29 seconds.

The results, therefore, showed that fathers too could be the recipients of sharing. Sharing is not confined to mothers alone. Furthermore, when we compared the responses of these 13 children to their fathers with those of the 24 children of the first study to their mothers, we were struck by the similarity of the findings. Not only were the frequencies of showing and giving similar, but the amounts of time spent playing with toys and contacting the parent were practically identical. These results also extend the generality of the original findings in still another dimension, for the responses were similar even with other toys. Up to this point we had observed the behavior of the children with 11 different toys--a truck, a shape-sorting box, a boat train, and so on. All had been shared by one child or another.

Other Recipients and Other Objects of Sharing

The next study had two purposes. The first was to see if the child would direct any sharing behavior toward a less familiar person, the experimenter, and second, to see if the child would share non-toy objects as he had shared toys--non-toy objects that he could pick up and carry.

This study followed the study with fathers after a short break. The experimenter, a female, entered the experimental environment with both father and child. The adults sat in chairs placed at a slight angle to each other, yet facing the two smaller rooms. The experimenter and the father chatted but both behaved toward the child with all the aforementioned constraints. The objects were, in one of the test rooms, a set of realistic-looking plastic fruit in the near position and a wastebasket filled with video tape in the far position. The other room contained a plastic tea set in the near position and in the far position a wastebasket filled with wadded paper, some small empty boxes, and some strands of red wool. I realize that although I label these non-toy objects, to the child they may be as much toys as the conventional toys used earlier. In all other respects, the same measures and procedures obtained as in the previous studies.

Ten children, 9 boys and 1 girl, were studied. Nine of them gave one or more of the sharing responses to the experimenter. Seven of the 10 showed one or more of these non-toy objects to the experimenter, one child as many as 9 times; 6 gave objects to the experimenter, one as many as 13 times; and 5 of these children played with a toy while it was in contact with the experimenter. Children at this age, then, do share objects with an unfamiliar person.

But note that they did direct more sharing toward the father.

All 10 of them gave the father one or more objects, while only 6 gave the experimenter any; and the mean frequency of giving was 7 to the father and 3 to the experimenter, a reliable difference. A familiar person was a more frequent recipient than a less familiar one. Yet that the unfamiliar person was a recipient at all seems noteworthy and attests to the generality of the behavior.

The wastebaskets proved less interesting to the children than we had expected. The artificial fruits were far and away the most frequently given objects--to father and experimenter alike. Every child gave one or more of the fruits to the father, and they were the objects given first; for 6 of the 10 children they were the only objects given. Thus, sharing can be influenced by the nature of the objects in the environment.

Summary of Laboratory Studies

This concludes the series of laboratory studies. They showed that children 18 months of age shared what they saw, and what they found, with other persons. They shared with their fathers as well as with their mothers, and even more remarkably they shared with a relatively unfamiliar person. Furthermore, they shared familiar toys at about the same rate as they shared new toys. There was some evidence that sharing could be increased by the adult's response, while pointing was reliably increased by increasing certain kinds of environmental stimuli. Finally, sharing was not restricted to only a few objects but occurred with as many as 11 different toys, and even with such objects as teacups, wads of paper, and strands of wool.

Much work remains. What about sharing with other children? Will just the extended hand of the adult increase sharing, the open extended hand appearing to be a powerful gesture? Some preliminary work showed that we could quite successfully increase sharing by making a game of it. We gave the child a small toy, extended a hand, and responded effusively when he placed the toy in our hands. Three children who had not given a toy to the mother, in this pilot attempt, gave us toys a mean of 6 times.

We need also to learn how to measure such other components of sharing as the child's smiling and laughing to the parent--his enjoyment--when he has accomplished a difficult task such as getting a tower of blocks to stand. And we have omitted entirely the child's sharing by talking to the person about what he has found and about what he is doing with it.

Field Observations

Once we became aware of the child's sharing, we began to see it everywhere. Here I summarize 19 field observations made by members of the laboratory within a week. The ages of the children ranged from 11 months to 3 years. The places of the observations included the campus, streets, stores, restaurants, and airports.

The objects shown ranged from wares in store windows to one's own belly button, and the objects given ranged from lollipops to twigs. The recipients included parents, strangers, siblings, and the observers themselves. As for pointing, you can scarcely observe an 18-month-old child out of doors for more than 10 seconds without seeing him point at something.

Still another class of information bears on the subject. I have yet to tell a parent or child psychologist of our interest who does not nod in assent and supply a corresponding memory. L.J. Stone, for example, replied: "How well I recall all those wet cookies stuffed in my mouth." From informal questioning of parents I gather that an early appearance of giving--if not the first--occurs when the child at about 12 months of age offers the parent a bit of his own food. One nice report told of a 9-month-old girl offering zwieback to the family dog.

Similar data come from Anderson, who watched children with their mothers in London parks. The children ranged in age from 15 to 30 months. He reported that half of them brought the mother an object they had picked up from the ground.

I am so confident of the occurrence of the young child's sharing that I predict you will observe it before you reach home, now that I have called it to your attention.

Justification of the Measures

Up to this point I have loped along pretty fast, declaring that what we measured can be rightfully designated sharing. Let me take a few minutes to justify the use of the term sharing and to consider what recommends the use of the three behaviors as measures of sharing.

First, I believe the response as a whole exactly fits the dictionary definition of sharing; namely, that sharing "implies that one as the original holder grants to another the partial use, enjoyment, or possession of a thing though it may merely imply a mutual use or possession."

How else might the behavior be labeled? Should it be labeled dependency? No, because I do not think the child is seeking attention, approval, or recognition. As I have argued, independence--in the sense of the child's taking the initiative to include the other person in his discoveries, achievements, and pleasure--is really the more fitting term.

Nor do I think the child's showing and giving of toys to strangers--as we saw in the field observations--should be regarded as appeasement behavior. Blurton Jones has reported how often children from 2 to 4 years of age in the nursery schools he visited in England held out toys to him--a stranger--behavior also seen by Halverson in Bethesda. Neither observer implied that the children were thereby seeking to appease the stranger.

Altmann proposes that a classification of behavior is natural to the extent that it fulfills either of two criteria which he calls the logical and the biological. The logical criterion demands that the behaviors fall into a classification, as it were, by themselves. Furthermore, to constitute a natural class the concept of sharing should be able to enter into propositions other than those which state the classification itself. The biological criterion, on the other hand, demands that the classification represent behaviors that occur in the species' natural habitat. It seems to me that the three behaviors we used to define sharing satisfy both sets of criteria and qualify as natural, rather than as arbitrary, units.

The three measures may be weighed in still other balances. What are their psychometric properties?

For example, how well do the three measures of sharing stand up to the criterion of observer-agreement? Giving was recorded the most reliably; the median percentage of agreement calculated over 4 of the studies was 100. Showing was recorded next most reliably; the percentages ranged from 84 to 92. Playing with an object given to the adult and still in contact with him (a duration measure) proved the most difficult to measure reliably, percentages here ranging from 81 to 85. These results may suggest that giving should be accorded more weight. These observer-agreement measures, however, were taken on the spot, through one-way windows, and the observers often missed behavior that was clearly visible on the video tapes. When some day we calculate observer-agreement from the tapes, showing and playing with a toy given to the adult may prove to meet more acceptable standards.

Second, the degree to which one of the three measures is correlated with the others can provide information on still another of their properties. Showing and giving generally were not correlated within children. But, playing with a toy already given and still in the possession of the recipient tended to be positively related with giving. Still, these correlations were not high enough to recommend that "playing with" is a redundant measure.

We can also learn more about the measures from seeing how they are distributed in time. Did all the showing occur early in the trial? No, for although the rate decreased gradually, children were still showing toys in the last minute of the trial. Did giving develop later in the trial? No, in general it was most frequent at the beginning, then decreased gradually, but it too was still occurring in the last minute of the trial. Unlike these two measures, playing with a toy already given did increase gradually over the trial.

Lastly, we shall know more about the three measures when, as we pursue the studies, we learn the effects of different experimental manipulations upon each--the contingencies into which they enter. At this moment, I believe that all three are of consequence and that all three document sharing.

THE ORIGINS OF SHARING

Now I would like to speculate on the origins of sharing. How in any one child does sharing begin?

In the first instance, because of the human infant's slow motor development, almost everything he needs for survival must be brought to him. The simplest example is the mother's sharing her milk. But this is only the first example. The list of things brought to him grows apace as the child grows--first things for his survival, then for his comfort, and then for his amusement. Each object brought may be viewed as an example set, a model provided. The examples, perhaps trivial in themselves, abound and multiply. Thus, we can speculate that the child's bringing things to his parent may be accounted for, at least in part, by that easy and flexible mode of learning we label imitation.

Although the first parental sharing is giving--bringing something to the infant--showing that something to him before it is given must occur when the infant is only a few months old. Thus, the parent holds the bottle, the spoonful of food, the bright object, for the child to see. Before the infant is much older, the parent accompanies the showing with words. He says, "Here's your bottle," "Look at the pretty toy." And, only a little later--before the child can understand the words--the parent points to objects, saying "See the dog," and so on. Parental showing must be as common as parental giving. So, too, we can speculate that parents engage in some manipulation--play, if you wish--of the object the child already holds.

Thus, each behavior enumerated as a component of sharing by the child has often been exhibited toward him by parents, siblings, relatives, baby sitters, and other persons. Long before he is a year old he has boundless opportunities to observe. As soon as he acquires the motor skills, he imitates the showing, giving, and playing with the objects given to other people.

But imitation need not carry the whole burden. In large measure the child's first sharing behavior, which I believe to be showing--holding out an object toward us--often meets with some response from the person toward whom the object is directed. At the least, the person looks, but we may surmise that on many occasions the looking is accompanied by turning the head, and by verbal responses, such as "Yes, I see it," "That's a cookie," and so on. Where the child points, we look, as we saw our mothers do. Tiedemann in 1787 reported of his son when the child was 8 months and 20 days old: "Whenever he met with anything novel or strange he would point with his finger at it to call other people's attention to it, and employed the sound 'ha! ha!'. That the pointing as well as the exclamation were addressed to others was apparent from the fact that he was satisfied as soon as people signified that they also had taken note." Now, even more of a response is elicited from the recipient when something is given him. The earliest account of giving I found was Guillaume's of his daughter at 9 months and 25 days of age offering to put in other people's mouths the candy she had put in her

own. How does one respond? We smile, say thank you, and like as not name the object. Everyday observation thus offers abundant evidence for the child's learning to share by the rich social response of others.

Still another process of learning may be invoked. On several occasions I have seen a game of give-and-take develop between parent and child about 12 months of age. As the child takes the object from the parent, the child laughs; he offers it to the parent; as the parent takes it, he laughs again. The sequence is repeated many times, in almost exactly the same way, and always accompanied by glee. He is controlling the behavior of the other person, as the other person is his. But, even more, he seems to enjoy his power to initiate and sustain sensory and motor feedback by his own behavior; it is a kind of self-reinforcement.

However, then, sharing does in fact originate, there has been ample opportunity for the child to learn it--first, by observing the behavior of others toward him, and second by the responses of both others and himself to his own behavior.

But setting forth the opportunities that the infant and young child have to learn to share does not prove that he does in fact learn to share; any more than specifying the processes by which he could learn the response proves that it is in fact by these processes that he did so learn. I speculate only on possibilities that await experimental evidence.

SHARING AMONG OTHER SPECIES

Another avenue of speculation about origins took me to a survey of sharing among other mammals and even to a survey of sharing in prehistoric man.

Does man alone share with others? Obviously not. Many mammals share food with their young beyond the characteristic that defines a mammal, that is, that the mother suckles the young. I have seen a domesticated female dog regurgitate part of her meal to be eaten avidly by her pups. A dramatic example, currently to be seen in a Jane Goodall TV special on the wild dogs of the Serengeti Plain, is the regurgitation of part of a kill for the pups by adults of both sexes. And cats are reported to bring mice to their kittens.

Now, among the nonhuman primates, sharing of food with the young appears to occur very infrequently, based on reports in the literature and my own observations. That may be easily accounted for--although perhaps not accurately--by the ready availability of food at hand and by the ability of the monkey or ape to secure food by himself while still very young. Evidence of sharing among primates does occur in reports of meat sharing. Recently Teleki detailed the capturing of live prey by male chimpanzees and the sharing of the meat--eventually with all members of the troop, but not directly with the young.

I could find in the literature, however, no evidence that the young of any species, even of the great apes, shared anything with others--no showing, no bringing to, no giving. This does not mean that it does not occur. I may not have read widely enough. Or the investigators may not have paid attention to the behavior when it did occur, an omission that occurs even in the human child literature, as I have been at pains to show.

THE HISTORY OF HUMAN SHARING

Having found no support for sharing among the young of mammals other than man, I next turned my attention to the literature of the cultural and physical anthropologists. In the indexes of the books I looked at, more prominent than sharing by itself was the entry meat-sharing. Of course, Teleki's article on the chimpanzees had already alerted me to meat sharing. Although I found no accounts of infants or children bringing things to other people, I was struck by the space devoted to speculations on meat sharing among prehistoric man--man the hunter--and to portrayals of meat sharing among still-extant hunting-gathering societies--the Bushmen, the Eskimo, etc. The speculations concerning prehistoric man were full of details about the drama of the hunt. The accounts of extant societies stressed in contrast the effect of meat sharing in reducing social tensions and smoothing social relations.

Interesting as I found the excursion into the literature, I was falling into the trap of gleaning exotic details. Only a little further reading convinced me that the students of the archeological record were themselves concentrating on the exotic and were ignoring the much more frequent gathering of food supplies. What was gathered must also have been shared.

DeVore has been at pains to make the point that hunting is risky but gathering is sure. Meat is valued but 80% of the Bushmen's diet is vegetable, the gathering of which is mostly the woman's job. According to him, a home base to which all return at night, hunters and gatherers alike, is a human development, not occurring among the other primates. Thus, sharing between a male, a female, and their offspring becomes the basis for the human family.

Significance of Child's Sharing

I come back now to the child's sharing. The advantages of others' sharing with him are clear: his life depends on it. But his sharing with others possesses many advantages for him, too. He obtains the attention, pleasure, and approval of others. As they respond verbally, as they name what he shows or gives them, he also acquires information about his universe. The differences in responses teach him about the differences in the people around him. In a still more important way, he is practicing a behavior of consequence for living with others. He is reciprocating past favors and he is cooperating.

Viewed in this way, the young child's sharing with others may be characterized as adaptive. He does not share because his ancestors shared; we have long since discarded the theory that the individual repeats the phylogenetic history of his group. And he does not share because he must share when he grows older. He shares because sharing had and has survival value for him as a child. As Ghiselin and Konner have proposed, we should view the child himself as an adapted organism. His sharing now--as an infant and young child--is a pattern of behavior that has been selected for in the evolutionary sense. The child's sharing is a behavior adapted to his social environment; it confers both social and educational advantages. In Ghiselin's words: "A child, like a caterpillar, is an organism in his own right, adapted to his own ecological niche." Rather, it is possible, and now I use Konner's words, that "the characteristic features of adult human behaviour have evolved . . . because they are the result of an ideal adaptation in infancy."

This interpretation of the infant's sharing forces a developmental perspective. We start with a young organism already sharing. What happens to that behavior as the child matures? What changes occur that make it necessary for parents only a few months later to begin to exhort him to share? Which of life's experiences altered this early flowering of truly social behavior? And what of the form parental tutelage takes? Staub has suggested that children in our society are more often taught prohibitions, without sufficient emphasis on the norms that prescribe prosocial behavior. It is easy to be pessimistic about the outcome, knowing as much as we do about the mean, selfish, and heedless behavior of so many adults. But just as properly we may take comfort from man's frequent altruistic behavior and see it as the later development of that early sociability. Fortunately, the altruistic behavior of older children is now commanding increasing interest from developmental psychologists.

I have been at pains in the past to show that the infant welcomes new objects, people, and experiences, that he ventures forth with zest to learn the nature of his world, and that he strives to be independent. Now I see him displaying at a very early age the social behaviors people everywhere value, even when they do not always honor that value. A major task confronting us as psychologists, parents, and citizens is how to build upon that generous nature.