

Behaviour of Juvenile Bonnet Monkey Before and After His Mother Gives Birth to a New Baby

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ABSTRACT. Five juveniles in a free living group of bonnet monkeys were observed before and after their mothers gave births to new babies. The human infant is said to be a rival of his sibling because the new born baby becomes a centre of mother's affection and the old infant starts feeling neglected. The present study was planned to observe this phenomenon in monkeys. It has been concluded that the so called sibling rivalry does not exist in monkeys.

INTRODUCTION

It has been observed in human beings that the birth of a new baby in home causes many abnormal symptoms in the behaviour of the juvenile (CUMMINGS & SCHNEIDER, 1961; STOTT, 1959). Since the behaviour patterns of non-human primates resemble many complexities of human behaviour patterns, they have been the focus of attention of the investigators in the field of comparative behaviour studies. For the development of behaviour and social learning, the social group is environment for an young primate. The present trend of studying behaviour is to observe the animals in their natural environment, because the findings from controlled laboratory conditions have been found to be inadequate. The development of the young primate has been observed by various primatologists, but no one has conducted intensive investigation regarding sibling relationships. They observed this phenomenon partly in their studies of social behaviour. SOUTHWICK, BEG, and SIDDIQI (1965) observed that in rhesus monkeys, juveniles and infants did not mix extensively. They usually play with their own agemates. While studying baboons, HALL and DEVORE (1965) reported that the increasing independence of the young juvenile is partly shown by the fact that now, when there is some object of danger, the juvenile tends to flee to the protection of the adult males and not to the mother or other adult females.

PRESENT STUDY

Taking into view the observations taken on human beings regarding sibling rivalry, the study was planned to observe whether or not the monkey juvenile is jealous of his new born sibling. It is an intensive and long range observation on the sibling relationships in a group of free-ranging bonnet monkeys in Mysore City of India. Two groups were found in the study area. The interactions between the two groups were seen very rarely because the other group always avoided the observed group.

SUBJECTS

A free-living group of bonnet monkeys was observed. This group lives in the field owned by the Horticulture Department, Mysore, with Herb Gardens (South India). The home range of this group is overlapped by one more small group of bonnet monkeys. The food sources for the monkeys are fruits and leaves of the garden. However, sometimes they steal human food from the nearby houses also. The composition of the group was 23 animals, i.e., four adult males, five adult females with babies, four sub-adults and five juveniles.

DESIGN AND PROCEDURE

Five juveniles were observed before and after their mothers gave birth to new babies. The five new-born infants were also observed. The method of observation was both quantitative and qualitative. For quantitative data, Monkey Behaviour Inventory: 20 Sec Interval Data Sheet (for frequency & duration at one time) was used. For qualitative observations, the notes of their behaviour were taken. The total time spent for observation was 82 hours. Before the birth of new babies, juveniles were observed for 10 hours on Monkey Behaviour Inventory and eight hours notes were taken. After the birth of new babies, the juveniles were observed for 20 hours and the new born babies for 15 hours quantitatively on Monkey Behaviour Inventory, and 29 hours were devoted to take notes of their behaviours. Attempts were made to quantify the observations taken in form of notes. The observation lasted from first week of December, 1974 to the second week of May, 1975.

As the number of juveniles and new born infants observed was five in each case, the mean for total of 20-Sec Intervals of each behaviour by five subjects was calculated. All occurred behaviours were noted down at the time of observation, but while doing analysis, only important behaviours were taken into consideration.

OBSERVATIONS

Table 1 shows the juvenile's behaviours before and after the birth of new infants and the t for the differences between two means.

The table shows that before mother gave birth to a new baby, the old infant (juvenile) made ventral-ventral and nipple contact with mother for 70 and 14 20-Sec Intervals respectively, but after the birth of a new baby, he did not show these behaviours at all. So far as proximity or non-specific contact with mother, and juveniles approaches toward mother are concerned, the derived t ratios for the differences between the means of two stages are 20.6 and 12.4 respectively, which are significant at .01 level. As the means and percentages for these behaviours are less after the birth of new baby than before it, it shows that these behaviours significantly decreased. The birth of new baby did not affect mother's unfavourable behaviour toward the juvenile, and juveniles' environmental exploration manipulation and self-play were also not affected. Juvenile's play with peers, grooming, or social exploration manipulation of peers, and total time spent with peers significantly increased after the birth of new baby.

Table 1. Juvenile behaviours before and after the birth of new babies; mean and percentage of 20-sec. intervals; and "t" for the differences between means of before and after birth.

Behaviours	Before birth			After birth			t	Significance level
	Mean	Maximum intervals	Percentage	Mean	Maximum intervals	Percentage		
(1) With mother								
(a) Ventral-ventral contact	70	360	19.4	0	720	—	—	—
(b) Nipple contact	14	360	3.9	0	720	—	—	—
(c) Proximity, non-specific contact	153	360	42.5	38	720	5.2	20.60	.01
(d) Approaching mother	81	360	22.5	21	720	2.9	12.40	.01
(e) Mother's unfavourable behaviour	15	360	4.2	33	720	4.6	0.60	
(2) Self play	61	360	16.9	121	720	16.8	0.05	—
(3) Play with peers	124	360	34.4	404	720	56.1	14.60	.01
(4) Grooming or social exploration manipulation of peers	62	360	17.2	193	720	26.8	6.61	.01
(5) Total time spent with peers	186	360	51.6	597	720	82.9	13.01	.01
(6) Environmental exploration manipulation	143	360	39.7	295	720	40.9	0.75	—

Table 2. Mean and percentage of 20-sec. intervals of behaviours by 5 new-born infants (maximum intervals are 540).

Behaviours	Mean	Percentage
(a) Contact with mother	325	60.2
(b) Play with mother	42	7.8
(c) Play with agramates	38	7.0
(d) Play with juveniles	19	3.5
(e) Groomed or cradled by mother	136	25.2
(f) Groomed by juvenile	46	8.5
(g) Environmental exploration manipulation	53	9.9

Table 2 shows the behaviour of new born infant.¹⁾

Table 3 presents mother's behaviour towards her old infant (juvenile) before and after she gave birth to a new baby. The table also shows the *t* for the differences between two means.

The *t* 17.8, being significant at .01 level shows that mother's favourable behaviours like grooming, playing, approaching the juvenile etc. significantly decreased when she gave birth to a new baby. However, there was not any effect on her unfavourable behaviour like punishing, threat, rejection etc. of the juvenile.

Table 4 represents the mean number of occurrences of juvenile's reactions to the external danger to the group.

Tables 5 and 6 indicate the new-born infant's behaviour towards the sibling juvenile and the juvenile's behaviour towards the new born sibling.

One example of qualitative observation is given below:

* The intensive and detailed analysis of infant's behaviour is under preparation for another paper as 'the psycho-social development of bonnet infant'.

Table 3. Mother-juvenile interactions, before and after the birth of new infants: also showing "t" for the differences between two means.

Behaviours	Before birth	After birth	<i>t</i>	<i>p</i>
	Mean 20-sec. intervals	Mean 20-sec. intervals		
(a) Mother's favourable behaviours	52	8	17.8	.01
(b) Mother's unfavourable behaviours	15	33	.6	

Table 4. Mean number of occurrences of juvenile's reactions at the time of external danger to the group.

Behaviours	Before birth of new infants	After birth of new infants
(a) Approaching mother	26	1
(b) Threatening or barking at the danger object	32	74

Table 5. New-born infant's behaviour towards juvenile sibling.

Behaviours	Mean: number of occurrences
(a) Approaching juvenile	36
(b) Mutual contact play with juvenile	19
(c) Non-mutual contact play with juvenile	7

Table 6. Juvenile's behaviour towards the new-born sibling.

Behaviours	Mean: number of occurrences
(a) Play	19
(b) Grooming or social exploration manipulation	46
(c) Threat or clasp-pull, bite	15

May 10, 1975.

At 1716: Juvenile 3 (J_3) is doing environmental exploration manipulation. His mother (M_3), with her new-born infant (I_3), is also at a distance of about 5' distance from him. I_3 leaves the mother and approaches J_3 for play. I_3 touches J_3 , but J_3 avoids him and keeps himself busy in exploration. I_3 starts playing non-mutual contact play with J_3 .

At 1719: J_3 bites I_3 and pulls his leg. Infant screeches and submits. M_3 jumps on J_3 and punishes him. J_3 withdraws. M_3 retrieves I_3 and ventrally carries him to some other place.

DISCUSSION

As already mentioned, the main purpose of this investigation was to observe the changes in juvenile's behaviour when his mother gave birth to a new baby and the behaviour of the juvenile towards the new-born infant. At this age, juvenile is weaned. He becomes independent of his mother. Because the mother has to take care of the new-born infant, so the juvenile completely loses his social ties with mother.

Juvenile starts developing all kinds of social behaviour and takes interest in the

activities of the group. He takes a position in the social organization of the group. He shows some patterns of dominance-submissiveness and assumes his rank in the group's dominance hierarchy.

At this age, the juvenile is not dependent on his mother for his biological needs. Before weaning, the infant is dependent on mother for his basic needs of food and protection. It has been observed in rhesus monkey (North India) that at such an age-level, something separating the infant from his mother causes depression and other severe abnormal symptoms in the infant (SINGH, 1975). But now, the juvenile depends on the solid food explored from the environment, which he himself has to do. When there is some external danger to the group, he himself runs away for the protection and even sometimes threatens the danger object and barks at it. In intra-group interactions also, when he is threatened by some adult male, he does not approach the mother.

Play is the most important activity of this age. Before the birth of a new baby, the old infant (juvenile) spent sometime with the mother at the resting timings of the group. But after new baby's birth, the juvenile seldom approached the mother. The play is often among the agemates. The juveniles meet together and form their play groups. If the play is disturbed by some adult male, the juvenile never runs toward the mother but runs away to escape from the threatening animal.

The juvenile does not mix with the new born sibling. Only 19 times, the juvenile was seen playing with the new-born baby, and 46 times grooming him. Sometimes, the juvenile showed unfavourable behaviour towards the new born infant, but each time he was threatened by the mother. Table 6 shows 15 occurrences of threat and bite by the juvenile toward the new born infant, but it does not mean rivalry there, because, most of the times, it happened in situations where the infant again and again tried to initiate the juvenile for contact play.

The observations of the present investigation and the discussion made so far show that there is not much interaction between the two ages i.e., the new-born and the juvenile. If the juvenile sometimes threatens or bites the new comer, at other times, he shows his affection for him, grooms him, and plays with him. The so called 'sibling rivalry' does not exist in monkeys. Their basic needs are food and protection. A juvenile is dependent on himself for both of these needs. So, if there is a new baby with his mother now, he does not react to it with jealousy. He just does not bother it, and it results into very less interaction between the new-born infant and the juvenile. The phenomenon sibling-rivalry might exist in human beings, because the human infant is psychologically and biologically very much dependent on mother for a long period. But, when the monkey infant becomes self-dependent, he loses his psychosocial ties with his mother. The birth of a new baby from his mother is not any kind of thwarting for the juvenile.

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—Received *September 25, 1975*; Accepted *August 7, 1976*

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