

## War and Peace: In Primate Form

*Franz de Waal, the author of Peacemaking Among Primates is an ethologist trained in the tradition of Lorenz and Tinbergen and thus with an intellectual approach based on the importance of observation of animal behaviour. In his first book Chimpanzee Politics his preface makes the argument that his interpretations of behaviour are not Anthropomorphic, but are based on thousands of hours of observation, not only of the animals but also of the consequences of their behaviours. He does not begin by attributing motivations to the interactants, but as he follows their developing strategies, he does begin to use such terms as 'wily' and 'influential'. By the time a reader is finished that book they are convinced that chimpanzees can make plans for the future and follow them through and that they are strategic in terms of their social interactions.*

*Peacemaking Among Primates develops the previously mentioned themes of primate social planning ability. In this book he focuses on communication gestures which are involved in establishing and maintaining positive social relationships. Here he compares the abilities of chimpanzees and monkeys, (mainly macaques) in an effort to show that it is not just phylogenetic level but the actual nature of a species that impacts how they establish and maintain their social relationships. This data was very important at the time of publication because many people were still arguing that primate communication was a very hard wired mechanism, whereas this work demonstrated that differing uses of facial gestures and vocalizations were quite context dependant and manifested considerable levels of learning. The differences between genders in communicative expressions is also an important aspect because young males would have to learn the appropriate patterns of signals from group members other than their mothers.*

*This detailed study of reconciliation activities not only provided data about communication but provided inferences about the importance of reconciliation in primate groups. The strength and direction of social bonds does differ from species to species and is directly related to the structure of the group. Common chimpanzees do manifest reconciliations, but usually between males, although the females may facilitate such rapprochments, because it is the male bonds which hold common chimpanzee groups.*

*Peacemaking Among Primates.* By Franz de Waal, Cambridge Mass. and London England: Harvard University Press, 1989. Pp IX, 293. (ISBN 0-67465920-1)

This book is intended as an answer to Konrad Lorenz's famous classic *On Aggression*. Franz de Waal argues that although aspects of aggression may be integral to human life, the phenomenon of peacemaking, or reconciliation, is just as necessary and has an equally long evolutionary history. The rationale for this argument is based on the understanding of group life as composed of the needs and desires of a number of individuals who have a blend of both common and independent goals. The pressures that these divergent forces will bring to bear on group structure will obviously cause some individuals to come into conflict. Once this has happened group cohesiveness is in jeopardy unless ways can be found to minimize individual dissention. It is this process of regaining social harmony that de Waal explores by discussing data he has personally gathered from four species of non-human primates, chimpanzees, rhesus macaques, stumptail macaques, and pygmy chimpanzees and comparing this with material on humans.

In the prologue de Waal emphasizes that he does not ascribe any aspect of morality to the behaviours he is describing. To him, aggression is not "bad" in the moral sense. "The condemnation of aggression as an antisocial behaviour is, like all morality, a simplification" (p.237). Many people, and animals get their own way through aggressive behaviour. In humans this may range from masked social humour through practical jokes, to fights, brawls, and finally war. Aggression towards others can also be turned on the self as in suicides 'to make them sorry' (Counts 1). Some positive results of aggression are suggested as occurring across the animal kingdom. These include the higher levels of reconciliation that seem to occur in a mildly aggressive atmosphere, the potential for expression of bonding during reconciliation, and the development of group identity through such painful human rituals as initiations. On the other hand, peace may be bad or good depending on who is suffering from it (p. 12). In many cases, peace, especially when maintained by safekeeping forces, is really opportunistic reconciliation, as opposed to a state of harmony based on trust. There are cases in which aggression has a beneficial outcome for the actor and those in which peace is not necessarily the optimal state for both parties. It is this ambiguity which makes the contribution of morality difficult. This non-moralistic view of aggression versus reconciliation is a major aspect of the context for this book.

The type of research undertaken to investigate this phenomenon is long term observation of well known captive groups of primates. This has both positive and negative aspects. Captive conditions allow study of known animals over the long term and an understanding of the effects of kin relationships on affiliative behaviour, which are very difficult to obtain in the wild. de Waal also argues that social organization is made clearer in captive groups because the buffers of space and potential for migration are removed from the system, thus forcing animals to reconcile their differences. However, many researchers who have studied both captive and wild primates feel that the stresses of captivity cause many more aggressive interactions to occur, and may change their typical intensity (e.g. Rowell 1972). Thus the frequency and nature of reconciliatory behaviours may be situational, rather than reflecting the 'natural' state of a social group. On the other hand, if the human comparison is the real rationale behind this book, then the human condition of crowding and competition over resources and mates, may be more accurately reflected by captive animals! Therefore de Waal feels that to dichotomize between the value of studying captive and free ranging primates is less valuable than realizing that evidence from both conditions yields significant information about the reconciliation process.

## **Theory**

Does behaviour rest solely on the biological foundation of life; the functional requisites that must be met to keep the organism alive and propagating? Or, is behaviour like reconciliation based largely on the ramifications of decisions made for chiefly psychological reasons? Particularly for group living animals, there has long been a debate about the primacy of adaptation: do groups function in order to benefit individuals, or are individual relationships the foundations of group life? The last two decades have seen the dramatic development of a theoretical position called sociobiology which argues that the genetic basis of behaviour is one of its most important attributes, since it is genetic material which is passed on from one generation to another, and is the subject of adaptation. de Waal, however, chooses to examine behaviour from the psychological perspective of what the behaviours mean to the animals engaged in them. He regards group cohesion as the result of genetic predisposition, individual experience and the impact of behaviour on society.

Therefore, although he finds differences in communicative signals between species, and differential roles for males and females in reconciliations, he sees the need for reconciliation as a common phenomenon across the five species he studies.

This allows him to take advantage of the anthropological focus on the evolutionary relationship between humans and primates to develop insights into human behaviour. In particular, as an ethologist he must distinguish between the mechanisms of analogy and homology. He argues for homology in both the structure and the function of reconciliation behaviour, even though humans overlay theirs with the complexities of language and culture.

A potential for confusion and inaccuracy exists he, through a possible implicit political use of language. The terms that have been used in many books on primates, such as territoriality, aggression, coalition, friendship, political manoeuvring and even peacemaking are all words which were initially used to refer to human behaviour. To assign the motivation, for example, of anger to an animal who acts in a way 'defined' as aggressive, is a potential inaccuracy. de Waal is aware of this problem and comments that although he (and essentially others, eg. Smuts 19) use these terms they do so with an understanding that they refer to behaviour more than emotional loading. He states that hundreds of hours of behavioural data support the frequencies and sequences of activities he reports. When animals reconcile, they approach, make physical contact which usually extends for some time, and do not immediately resume the threat, flight, or flee behaviour seen in their previous interaction. The nature of their mental state is difficult to determine, but they act as if that produced particular results. This problem with the 'meaning' behind a word is outlined for the human condition, in a discussion of what is meant by the term 'peace'. Is it an absence of conflict due to a balance of power or utter defeat, or the absence of desire to fight? The emotional states of the three are quite different, but the cessation of conflict may have the same functional result.

An additional point is the fact that observation of animal behaviour requires learning how to see. People watching honey bees before Karl von Frisch saw something quite different from those who observe with the benefit of his insight. Again and again this has been demonstrated in observing primates. The information comes in, but it is the patterning of the information that has social relevance and allows the observers to gain some insight into what is happening in a social group. de Waal mentions that he saw reconciliations among chimpanzees many times before he recognized them for what they were. With this understanding of the integration of data from wild and captive studies, the value-free nature of reconciliation, the theoretical background of research on behaviour in groups, an appreciation of dangers of labelling with human terms, and the ability to recognize the behaviours seen, de Waal began his research.

### **Comparative Data**

The data base of this study is drawn from 2 genera of nonhuman primates, Pan and Macaca. The chimpanzees (Pan) have long been regarded as an excellent non-human model for human evolution and behaviour because they are our closest living relatives both evolutionarily and genetically speaking. We share over 98% of their DNA structure and they exhibit many categories of complex human behaviour at some level. Bonobos, or pygmy chimpanzees, which are the second of the ape species studied, have been described as potentially even more like the early form from which ape and human derived than the common chimpanzee. This argument is supported by

differences observed in structure, grouping strategy, social relations, and general behaviour. Macaques are also very interesting primates to examine when considering human behaviour, because of all the genera of nonhuman primates they seem to be the most ecologically adaptable, and in this flexibility rival hominids at least in their precultural state. Their social structures seem to be quite variable, although most are found in the multi-male multi-female groups that are characteristic of the rhesus and stumptail species described in this book. The chapter on common chimpanzees compares data from several free-ranging studies, with research on a large captive colony at Arnhem Zoo, which de Waal studied for 6 years. The wild chimpanzees demonstrate both aggressive and reconciliation behaviours between all combinations of both sexes. Adult chimpanzees are capable of killing each other, and given their great strength and volatile natures, the question of why more animals are not killed springs to mind. The answer seems to be definitely rooted in the nature of group bonds, since almost invariably adult killing has been confined to nongroup members. The process of defusing aggression, communicating submissions, and reestablishing social relationships is very important to chimpanzees, particularly because the males of a group must cooperate with each other and are very seldom united by kin bonds. In most chimpanzee troops the males form a close association of animals that feed, groom and travel in company, and act together to attack or chase out non-group males. In order for this association of males to have reliable coalitions, such that the males will support each other when in conflict, long term process of building social networks must occur. In addition to this general level of affiliation is the shifting nature of social alliances which support particular individuals in their quest for and attainment of high social standing. In 1982 de Waal published a book about the Arnhem chimpanzees called *Chimpanzee Politics* in which he outlined the long term manoeuvring undertaken by several males for the top ranking position. Males will change their behaviour towards each other in terms of success in soliciting support, harassing another or shifting support back and forth between others in order to maintain a certain level of influence in the group. He also recounted that after males had engaged in fights or aggressive displays sometimes females would come and sit between them, inviting grooming from the first one and then the other until the males were in contact with each other and the level of tension had eased. According to de Waal chimpanzees exhibit rank by receiving communications of deference such as a head boob and pant grunts from subordinates. The higher ranking animal will also jump over subordinate one, or at least pass an arm over him. In times of conflict between two males, it one will not exhibit submissive behaviour the process of reconciliation is stalled. The animal who is gaining status will begin to refuse the held out hand or approach of his rival by turning his back and leaving. This seems to distress the rejected chimpanzee who may roll on the ground and scream, as if were an infant in a weaning tantrum (p.40)

"It seems, then, that chimpanzees are extremely sensitive to the potential disturbance of their relationships; they may fear it even more than the unpleasant physical results of aggression" (p. 48)

When status relations are clear, reconciliation seems to follow more quickly. The types of behaviours that occur during a chimpanzees reconciliation include, approaching, hand out, eye contact, soft screaming, and kissing. Kissing may involve mouth to body contact, or taking of the offered hand into the mouth. Kissing behaviour is much more frequent in reconciliations than as a component of other classes of behaviour. Hugging behaviour, on the other hand, is more frequent as a gesture of consolation by a third party not involved in the dispute, to whom one of the goes for comfort.

The statistical assessment of data suggests that male chimpanzees resolve their conflicts with reconciliation 47% of the time, as compared to 18% among adult females. On the other hand chimpanzee females support each other over the long term, based on kin affiliations and personal preference, while males, as indicated above, are more situational and labile in their coalition behaviours. Females defend their offspring and friends and attack their enemies, while males may attack animals they frequently groom with. Thus, it seems that males need to repair endangered social relationships more than females, if today's victim may be tomorrow's associate. de Waal suggests that females are more selective about who their social contacts are with, do not attack their good friends, and do not reconcile at all with certain animals, thus leaving them with a smaller proportion of reconciliations. He cites Goodall's work on wild chimpanzees as providing similar data on the gender difference in reassurance behaviour. These differences are intriguing since it appears that stable bonds are a focus of female life, and yet arguments exist that chimpanzee females are less kin-bonded than males, since females are frequently migrants (Goodall 1971, 1986).

Over a period of several years the relationships between the three adult males of Arnhem were fluctuating. The highest ranking male had lost his formal rank, but the females exhibit spontaneous submissive gestures to him. The end result of the changing coalition was that 2 males attacked and wounded the third so badly that he died. When the surviving males and females were let out together, the female who was the dead male's main ally persistently chased the high ranking attacker and had him cornered in a tree for some time. It took months for the group to settle down and protracted and intense grooming bouts between the two males who were left, to restore social harmony. The tendency of the males to associate during times of tension is also noted during periods of rivalry over access to estrus females. Males may also sit and groom for long periods before one of them approaches the female to mate. In cases where this is the less influential of the males, the long grooming might be seen as 'reconciliation in advance'. Females, who are in a position of potential rivalry, however, tend to keep apart from one another. Also de Waal mentions that status rituals are rare among females, without tying this information to his observation that relations between females tend to be very stable and thus expressions of status are not necessary, since it is a constant factor of the social environment. Thus the differences in frequency of reconciliation behaviour between male and female chimpanzees is probably not related to a differential importance of maintaining social harmony, but a different level of stressing it. de Waal does not come right out and express this, but it is certainly implied.

Tensions in the group are also managed to some extent by food sharing behaviour. Interestingly the gestures and facial expressions used to beg for food, are very similar to those used to beg for reassurance.

The two species of macaques discussed show considerable levels of difference in their general social behaviours, which is correlated with differences in their reconciliation patterns. Rhesus monkeys show strong maternal bonding with the members of each matrilineal group having equivalent status in ranking of families, usually based on rank of the founding mother. This ranking is based on social factors rather than tooth size or body weight, and holds for the whole family.

There seems to be quite a high rate of aggression (threats and chases) among rhesus (18 acts/10 hrs.) but this is overshadowed by the 38 acts/10 hrs. observed for the stumptail macaques. The stumptails, on the other hand are less rigidly organized in

status relationships and more relaxed about letting their infants interact with others on their own. The differing nature of social relationships between stump-tail and rhesus macaques is very probably related to differences in their frequency, patterning and intensity of reconciliation behaviours.

When females of a rhesus matriline quarrel, the incidence of reconciliation is much higher than among unrelated females. Within-family fights often devolve into joint attacks on outsiders, which allows the family members to regroup and interact in a supportive way. The pervasiveness of female matrilines is made clear by the observation that if there is an antagonistic interaction between unrelated females, the other family members of the loser are frequently also attacked even though they may have nothing to do with the original interaction. The presence of infants can defuse a tense situation between females, who can sit together and lip-smack in friendly communication over the baby.

The pattern of reconciliation behaviour between chimpanzees and rhesus is quite different. In an aggressive encounter rhesus stare fixedly at each other, while chimpanzees avoid eye contact, but when reconciliation is occurring chimpanzees (and humans) make eye contact, whereas rhesus (and the other macaques) look everywhere but at the other monkey. de Waal says that this pattern suggests to him that rhesus reconciliations seem practically accidental.

They seem to resume activities where they left off, but with subtle differences. For example, a reassurance-seeking rhesus would sidle up to the back of her previous opponent and begin to groom or lie with her back to the other rather than trying the frontal approach with hand held out which would just be asking to be bitten. When a previous antagonist avoids approaches, rhesus have been seen to appear to be trying to catch flies, looking up and making grasping motions with their hands, which eventually brings them into unfocused contact. Or, one animal may go to have a drink, only to find his previous antagonist beside him, drinking also. Once contact has occurred there is usually a reduction in tension with possible grooming, or relaxed sitting. The reason for relaxation after initial contact seems to be the displayed absence of negative behaviour by the higher ranking individual. It did not grab, bite, cuff, or otherwise aggress, and the previous incident can be considered closed. de Waal calls this "implicit reconciliation", in which behaviour continues as before, whereas in 'explicit reconciliations' animals engage in contact behaviour of a particular type, that bears the social message of eliminating previous misunderstanding, such as a chimpanzee kiss or hug.

The statistical evidence supports the idea that friendly contest occurs more frequently after aggression than in control periods. This friendly contact was not generalized to the whole group, but occurred particularly between the previously antagonistic pairs in about 20% of cases. When episodes of reconciliation were separated by gender the initial findings showed the same type of breakdown as in chimpanzees, with male-male, and male-female conflicts ending in reconciliation more frequently than female-female ones. This was surprising because while the concept of selective friendships could be viable for female chimpanzees, it seemed that highly integrated status-oriented rhesus females should need to keep their social bonds in working order. de Waal then conducted some experiments using restricted access to water which indicated that there was a horizontal division across the group between animals he called upper class and lower class. This was not a complete barrier to interactions since many rhesus had grooming associations and friendship bonds which crossed the division. Conflicts within each class however were reconciled much more frequently

by females than conflicts between the two classes.

In fact, within-class reconciliations by females, whether related or not was as frequent as reconciliations by males. However, attacks by upper class females on lower class ones were very seldom followed by reconciliation behaviours. Interestingly, particularly intolerant behaviour was observed by females at the lower edge of the upper class, towards those at the upper edge of the lower class. This division between females is also reflected in support relationships when females have been attacked. In addition to family coalitions upper class animals will support one another if attacked by lower class ones. de Waal spends some time discussing the benefits of upper class memberships, but warns that he does not suggest that it forms the foundation for the human culture-based system of classes. He does argue, however, that both class and matriline membership have a major influence on which animals rhesus females will reconcile with. Male reconciliation behaviour among rhesus utilizes the same behaviours as among females, but occur in a different pattern. They frequently spent more time together after antagonistic interactions, showing cohesiveness and grooming at higher levels than during control interactions. As occurs among chimpanzees, male bonds are developed particularly with non-kin males whose support is needed to establish social position. When aggression occurs between them it may take as long as an hour for one of the males to approach the other, but when he does the association is positive, and frequently attracts other males to sit with them. Males also have their own female support relationships; females they support and who back them up in aggressive interactions. If there is an antagonistic interaction with these females it is usually reconciled fairly quickly. The major difference with chimpanzees seems to be that rhesus females are more apt to fight with their kin and friends and then reconcile, than chimpanzee females, and thus they raise the frequency of their conciliatory behaviour within their own social class to the level of male reconciliation.

Stumptail macaques also differ from rhesus in sexual interaction since females do not show the posterior swelling characteristic of rhesus females in a receptive state. Rhesus females will only breed in this state, and mounting behaviour at other times is for social rather than reproductive reasons. Stumptail females, who do not exhibit physical signs of estrus will mate more frequently throughout the year. They also use sexual behaviour in both aggressive and reconciliation interactions. de Waal argues that the importance of this difference in sexual behaviour may concern the presence of orgasm in female stumptails, which is demonstrated in experiments by Goldfoot. Goldfoot suggests that this is a major benefit to the species, because it occurs in reconciliation interactions as well. Incidentally, de Waal is incorrect in attributing the discovery of orgasm in female macaques to Goldfoot, since a paper on orgasm in rhesus females was published by Burton in 1971. But Goldfoot's study on the presence of orgasm in reconciliation situations shows that the orgasm face and vocalization are not seen in every reconciliation but occur after periods of great agitation. The actual position of animals is what de Waal calls a 'hold bottom' in which one animal sit behind the other holding its rump pressed against his own ventrum. This position is frequently seen after sexual encounters while males hold females with whom they are still in intromission. This may be a strong motivation for the frequent and intense reconciliation seen after high levels of aggressive interaction in stumptails.

The nature of aggression also differs between rhesus and stumptails. Stumptail social relations are not as intensely directed as rhesus ones. Many subordinate stumptails ignore threats from dominants or even return them, without serious consequences. de

Waal's claim that all macaques form matrilineal hierarchies seems questionable, especially when he then notes that in some cases they are very loosely 'enforced'. Social communication of non-aggressive approach, such as tooth chattering and grins may not be enough evidence on which to base a unilineal status assertion. However, the relaxed approach of stumptails to their aggressive encounters is correlated with a high frequency of reconciliation. After conflict the animals are in contact in 56% of cases. In many cases they sit in the 'hold bottom' formation, or engage in mouth-mouth contact (kissing), teeth chattering and genital inspection. After major fights, vocal cues are also used, both to announce upcoming reconciliations and to mark their occurrences. It seems to me that the high level of reconciliation noted after conflict may be related to the fact that the criterion for rhesus aggression (chase for 2 meters) was applied to stumptails, although de Waal noted that many episodes of stumptail aggression were observed for every one that met the criterion. He comments that it took an "exceptional effort" for them to get up and chase their opponents. This may mean that the conflict in the cases adding data to the study was particularly severe, and in particular need of being repaired.

The reconciliation process among stumptails is also status oriented according to de Waal because the subordinate presents to the dominant, who does the bottom holding. He interprets the reconciliation process as reinforcing the hierarchy and organization, even though in one third of the cases the dominant initiates the reconciliation process. The link to the status hierarchy may be another rationale for the frequency of reconciliations. de Waal also notes that friendly social interactions, such as grooming are very frequent among stumptails, and suggests that stumptails are in general a socially active species.

The combination of a high level of social activity, low levels of severe violence, and rich reassurance behaviour may coordinate to produce a particular pattern of primate relationships. In other species, varying levels of these factors may affect the nature of social interactions, and produce the different patterns that are observed. This type of inter-relationship of factors would mean that rather than one species being a model of primate organization there would be (and are) endless possibilities.

The fourth non-human primate described in the book is one of the less well known species, particularly in the wild. Bonobos, or pygmy chimpanzees, were only recognized as a separate species in this century and have only been studied in the wild since 1974. Nonetheless they are particularly intriguing because of their behavioral similarities to humans including adult food sharing, fairly capable bipedalism, almost continuous sexual receptivity by females and ventro-ventro copulation. Sexual activity seems to be quite important in Bonobo daily life. Only 200 of 600 observed sexual encounters were between mature animals of opposite sex. Females engage in genital rubbing with each other, males manipulate each other's penises, and infants and juveniles rub up against males in a state of arousal. Copulations between heterosexual adults are short (13 seconds) but in the San Diego Zoo population de Waal studied, they occurred to face to face 80% of the time (as compared to 30% in the wild). This permits eye contact and communication by facial gestures. Self stimulation of nipples and genitalia occurs in both sexes and at all ages. Thus sex is a frequent component of Bonobo life, particularly since females are sexually swollen about 75% of the month, and receptive to copulation even when they are not in estrus.

One feature of sexual arousal--particularly noticeable in males is the 50% occurrence of penile erections when presented with food: "sexual behaviour is an integrated part of the species begging and food sharing behaviours" (p.206). When a high ranking

animal had possession of a large pile of food, the others would often beg for some, and were usually successful in obtaining it. Some female in estrus would mate with the males and then take over his pile of food sometimes in the middle of the activity. Infants who had special associations with a particular male, might have sexual contact with the male, then go to their mother's pile of food and take some to the male. Sexual behaviour around food is also initiated by dominant animals and does not necessarily involve food sharing. Therefore de Waal argues that it is not the pleasure of food but the tension associated with its distribution which is being ameliorated by sexual activity.

This is the basis for his argument that sexual activity serves as a reconciliation force if there has been conflict between animals. Data from five thousand social interactions revealed that embracing, friendly touching, and sexual contact occurred at much higher levels after than before an outbreak of aggression. In fact, without such contact a young animal who had been disciplined by an older one was not free to resume other social interaction. Dominant bonobos frequently initiated reunion, which differ markedly from the situation in common chimpanzees and somewhat from the macaque pattern. Also the frequency of reconciliation after conflict is higher than in common chimpanzee. As a result, aggressive interactions did not involve the level of violent hitting and jumping on sometimes seen among chimpanzees which can lead to severe injury.

"Evidently conflict management is so highly developed that de-escalation is the rule and escalation the rare exception!" (222). Males and females both engage in this behaviour and the resulting close relationships among adults are reflected in their more tolerant, less hierarchically bound social organization.

## **Human Primates**

Human behaviour is affected by both our primate heritage, and our pronounced dependence on culture as a governing factor of life. The data on human reconciliation is sparse, outside experimental situations, or observation of young children. The behaviour of primates and children has often been compared, which is an inaccurate pairing according to de Waal. He suggests that, if neoteny (the retention of juvenile characteristics in adults) is indeed a factor in human development, human adults should be compared rather with primate young. At any rate, reconciliation behaviour in adult humans is a relatively unstudied field in our own culture, although anthropologists have given it more attention in other cultures than de Waal seems to realize.

For humans, as well as other group living primates, the conflict between individual needs and group functioning will result in some antagonistic interactions. Whether these are personal, mate oriented, child directed, or with friends or enemies, at some stage conflict resolution is required. Even monkeys can facilitate this prowess between others by engaging in grooming with first one and then the other party until the former antagonists are grooming each other. Humans use of mediators is a widespread technique. Also 'implicit reconciliation' in the rhesus style, is a pattern frequently utilized by humans, particularly if the social bond between them is not strong. de Waal has scattered his examples of human patterns throughout the text, but includes a chapter describing some particularly human reconciliation measures. These are not unique to humans, but used frequently by us. They include avoiding loss of face, the principle of the collective lie in which everyone agrees to believe something

untrue, and the necessity of maintaining family bonds by placating younger siblings even when they are in the wrong. Humans also utilize the giving of gifts as a factor in the reconciliation process, and in some cases have codified this practice into the paying of restitution, for a wrong done. Primates rely on their memories and their own abilities to manage their reconciliation procedures, but the presence of culture and law allows humans to mobilize the state, to enforce first retribution and secondly reconciliation, when the conflict is above a certain level of aggression. The psychological need to get back on good terms with associates, and particularly to maintain family unity are as clearly marked for humans as for the other primates described.

However there are certain conditions which determine whether a conflict is solved, escalates, or is apparently ignored. The cost of refusing reconciliation has to be weighed and the balance of power taken into account. In situations where there is a clear winner of a conflict, the cost of refusing reconciliation would be high because the conflict may escalate. In egalitarian systems internal strife can cause dissolution, although it is not my opinion that only in a hierarchical structure can a group find peace. The bonobos are a good example of an influence-sharing organization which maintains group harmony by pronounced conciliatory efforts, as are human communities in which endless talking is used to reach a consensus opinion. If there are tensions between two individuals, mutual attacks on a scapegoat may allow them to reconcile their differences. This can be particularly true if the scapegoat was recently a community member who for some reason has become an outsider. All of these factors in understanding the reconciliation prowess are evident in humans as well as in other primates.

## **Symbolism of Reconciliation**

The ability to manipulate reconciliations allows some primates to manoeuvre politically, by carefully placed attacks and reunions, which alter social bond in their favour (Burton 1984). Thus reconciliation is an amoral activity like aggression in that it has positive social consequences, but still allows individuals to attain their goals at the expense of others.

For a long time it was considered that the consequence of attacks was to increase the distance between two animals. It now seems that, whatever the motivation for the attack, the result is frequently increased contact between the involved parties, often with positive social activity. In various species it may be the dominant or subordinate, attacker or attacked who make the first gestures of approach to reconcile. The remarkable similarities of chimpanzee approaches begging for reassurance and begging for food has been mentioned above. Reconciliation between former adversaries often involves kissing which is a mouth to body contact similar to aggressive biting, but without force. If the approacher is denied friendly contact it will often get very distraught until such contact is attained, even if only briefly. Reconciliation can also involve grunting, hugging and grooming, although hugging is more frequently seen in consolation interactions between the attacked animal and a third party. Sometimes, as in stump-tails, where reconciliations are related to status interactions, the dominant may try to impose a reconciliation that the other is not ready for, and escalation of the conflict may occur. In most cases, reconciliation is a very public event. Other animals have been watching for it, and may crowd around the pair vocalizing or teeth chattering. Stump-tails, chimpanzees and sometimes bonobos, who are reconciling will often vocalize themselves as if in excitement, or to

advertise the event. Maintenance of social bonds is important to the whole group. All are affected when relationships between any two members break down.

Some similarities in pattern of conflict management are reported for humans and primates. In particular, the tendency of the group to vent its spleen on a scape goat or out-group, even of another species, is a common one. In order to heal within group dissension, the whole group may turn on another group. de Waal mentions that this tendency is more pronounced and emphatic if those who are now the out-group once had close ties to those now aggressing towards them. He reports this for chimpanzees in Gombe (Goodall 1986) as well as for humans (Yanomamo).

Many young primates are very closely involved in adult dispute resolution, either as babies who are teeth chattered over, or juveniles watching their mothers and others. Rhesus mothers intervene on behalf of their offspring, while stump-tails usually leave them alone to work out their own social networks. As a result stump-tail young are much better than rhesus at resolving social tensions. Bonobo young are active participants in developing their own social bonds, even though under the watchful eye of their mothers. Juvenile primates are frequently attracted to social reconciliation. In fact they often get right underfoot in both the conflict stage, and its resolution. Many of the pictures in the book portray adults in the midst of agonistic or reconciliatory activities, with young animals right between them. The whole process of learning this behaviour is not part of de Waal's discussion, although it would make a fascinating future study.

## **Critique**

There are areas in which this book could have been improved. Certain terms are rather loosely used, such as aggression and reconciliation. Criteria were suggested for scoring aggressive encounters in the macaques, but it was not clear if the same criteria had been used for chimpanzees or bonobos. Also it is evident from the text that many other types of behaviour can be classified as aggression. Reconciliation, as the key feature of the book, could have been more explicitly defined, particularly from a cross-species perspective. If the idea of the book was to discuss humans as another species of primate, the definitions should have extended to human types of behaviours as well. The closest de Waal came to a general definition of reconciliation was to call it conflict resolution. Therefore a series of definitions for these important terms, as well as for others such as violence \* peacemaking and sexual behaviour, applicable across a wide range of primate species would have been useful.

There is an additional problem with the small number of species used as a foundation for this discussion. I agree that four species were probably sufficient to deal with in detail, but a short additional chapter, even quoting material taken from other studies, would have strengthened the argument that reconciliation is a pan primate phenomenon. Particularly useful in this respect would have been any data he could gather about New World monkeys, or prosimian. Also of particular interest would have been material on primates with different types of social structure, rather than those from multi-male, multi-female troops. What is the nature of reconciliation in the pair bonded primates? How do males in single male multi-female groups manage the restoration and maintenance of their social bonds? Information on these types of social groups would be very useful for comparing different patterns of human group organization.

The above comment is also related to some extent to de Waal's decision to study species in the captive condition. Human beings do have some flexibility that captive primates do not, and yet he did not mention what aspects of the reconciliation pattern might be affected by this factor. Given that he had valid arguments for conducting this study on captives, it still would have been useful if he had mentioned what some of the effects this constraint might have had on his data.

Since reconciliation is a particularly social activity, is performed in public, and in some cases affects the well-being of the entire group, some mention of the other social factors implicated would have contributed to this discussion. Here, I am referring to the functional aspects of reconciliation, rather than its evolutionary importance. Reconciliations are necessary to maintain group cohesiveness, to allow the functioning of particular roles such as control animal, and to reduce levels of internal dissention in the group.

He discusses individual pleasure in the case of sexual implication among the stump-tails as a motivation for reconciliation, but does not examine underlying rationales for the behaviour in a coherent cross-species content. Yet he does state, and demonstrate with examples from chimpanzees, that there appears to be a marked psychological need to resolve individual conflicts in primates as well as humans. Some discussion of this from a cross-specific perspective would have been a welcome addition to the book.

Another feature, which I felt was a very interesting conclusion in the primate data and was not really discussed for humans, was the different circumstances in which reconciliations occurred in males and females. As a matter of fact, it seemed that chimpanzees and rhesus males were more similar in their use of reconciliation than were either of them to the females of their own species. The establishment of kin bonds, and the importance of maintaining them seemed to be paramount to the females, while males are reported to use reconciliation to reestablish damaged social relationships advantageous to them. If this pattern holds true for humans, the implications are very substantial for situations such as marital conflict, where the underlying reasons for desiring reconciliation are a very important factor. One chapter in the book does refer to the cultural differences in human populations. Here the influential factor is the nature of conflict resolution, and the level of skill fostered by particular culture patterns. In most cases humans utilize ritual behaviour to help in the reconciliation process, ranging from shedding the blood of a sacrificial chicken to going to court. In some cultures people are expected to cope with conflicts efficiently and personally, while in other such as the Americans (from de Waal's perspective) conflict resolution skills appear to be weakly developed. Thus, in humans a wide range of reasons for, and patterns of conciliatory behaviour occur, while in primates different species may show more similarities, than do the males and females of one species. Obviously there is a wide range of potential here, but other than attributing much of human behaviour to cultural variables, de Waal does little to address this. These remarks are not intended to suggest that I perceive a difficulty in treating human and primate conflict management behaviours as homologous, because the evidence seems to indicate that they are. The situation in which conflict occurs in social groups are very similar, the nature of reconciliation behaviour is very similar (friendly bodily contest), and the social functions that are served by such behaviours are similar also.

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