HUMAN EVOLUTION Vol. 5 - N. 1 (75-90) - 1990

Jo Liska

Associate Professor in Speech Communication and a Research Indiana University, Bloomington, IN, 47405, USA

Dominance-seeking strategies in primates: an evolutionary perspective

The thesis advanced in this paper is that there are basic social influence strategies and attendant principles that are characteristic of social primates. A model for analyzing and comparing social influence strategies in primates, with particular attention to dominance-seeking strategies, is advanced. The utility of the model is illustrated by reference to studies of social influence strategies in baboons, chimpanzees, and humans. Emphasis is placed on the role of communication as the vehicle for social competence. Speculation is offered about the importance of the evolution of symbolic communication in expanding the repertoire of dominance-seeking strategies in human primates.

Key words: Dominance, primate, and communication

Four principle kinds of behavior patterns, relevant to communication, may be said to inform the organization of animal societies... The second form of behavior relevant to social organization is based on dominance relations. Dominance refers to a variable condition according to which animals are ranked; the positions in the hierarchy may, under certain conditions, be interchanged. The establishment of a convention of precedents lends organized society a certain stability, counteracting the spacing effect caused by aggression, and facilitates patterns of communication by defining, with more or less precision, their social context (SEBEOK, 1972, p. 173).

Typically, dominance has been viewed as a means to an end. That is, those of higher rank, and thus more dominant, will have preferential access to limited resources such as food and consorts. Dominance ranks were thought to be relatively stable over time, gender-specific, and resulting largely from a combination of birth or kinship rank and physical prowess.

This view of dominance has recently been challenged. While birth or family rank may be an important influence on one's ability to obtain essential goals such as protection and food, recent research seems to point to the importance of developing social skills to further enhance one's survival by fulfilling other important needs, e.g., affiliation and friendship, self-esteem, power, and the ability to influence others.

There is a broad range of available and acceptable social strategies/tactics within any given species. That set of strategies and the norms or code of conduct for using them is undoubtedly learned by observation, imitation, trial and error, and subsequently modified and elaborated by experience. However, there may be basic strategies and principles that are characteristic of social primates. Indeed, these basic strategies and the principles on which they are based may be evident in other more distantly related social species. An examination of such strategies and attendant principles is the goal of this paper. First, I will attempt, at least to serve my present purposes, to clarify the concept of dominance and related outcomes such as power, control, and influence. Second, I will advance a

Paper presented at the XII Congress of the International Primatological Society, Brasilia, Brasil - 24-29 July, 1988.

ISSN 0393-9375

model for analyzing and comparing social strategy selection. Third, I will discuss dominance-seeking strategies and underlying principles by reference to studies of social influence strategies in baboons, chimpanzees, and humans.

Dominance and Social Relationships

BERNSTEIN (1981) wrote that

> For many theorists, dominance relationships have been accepted as constituting a universal principle of social organization, or at least a universal principle of primate social organization influencing all social relationships... (p. 425).

He notes, however, that the

> ...literature on dominance relationships and their measure in primates has indicated that investigators are still far from a consensus on how to define and measure dominance (p. 426).

Dominance is generally measured, and thus defined, by criterion measures based on outcome, e.g., peck or rank order, latency access to incentives, or in terms of preferential access to food, consorts, and sleeping areas. BERNSTEIN (1981) essentially defines dominance as the win/loss record of either spontaneous or competitive encounters in which the win/loss pattern is predictive of the next outcome. Moreover, dominance is also thought to produce, or at least be highly correlated with, social power and influence. However, when dominance is defined in terms of a hierarchy, this relationship appears tenuous. DE WAAL (1982) and STRUM (1987) find that dominance, in terms of rank order in a hierarchy, is not always related to individual influence. Age and experience may better predict one's ability to influence. Nor does it appear that the outcome of aggressive or agonistic encounters is a good predictor of influence or access to other limited resources. STRUM (1987) describes the consequences of consistently aggressive strategies used by Bo:

> Bo chose an aggressive path and seemed too determined to fight his way into the groups social life. Yet for all his aggressive dominance, he appeared to have achieved little. He was a high-ranking male, but he saw those of lower rank get what he desired: special resources, friends, estrous females or the meat from baboon kills. He was a social outcast, feared by all except perhaps David, and even he was ambivalent (p. 114).

Dominance, and related constructs such as power, influence, and control, are outcomes that are attained using various strategies/tactics. One may be dominant or have power and influence in some areas but not in others. Power or dominance may be vested or earned. Vested dominance may result from birth order, kinship, or be institutionalized and granted as the rights and privileges of a particular role, e.g., college professor, judge, or corporate president. Vested dominance may also result in physical power dependent upon the physical characteristics of the individual. Size, age, silverbacks, and shoulder hair mantles are all symptoms of physical power. Social dominance, power, and influence, on the other hand, are earned, and dependent upon social strategy selection and enactment abilities, empathic abilities, and the potential for affiliation and engagement of friendship. Expert power is the consequence of some special knowledge or skill. For example, some chimps may be better than others at building termite fishing poles. Thus, others may watch them more closely in order to benefit from their skill. If not, at least the offspring of those particularily skilled at termite fishing will benefit beyond others.

Clearly, then, dominance is not unidimensional. Dominance may be assessed on a number of dimensions such as aggressiveness, politeness or deference, effectiveness, acceptability/desirability, and so on. Moreover, dominance is not dichotomous but continuous. One possesses degrees of dominance and the extent of dominance may vary from situation to situation. Further, dominance is not a trait but is bound by relationships, contexts, and time. Thus, while some degree of dominance may result from one's birth order, kinship, or physical attributes, social and expert skills are also important. One's birth order may no longer be remembered by most members of the group, one's family may have died off, and one's age and physical condition may no longer reflect strength and vigor; yet, if one is socially skilled and wise, and if strong alliances and friendships have been maintained, one may continue to exert a strong influence over the lives of others in the group. A platitude I once encountered sums it up nicely: «Old age and treachery will triumph over youth and skill».

MITCHELL & MAPLE (1985) «hypothesize that dominance is a summary statement about an array of attributes that may be thought of as 'social skills' (p. 50).» They suggest a conceptualization of dominance that is dependent upon situational characteristics and individual social skills. Along those same lines. Rosenblum and SCHWARTZ (1983) suggest that «rather than cast out dominance with dominance hierarchies, we propose that dominance may be a more viable concept when recast in terms of social strategies (p. 337)».

Primate Social Perception: The GOALS/GRASP Model

The key mechanisms of dominance appear to be the ability to manipulate the behavior of others and the ability to affiliate and engage friendships and alliances (CAPITANIO, 1982). This requires considerable cognitive and social skill: one must be aware of self as distinct from others, aware of one's relationship to others, aware of relationships among others in the group, remember past interactions, plan future interactions based on short-term and long-term goals or needs, predict likely outcomes and the cost effectiveness of various alternative strategies, and then select accordingly. Further, one needs to be able to assess the needs/goals of other interactants and evaluate situational affordances and constraints. GOODY (1978) writes «In short, effective social living required anticipation of the actions of others, calculation of short- and long-term costs and gains, and close attention to signals about the consequences of one's own behavior (p. 1)».

A brief example may serve to illustrate the selection process. Thus far it has been suggested that the choice of strategy will depend in large part on the relative cost-benefit ratio of the strategy and on situational affordances and constraints. Thus, if the goal is obtaining a share of a fresh kill, one may review the available strategies for getting the owner of the kill to share and decide to go it alone, or instead, select a mutual friend to help persuade the owner of the kill to share. The latter strategy may be less appealing as it requires sharing the spoils of the joint effort, and thus constitutes a smaller reward; consequently, an independent strategy may be selected if the situation affords. However, the smaller short-term gain of the independently enacted strategy may be offset by long-term gains accrued in strengthening an alliance or friendship, and thus the potential to elicit future support. Further, others interested in the kill may also be plotting their course for obtaining a share. They may constitute situational constraints in that they may be better friends with or kin to the kill owner, or may have more and stronger friends in the vicinity. These and numerous other factors will influence strategy selection.

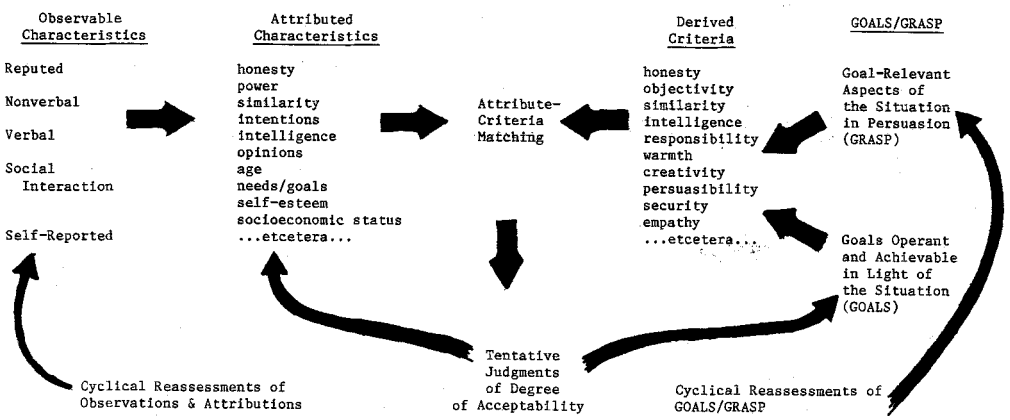

Figure 1

This process of strategy selection or the selection of acceptable others with whom to interact may be represented by the GOALS/GRASP Model developed by CRONKHITE & LISKA (CRONKHITE & LISKA, 1980; LISKA & CRONKHITE, 1982). (See *Figure 1).* We originally conceived of the model as a means for explaining and predicting choice of communicators or communication strategies among humans. However, with minor modification, that is the elimination of linguistic/verbal characteristics and strategies, the model also appears to have considerable applicability to nonhuman primates as well. Basically, we argued that individuals choose to interact with others who can facilitate goal attainment under specific circumstances and at a particular time. The characteristics of the individuals available, their style and demeanor, and strategies they have used in the past will influence strategies one chooses to use with them, as well the extent to which one chooses to associate with them. The goals one seeks to achieve, their immediacy, and situational constraints all interact to influence the selection process. For example, who one chooses for play may not be an acceptable choice when one needs reassurance, security, or protection. However, if one is having a crisis and needs immediate reassurance, one may have to accept less desirable options if others who are more desirable are unavailable or otherwise indisposed.

Specifically, an individual (A) observes certain characteristics of another (B), such as demeanor and style, physical attributes, nonverbal behaviors, and actions in previous interactions and relationships, and from those observations attributes certain inferred characteristics. Inferred characteristics include such attributes as honesty, trustworthiness, intelligence, attractiveness, need for affiliation, self-esteem, aggressiveness and so on. Prior to or simultaneously, criteria for desirable others are generated from the specific needs/goals salient to individual A in this situation and matched to the inferred characteristics. These derived criteria will be specific to goals, situations, and time. That is, certain personal characteristics will be more salient and important than others depending upon one's goal and on situational constraints. Aggression may be sought out in colleagues who will aid in territorial defense in times of threat, but be avoided when selecting a friend or playmate. Additionally, one's goals, and thus the criteria for acceptable others, may change due to factors such as age and experience. Physical attractiveness,for instance, may be less important as one gets older; instead, qualities such as dependability and cooperati-

veness may rank higher on the list of desirable criteria. Finally, the availability and utility of various strategies may also vary as a function of age, experience, and/or temporary conditions. Certainly, physical aggression is a risky choice of strategies for a sick, injured or old primate.

The acronym GOALS in the model stands for «goals operant and achievable in light of the situation» and GRASP refers to «goal relevant aspects of the situation». Some goals can be achieved in some situations and not others. Additionally, while some situational characteristics will be relevant to goal attainment, others will not. Those characteristics that are relevant will define the situation. For example, intervention by a third party is limited to those times when one's kin, friends or consorts are in the vicinity. A less obvious example is offered by DE WAAL (1982). He writes of a coalition formed between two males who cooperated to dethrone a third. Apparently, neither member of the coalition could accomplish the task alone and, therefore, cooperation was required.

The goodness of fit between the derived criteria and attributed characteristics is an index of the degree of acceptability of any given individual and/or strategy in a particular situation. The result is an evaluation of the other's (B's) potential as a friend, ally, consort, or leader and so on, as well as an assessment of the types of strategies most likely to be appropriate and effective.

At this point, several cautionary remarks are necessary. At first glance, the selection process I have just described appears rational and explicit. A closer examination may dispel this illusion. Typically, the process operates at a low level of awareness (tacitly) and evaluations and decisions of the sort previously described are frequently made rather automatically. That is, humans, for example, generally find it difficult to explicitly state their goals, identify situational affordances and constraints, and/or name the criteria they maintain. They simply ACT AS IF this selection process or one similar to it is operating. Moreover, the process may be employed rationally or somewhat less than rationally depending upon the individuals involved, their preferences, biases, fears, and psychological and emotional states, and the importance of the goals in question. In fact, since multiple goals may be sought simultaneously, it is likely that they are held at various levels of awareness, and some of them may be contradictory to others. Further, as I have already suggested, factors such as age, experience, and familarity will affect the process and resulting outcome. Consequently, the selection process is fraught with pitfalls of various sorts and may result in decisions that are something less than rational, appropriate, effective, and so forth.

It is also important to note that individual B may be engaged in a similar and concurrent process of evaluation of A. Finally, the linearity of the process is more apparent than real. One may enter the model at any point and simultaneous evaluation of a number of individuals or strategies may be in progress.

Dominance-Seeking Strategies/Tactics

In social species, social competence has considerable survival value because one is dependent upon others for meeting such basic needs as food, water, protection, and security. Sociability also produces needs/goals beyond those necessary to physical survival and propagation. Maslow has identified a number of needs that appear to result from sociality including self-esteem, affiliation, friendship, love, and self-actualization. These goals appear quite unthinkable if one is not a member of an interdependent social group. Lacking the skills necessary to survive at birth, primates are dependent upon the survival

skills of mother and kin, who, in turn, are dependent upon the survival skills of other members of the group. Essentially, then, those who are socially competent greatly enhance their chances of survival and the survival of their offspring because they are more likely to achieve dominance, power, and influence, and thus effect compliance and cooperation from others. Such interdependency exerts considerable pressure on intragroup and interpersonal relations. The result is development of strategies for negotiating with others.

Social competence, as it relates to influence, power, and compliance in humans, has captured the attention of researchers in various disciplines. A number of researchers have recently attempted to identify strategies and tactics available to effect compliance. Generally, these investigations elicit human subjects' responses to a variety of strategies and tactics in terms of their projected effectiveness or likelihood of use. Further, some investigations have focused on the effects of an array of demographic, personality, and situational characteristics on the selection of strategies.

Research on social competence, as it relates to strategies of social dominance and influence, will provide the foundation for the comparative analysis that follows. As a prelude to this analysis, I will define some terms, introduce the concept of dominance-seeking strategies, and briefly discuss limitations of the application of this research on humans to nonhuman primate species.

While the terms «strategy» and «tactic» are frequently used interchangeably, they are not synonymous. Strategy is the broader term and a strategy may be composed of a variety of tactics. Thus, for example, aggression may be characterized as a strategy. Tactics to enact an aggressive strategy may include hitting, biting, banging kerosene cans together, screaming, using weapons, or in the case of humans, verbal assaults. As I am using the terms, then, strategies and tactics are hierarchically related.

The ability to get antoher to do one's bidding is a straightforward and frequently used definition of compliance. Like dominance, influence, power, and control, compliance is best viewed as an outcome or goal. Compliance is unlikely to be sought by a solitary species; it is a goal specific to a social species. Further, compliance is highly related to power, influence, dominance, and control. Those who are dominant, powerful, and influential are undoubtedly more likely to be able to exert control over others and effect their compliance. Again, the relationship is probably best conceived as hierarchical.

I have elected to adopt the term «dominance-seeking» strategies for two reasons. First, problems of definition and measurement notwithstanding, the term «dominance» is common to a variety of disciplines and applied to a wide array of species. Second, at least from the standpoint of earned dominance based on relational or social skill, it appears to be the most parsimonious. That is, attaining some degree of dominance appears to be fundamental to achieving other outcomes such as control, influence, power, and compliance.

Research on dominance-seeking strategies in humans is largely based on analyses of linguistic/verbal strategies. This, of course, should come as no surprise, since humans are endowed with symbolic abilities and readily make use of them. Certainly, analyses of nonverbal dominance-seeking strategies are available; however, their numbers pale in comparison to those that focus on verbal strategies. Consequently, some strategies and component tactics are simply not available to non-linguistic species, since they depend on symbols for their enactment. In fact, this is an important issue and it will be addressed later in this paper. However, a number of strategies can be enacted by means of non-symbolic signs and it is those strategies that will constitute the bulk of this analysis.

Several researchers have attempted to identify strategy dimensions underlying various dominance-seeking tactics. While underlying dimensions vary as a consequence of the

specific tactics presented to subjects, the scales on which those tactics are rated, and the type of statistical analyses employed, commonalties in the results are apparent. In a recent study conducted by NG, LISKA, & CRONKHITE (1988), 350 subjects were asked to rate the social acceptability of 100 compliance tactics. In addition to obtaining mean ratings of the social acceptability of each tactic, which results will be discussed later, factor analysis employing an oblique rotation was performed to determine the underlying structure. A two-factor solution resulted, with the first factor accounting for 21.5% of the variance and the second factor accounting for 11.2% of the variance. As indicated by the degree of relationship between the two factors, .08640, they are essentially orthogonal or independent. Factors were named after examining those items that defined each factor. Items that had a loading of at least .50 met criterion and were considered definitive of that factor.

The first factor is a «personal affective consequences» dimension and is characterized by tactics such as use of silence, third party intervention, ordering or demanding compliance, appearing helpless, withdrawing affection, pouting or crying, attempting to make the other feel guilty, and so on. It is apparent that the tactics that define this dimension enumerate the consequences of «how I, you, and others will feel about you if you do/do not comply». Thus, the tactics included in this first factor appear to be appeals to one's self-esteem, self-worth, and/or self-concept.

The second factor is an «instrumental consequences» dimension and is characterized by such tactics as negotiation, straightforward requests for compliance, providing reasons, explanations and logical argument, and bargaining. The tactics included in this factor constitute appeals to reasonableness and enumerate consequences other than personal, self-esteem, or psycho-social ones.

As I mentioned earlier, these factors or dimensions appear consistent with the results of other compliance research. In two studies, ROLOFF & BARNICOTT (1978; 1979) identified three dimensions underlying compliance. As we interpret their results, it appears that the distinction among the three factors is best made on the basis of the nature of the consequences. In the order in which they accounted for the variance they are: (1) consequences to self-concept; (2) consequences that will occur because of the nature of things; and (3) threats and promises of consequences to be administered by the compliance-seeker. The dimension identified as naturally occuring consequences is similar to our instrumental consequences dimension. We did not observe any difference between threats and promises and natural consequences.

Based on these findings, several tentative comparisons to nonhuman primate dominance-seeking strategies can be advanced. Several of the tactics that load on the personal affective consequences dimension can be combined into an «affiliative» strategy in that these tactics specify third party intervention. ROSENBLUM & SCHWARTZ (1983, p. 337) write:

> A female baboon, for example, who might well be dominated by a larger female, may defeat her otherwise higher ranking opponent by a subtle recruitment of the protection of her harem leader (KUMMER 1968). Strategy, not strata, often determines the outcome of agonistic encounter in primate social groups. In the example just given, 'it is not who you are but who you know that counts'--a dictum that appears to have considerable generality across primate taxa (EBERHART, KEVERNE & MILLER, 1980; GOODALL, BANDORA, BERGMANN, BUSSE, MATAMA, MPONGO, PIERCE & RISS, 1979; IRONS, 1980; SADE, 1967)».

DATTA (1983) provides additional support for the use of affiliative strategies:

> Individuals intervene in the disputes of others with a variety of consequences for themselves, the individuals they support and those they intervene against. Interference appears, therefore, to have a variety of 'functions', ranging from the protection of relatives being attacked by dominants to the maintenance of alliances and perpetuation of the status quo (p. 297).

DE WAAL (1982) reports a cooperative effort between Luit and Nikkie to dethrone Yeroen. The result was that «The trio formed, as it were, a 'political arena' or a 'center of power' (p. 120)». He goes on to write that «Luit's successful take-over, which came about thanks in no small way to Nikkie, was accompanied by a change in Nikkie's attitude toward the ex-leader (p. 121)». Apparently, Yeroen then acted in a submissive or deferent manner toward Nikkie and, in doing so, «manoeuvred himself into the key position in the triangle (p. 123)».

STRUM (1987) repeatedly emphasizes the import of affiliative strategies in achieving one's goals. She reports a series of tactics used by male transfers who were attempting to gain entrance into pumphouse. Initially, the «foreign» male sat quietly on the fringe of the group, observing the group's activities and interpersonal relations among members of the group. In the course of several days of observing, one male transfer, Ray, had apparently selected one group member with whom he would attempt to initiate contact. He selected Naomi, an apparent loner or «outcast» in Strum's terms, and persistently, yet subtly, followed her until she allowed him to make contact. Strum reports that «... he finessed his way into her affections rather than forcing her to submit, which he could have easily done by virtue of his larger size and strength (p. 31)».

RAY'S next target for affiliation was Peggy, the highest-ranking female of the troop and one apparently endowed with considerable social skill. Consequently she had important and influential friends in the troop. Slowly and systematically Ray worked his way into the core of the group by developing affiliations with the females who constituted the stable core of pumphouse. While surprised by the strategies and tactics used to gain entrance to pumphouse, since Strum had expected the use of aggressive tactics, she saw the strategy enacted by Ray repeated by other male transfers into pumphouse.

Affiliation affords the use of another tactic, the ability to call in past favours. De Waal found that chimpanzees regularly exchange social favours and support those who provide them with social support and security. Instances of social exchange are also common among baboons, at least up to a point. Strum observes that Peggy and Constance were friends who supported one another until a situation involving a family member arose. Then both would side with their own relatives.

Clearly social exchanges such as this occur among humans and, in fact, one important theory of interpersonal relationships among humans is called «social exchange theory». Among unrelated members of a group, social exchange is probably dependent upon reciprocation of favours, whereas, among relatives, support for and defense of one another is a given. Strum writes that «While children EXPECT to be cared for and protected regardless of whether they return the favor, friends expect favours in return for favours (p. 49)».

Strum emphasizes the importance of what she learned from the baboons' use of affiliative tactics for her encounters with the shamba owners at Kekopey:

> I could have saved myself much time and grief if I had applied my baboon insights to these human problems from the start. If you want to forge a good social relationship, one that works and endures, it must be built on reciprocity. But first you must gain the trust of your partner. Whether you are a new male baboon or a female scientist, you must demonstrate by action and gesture that you are generous and reliable and that you will make a good social ally. It is only then that you can count on your partner's goodwill and can help each other out, not necessarily in identical ways but in complementary ones (p. 200).

Using the power of one's position or pulling rank is also common among baboons and chimpanzees, but the tactics for enacting this strategy vary considerably. Tactics such as demanding or ordering compliance, or acting irritated until compliance is granted are more

aggressive means and are probably more likely to be used somewhat selectively in order to avoid sacrificing personal relationships such as friendship. This is undoubtedly the case if the individual is to maintain some degree of dominance, influence, and so on. An individual who persistently pulls rank by aggressive means may effect pronounced short-term gains, but at considerable expense in the long run. Moreover, as was noted in the case of Bo, dominance achieved by aggressive means may be unrelated to potential and actual influence and may, in fact, result in diminished access to resources.

Peggy, the high-ranking female in the pumphouse gang, typifies the use of less aggressive tactics when using her rank to produce compliance. Apparently, her characteristic tactic is to move in close and wait. By Strum's report, it was a most effective approach.

Pulling rank may work in the reverse. That is, low ranking individuals may use tactics such as appearing helpless, and thus giving the impression that one is in desperate need of compliance from another, by enacting a series of submissive gestures such as presenting. The result may be that compliance is granted. At least, such tactics appear to work reasonably well for stranded motorists, human children, and baboon youngsters. For example, the pretense of helplessness worked very well for Olive, who was being harrassed by Tina's son, Toby. Toby had been «strutting his stuff», especially at Olive, who later in the day found herself in the vicinity of Toby and her older brother Sean, who was larger and dominant to Toby. Strum reports that Olive «looked intensely at Toby, then at her older brother, then back again at Toby. Suddenly she screamed bloody murder. Simultaneously, the two males looked up. Her brother's actions indicated that only one conclusion was possible: Toby was the culprit and Olive was the victim, and Sean was not going to stand for it (p. 134)». Incidentally, Toby lost.

Withdrawing affection and use of the silent treatment appear to be highly related. Strum reports that females often ignore the advances and threats of juveniles who eventually give up such nonsense, at least temporarily. In human groups, deviant members will initially receive a lot of attention as the other group members attempt to bring the irascible or uncooperative member in line with group decisions and norms. If these tactics are unsuccessful, however, the disruptive member will eventually be ignored and ultimately ostracized. Nonhuman primates appear to operate similarily.

Ignoring one who has refused to cooperate, and thus indicating a withdrawal of approval or affection, may bring the individual around to more reasonable ways of behaving. These tactics seem to rest on the principle that, for social animals, being ignored and unloved is simply intolerable. Social isolation, loneliness, and alienation have profound and negative effects on one's physical health and psychological well-being. Certainly, the results of Harlow's famous experiments on social isolation provide compelling evidence for the power of the tactics of isolation and withdrawal of approval and affection. While such tactics may not be aggressive in the sense we generally use the term, they are, metaphorically speaking, undoubtedly the most violent of all possible assaults on one's self-esteem.

The remaining tactics on the personal affective dimension appear to increasingly depend upon symbolic capabilities, because one must be able to represent other possible worlds (counterfactuals). Signs that are symptoms and semblences, as I have discussed elsewhere (LISKA 1986; 1987), can convey warnings and threats, withdrawal of affection, willingness to engage in friendship, and so on. However, tactics such as specifying that one will feel guilty or ashamed if they do not comply, pointing out that noncompliance is inconsiderate and selfish, and explaining that compliance will result in others thinking well of them while noncompliance will result in others thinking less of them, seem to be dependent upon the use of signs that are symbolic. Representing these tactics sympomati-

cally or «acting them out» in the form of semblences appears to be an improbable, if not impossible, task.

Generally, the tactics that define the second factor, instrumental consequences, also appear to be dependent upon symbolic abilities. Tactics such as providing reasons and explanations, arguing logically, making suggestions, and, to some extent, bargaining and negotiation, necessitate symbolic representations. Other tactics that load on this factor appear to be readily available to nonhuman primates however. Simply asking for compliance may be enacted by moving in close and watching or reaching out a hand in a begging gesture.

In chimpanzees and baboons, warnings or threats that noncompliance will produce negative instrumental consequences generally take the form of ritualized, non-contact displays (COE & LEVIN, 1980). An intense and direct gaze, open-mouth threat, piloerection, ground slapping, and/or brandishing a stick or banging kerosene cases together may be sufficient; if not, threats and warnings may give way to contact aggression. An individual who persists in noncompliance may at first be ignored, then warned or threatened, and, ultimately, attacked. Escalations such as this were reported by GOODALL (1986) and DE WAAL (1982). Generally, aggressive encounters are followed by a series of conciliatory gestures such as embraces, kisses, and mutual grooming.

The tactics «be straightforward» and «be tactful» seem to specify aspects of demeanor rather than actual compliance tactics. They also seem relevant to simple requests for compliance. One can be straightforward and attempt to grab what one wants, beg, or employ a more subtle and tactful approach and simply move in close and wait. Strum describes an incident in which Ray rushed at her, slapping the ground. He was not, she soon discovered, threatening her but appeared to be soliciting her assistance. Certainly, Ray's attempt to solicit Strum's assistance is an example of a straightforward request for compliance.

In nonhuman primates, bargaining for compliance is probably best exemplified by the exchange of social favors discussed earlier, with one important difference. The example mentioned earlier focused on the exchange of favours that served psycho-social consequences; whereas, in this instance, the consequences of the bargain are instrumental. When I was a graduate student, I shared a house with a woman who hated to clean bathrooms. Since I found that task far less unpleasant than cooking, which she sometimes even enjoyed, we negotiated the arrangement that she cooked and I cleaned the bath. It is certainly the case that such tasks bore little if any relationship to either of our self-concepts; they were simply chores necessary to everyday life.

Social acceptability of dominance-seeking strategies

Based on observations of regular patterns of interaction within species of primate, one can only conclude that some strategies and tactics are more socially acceptable than others. My goal in this section is to compare the social acceptability of dominance-seeking strategies of aggression and politeness or deference in human and nonhuman primate societies.

Rather than rely on identification of the social acceptability of strategies and tactics based on the intuitions of the investigators, we asked human subjects to rate the social acceptability of 100 compliance tactics. On a zero to nine point scale, we considered any tactics with a mean rating of less than two as extremely prosocial and tactics receiving a

mean rating of greater than eight as extremely antisocial. Thirteen tactics had mean ratings of less than two. Those tactics are largely instrumental and include the use of logic, reason, negotiation, tact and politeness.

Twelve tactics had a mean rating beyond eight and we considered those extremely antisocial. Typically, these tactics are aggressive: «Stamp my feet and scream», «punish them until they comply», «throw things», «hit them», «threaten to harm things or people they value», and «take hostages».

A review of the literature on dominance-seeking strategies in nonhuman primates suggests some interesting similarities as well as differences. According to our subjects, taking hostages is the most antisocial tactic; yet, as one of my graduate students who is from Saudi Arabia pointed out, it is much less so in cultures with which he is familiar. In fact, he suggested perceptual differences in social acceptability based on culture for a number of the tactics. Certainly, taking hostages appears with increasing frequency in some parts of the world and, while some of the differences may be attributable to culture, individual differences may be relevant as well. Further, such activities may be more acceptable generally when the target is not a member of one's own group or culture. The savage attacks on splinter and neighboring troops described by GOODALL (1986) are rarely reported among members of the same troop. According to STRUM (1987), however, taking in-group infants as hostages is common among baboons and appears to be an acceptable practice.

GOODALL (1986) writes that «Like the majority of animals, chimpanzees solve more disputes by threat than by actual fighting (p. 314)». Certainly, contact aggression, while effective in the short-term, is less acceptable than non-contact, ritualized displays, and also less likely to be used as a consistent strategy. If it is, it is at considerable cost and may result in physical harm and loss of alliances, friends, and consorts. Even when an encounter results in contact aggression, at least among members of the same group, the parties involved spend considerable time afterwards engaged in conciliatory activities.

Moderately prosocial tactics include bargaining, flattery, third party intervention, hints, appeals to ego, and gestures such as putting one's arms around the other. These tactics are commonly used among nonhuman primates and appear to be socially acceptable as well. Presenting, hugging or embracing, and patting are considered signs of submission but also serve a politeness or flattery function. This was clearly illustrated by Yeroen who regained lost power by engaging in such gestures with Nikkie. Flattery will, apparently, get you everywhere.

Various forms of presenting, as an indication of politeness or deference, are common in human cultures. Asian cultures, for example, are especially sensitive to space and height and it is considered bad manners, a violation of rank, and possibly even threatening, to loom over or above someone. In Indonesia, if the head of the household is seated on the floor, others sit likewise. In Sardwak, one is expected to bend over slightly when moving through seated groups (HATT, 1982). Based on ethnographies of interaction strategies across human cultures, GOODY (1978) concludes that politeness or deference is a universal strategy designed to maximize the gains of one while minimizing cost to the other. She writes:

> ... the basic constraints on effective interaction appear to be essentially the same across cultures and languages; everywhere a person must secure the cooperation of his interlocutor if he is to accomplish his goals. To secure cooperation he must avoid antagonizing his hearer, and the same sorts of acts are perceived as threatening in Mexico, Wales and south India. If at this level the problem posed by interaction is everywhere the same, it is hardly surprising that the same devices have been developed to resolve it, that is to avoid giving the impression that the speaker intends to do these threatening acts (p. 5).

Based on the data collected thus far, it appears that Goody's conclusion could be extended to nonhuman primates as well. Certainly the observations reported about chimpanzees and baboons seems to suggest that, fundamentally, politeness and deference are the optimal strategies for securing cooperation with minimal distress to all involved. This may explain why strategies of politeness and sanctions against aggression seem to prevail in many primate species. When that fades, the group, society, or culture is likely to disintegrate.

Discerning the social acceptability or desirability of dominance-seeking strategies is one way to illuminate social norms. By examining responses to strategies/tactics that vary in, for example, aggressiveness, submissiveness, or deference, a tentative typology of social acceptability can be devised. Several issues merit concern however. First, the extent to which a particular strategy or tactic is desirable or acceptable is not necessarily reflected in its effectiveness. Contact aggression may be, for a while at any rate, quite effective but may not be socially acceptable nor desirable. One who characteristically resorts to aggressive strategies may eventually find themselves socially isolated or ostracized. Second, the norms for strategy selection and enactment vary across groups, cultures, and time. Third, goals and situational constraints, as I have already proposed, will profoundly affect the choice of strategy. Sometimes norms are deliberately violated for purposes such as flattery or insult. Certainly frustration, emotional arousal, or festering wounds may result in aggressive responses. Threats to one's self-esteem, especially if enacted via insult, humiliation, or outright coercion, are also likely to result in hostility and the subsequent escalation of aggression. Moreover, the nature of the relationship will dictate choice of strategy. Threats of or outright aggression may be deliberately used with those who one will not encounter again in the future. At least, human subjects say they would be more willing to use socially unacceptable tactics in those instances. Fourth, individual differences play an important role in strategy selection. Some individuals are simple more easily aroused and inclined toward aggressive acts, regardless of the circumstances in which they find themselves. Finally, unlike those interested in human behavior who have the advantage of being able to ask subjects about their perceptions, researchers interested in dimensions of dominance-seeking strategies and tactics in nonhuman primates must infer the presence of those dimensions based on observation. This is not to suggest that human subjects are aware of their perceptions, intentions, attitudes, and so forth; indeed, there is a substantial body of literature that indicates that awareness of one's own cognitive and social processing is questionable at best. Additionally, understanding dimensions underlying dominance-seeking in humans would benefit considerably from systematic observation of the type used by primatologists. Judgments of experts will at least provide some insights into underlying dimensions based on criteria such as when, with whom, under what conditions, and with what effects various dominance-seeking tactics are used. Further, experiments like those recently conducted at the Wisconsin Regional Primate Research Center seem especially promising. Briefly, they are using video tapes showing rhesus' reaction to various entities such as snakes and flowers and then assessing the impact of those reactions on the monkeys who viewed those tapes. This approach has interesting implications for various kinds of research on primate social behavior.

Empathy: the foundation of social behavior

JOLLY (1966) and later Humphrey (1976) suggested that consciouness developed in the course of primate evolution as a consequence of group living, which necessitated

understanding the thoughts, feelings, goals, and intentions of other members of the group. Similar to G.A. KELLY'S (1955) notion of the «lay scientist», Humphrey suggested that primates act as «natural psychologists» in that they maintain internal models or representations of others, advance tentative hypotheses about the likely behaviors, feelings, thoughts, and goals of others, and subsequently test those hypotheses in social encounters. Empathy, generally characterized as the ability to represent, model and identify with the emotional and psychological states of another, is thought to be the basis of social perception and communication.

More specifically, empathy may be defined as the ability to understand another's behavior based on one's understanding of one's own behavior. That is, empathy is the tendency of an organism to respond to the species-specific behaviors of another similar organism. The inclination to empathize with other members of the species is clearly dependent upon the co-occurring evolution of the sending and receiving systems specific to that species. Thus, for example, social insects such as bees, termites, and ants have evolved sign systems that enable them to act in such a coordinated fashion as to appear to have a «group mind».

An another level, empathy operates so as to enable members of one species to exploit members of other species. Certainly, this ability is well demonstrated by hunters and trackers whose livelihood depends upon their ability to «read» the behaviors of their prey. Animal trainers and animal behaviorists spend long hours studying the behavior of other species in order to better understand and even empathize with those species. While these skills may appear far advanced from those of the social insects, such is apparently not the case. Consider Thomas' description of one species of predator ants:

> Columns of ants can smell out the differences between themselves and other ants on their trails. The ants of one species, proceeding jerkily across a path, leave trails that can be followed by their own relatives but not by others. Certain ants, predators, have taken unfair advantage of the system: they are born with an ability to sense the trails of the species they habitually take for slaves, follow their victims to their nests, and release special odorants that throw them into disorganized panic (1974, p. 37-38).

Of course, there is a profound difference between the empathic abilities of human primates and social insects, and that difference results from the nature of the sending and receiving systems found in human primates from that found in social insects. Social insects are born with a «hardwired» program that enables them to operate at these two levels of empathy, but the limitations imposed by that program are severe. The sign systems are fixed, inflexible, not arbitrary, and impervious to short-term environmental changes. Human primates, and to some degree, nonhuman primates, on the other hand, are endowed with a program distinguished by its flexibility and generality. These characteristics of the sending and receiving systems of primates has substantially increased their capacity for within — and cross-species empathy.

The point is that empathy is not dicotomous: one (individual or species) does not have it or not, but has emphatic abilities in varying degrees. Thus, while social insects clearly have the rudiments of empathic ability, nonhuman and human primates demonstrate a considerable increase in the capacity for empathy with members of their own species and other species.

Writing about the capacity for empathy among humans, GOFFMAN (1956) characterizes the process of interpersonal and social perception as a process involving self-presentations and empathic interpretations of those self-presentations. Further, the process is dependent upon negotiation, mutual testing, and cooperative construction.

KENNETH BURKE (1950) defines communication as the means for identifying with others in order to become consubstantial, all of which is dependent upon empathy.

Consequently, empathy is necessary if one is to assess the desires, needs, goals, intentions, emotional and psychological states, and so on of others. Thus, it appears to be the foundation principle underlying social behavior as well as an evolutionary consequence of sociality.

Like other cognitive processes, empathy operates at varying levels of awareness from tacit to explicit. Thus, for example, one may immediately recognize, at a low level of awareness, the symptoms of illness or fear in another because one has experienced the same symptoms and thus identifies with them. Moreover, empathy operates at various levels, e.g., physiological, psychological, and social. Analysis of the empathic capacity of any given species may be best conceived as operating at these different levels along an evolutionary continuum.

That chimpanzees appear capable of empathy has been demonstrated by WOODRUFF & PREMACK (1979) in experiments with Sarah. According to their analysis, Sarah selected «good» or «bad» solutions to a problem another faced depending upon whether she liked or disliked the other. Additional support for empathic abilities is provided by the observations of captive animals who cleaned others' wounds and, in one case, removed a foreign object from the eye of a fellow chimpanzee who was clearly suffering discomfort.

GOODALL (1986) reports, on the basis of field observations, several instances of behavior suggestive of empathy. The relationship of Humprey with Old Mr. McGregor is one excellent example. Humphrey not only defended his friend against the higher-ranking and powerful Goliath, he also stayed with his friend during the last two weeks of McGregor's life. Goodall also reports that Little Bee regularly took food to her ill mother.

Selection of dominance-seeking strategies/tactics is certainly dependent upon empathic abilities. The two key mechanisms of dominance mentioned earlier in this paper, i.e., the ability to manipulate the behavior of others and the ability to engage in friendship and develop alliances, appear to rest largely on the empathic abilities of the perceiver.

The personal affective consequences specified in the first factor (discussed earlier) may be based on empathy that developed early in our evolutionary history as primates and was acquired early in ontogenetic development. Support may be found in the literature on the development of social perception and communication competence in humans. For example, the research on role- and perspective-taking indicates a clear shift from an egocentric «I-now» perspective in which self is of central importance, to increasing concern with and ability to adapt to the perspective of others. That is, it appears that development of a schema or internal representation of self is necessary to the later construction of schemata for others. Certainly a similar developmental process is evident in the perception of objects. CRONKHITE (1984) writes that

> Only by construction of schemata for identifying objects, tracking them, and extrapolating the trajectories do children ever move from egocentric autism, wherein all the world is self, to veridical perception of a world of objects independent of self (p. 70).

While people are generally not considered objects and the distinctions between people and objects are important, development of schemata for representing them may bear important similarities.

As some of this research uses compliance tactics as the criterion measure for role — or perspective — taking, the research seems especially relevant to my purposes here. Generally, the trend suggested by this research is a movement away from reliance on tactics such as outright grabbing for a desired object, demands, temper tantrums, and such

physical means a hitting, pushing, and biting, to tactics that reflect increasing amounts of social sensitivity and recognition of the needs and feelings of others. Thus, tactics such as asking or requesting, sitting close and waiting, or offers of cooperative play and sharing become increasingly evident.

The data on which empathy is based takes the form of signs and those signs may be arranged on a continuum of arbitrariness or symbolicity. Clearly, the more data available to the perceiver, the more informed the perceiver will be, thus increasing the potential for empathy. The advent of symbolic capabilities on the part of early humans exponentially expanded the amount of data available about the needs, goals, feelings, and so on of others. Moreover, the number of possible strategies for achieving dominance and influence and effecting compliance increased substantially with the advent of representations in the form of semblances, e.g., acting out a story illustrating personal affective or instrumental consequences, and with the development of symbols with which one could represent other possible worlds. As a consequence, one could, for example, characterize the guilt that would result from noncompliance, appeal to one's sense of «goodness», and provide reasons and explanations in support of one's need for compliance. These and similar tactics depend on increasing arbitrary and abstract ways to represent the needs, goals, thoughts, and feelings of others. Cronkhite (1976) provides an excellent summary:

> If one is better able to empathize with another, they are better able to communicate; if they are better able to communicate, they are better able to empathize (p. 80).

Conclusion

> ...the great apes display precursors of, or even many of the same kinds of dominance behaviors, that humans display. The subtlety and sophistication of their power and dominance behaviors are such that they cannot be explained by alluding to one simplistic principle of formal linear dominance. In fact, even prosimian and monkey dominance and power probably also are not explained by such simplistic notions. (MITCHELL & MAPLE, 1985, p. 63).

The point of this paper has been to provide a theoretical perspective for conducting comparative analyses of social competence, with particular attention to dominance-seeking strategies in primates. I have suggested that the vehicle for competence is communication, which is dependent upon empathy, and that empathy and communication are both facilitators and consequences of the social nature of primates. Further, I have emphasized the importance of symbolic capabilities in advancing the development of empathy and expanding the repertoire of dominance-seeking strategies/tactics in human primates. SHIVELY (1985, p. 83) summarizes the issue thusly:

> ...the research trend is toward an emphasis on social skill as an important mechanism of fitness. As humans also live in complex societies, social skill is considered a strong influence in our evolution. Socially skillful individuals accrue social power, become predominant members of the community, and are in a position to influence community action. Not only could such individuals have a greater than average impact on their community during their own lifetime, they may continue that influence in subsequent generations by contributing a disproportionate number of genes to the gene pool. The study of the acquisition and maintenance of social power in complex nonhuman societies, and its evolutionary significance, may serve to better illuminate the proximate mechanisms involved in the evolutionary shaping of our own species.

---

* The results reported from the Ng, et al. (1988) study are available upon request.

References

BERNSTEIN I.S., 1981. *Dominance: the baby and the bathwater.* Behavioral and Brain Sciences, 4: 419-57.

BURKE K., 1950. *A rhetoric of motives.* Printice-Hall, Englewood Cliffa, N. J.

CAPITANIO J.P., 1982. *Early experience, behavior and organization in rhesus monkey social groups.* Unpublished doctoral dissertation, Unversity of California, Davis.

COE C.L. & LEVIN R.N., 1980. *Dominance assertion in male chimpanzees (pan troglodytes).* Aggressive Behavior, 6: 161-74.

CRONKHITE G., 1976. *Communication and Awareness.* Cummings Publishing Co., Menlo Park, CA.

CRONKHITE G. & LISKA J., 1980. *The judgment of communicant acceptability in the process of persuasion.* In: Persuasion: New directions in theory and research, ed. M. Roloff & G. Miller, Eds.: 101-39. Sage, Beverly Hills.

CRONKHITE G., 1984. *Perception and meaning.* In: Handbook of Rhetorical and communication theory. C. C. Arnold & J. W. Bowers, Eds.: 51-229. Allyn and Bacon, Inc., Boston.

DATTA S.B., 1983, *Patterns of agonistic interference.* In: Primate social relationships. R. A. Hinde, Ed.: 289-97. Sinauer Associates, Inc., Sunderland, Mass.

DE WAAL F.B.M. & HOCKSTRA J.A., 1980. *Contexts and predictability of aggression in chimpanzees.* Animal behaior, 28: 929-37.

DE WAAL R.B.M., 1982. *Chimpanzee politics: power and sex among apes.* Harper & Row, New York.

GOFFMAN I., 1956. *The presentation of self in everyday life.* Social Sciences Research center, Edinburgh.

GOODALL J., 1982. *Order without law.* J. Social Biol. Structure, 5: 353-60.

GOODALL J., 1986. *The chimpanzees of gombe: patterns of behavior.* Belknap Press of Harvard University Press, Cambridge, Mass.

GOODY E., ed., 1978. *Questions and politeness: strategies in social interaction.* Cambridge University Press, Cambridge.

HATT J., 1982. *The tropical traveller.* Pan Original, London.

HUMPHREY N.K., 1976. *The social function of intellect.* In: Growing points in ethology. P.P.G. Bateson & R. A. Hinde, Eds.: 303-17. Cambridge University Press, New York.

JOLLY A., 1966. *Lemur social behavior and primate intelligence.* Science, 153: 501-6.

KELLY G.A., 1955.*The psychology of personal constructs.* Norton, New York.

LISKA J. & CRONKHITE G., 1982. *The goals/grasp procedure for analyzing situations as an alternative to situational taxonomies in the prediction of strategy selection.* Paper presented at the Speech Communication Association Convention, Louisville, Kentucky.

LISKA J., 1986. *Symbols: the missing link?* In: Primate ontogeny, cognition and social behavior, Vol. 3. J. G. Else & P. C. Lee, Eds.: 169-78. Cabridge University Press, Cambridge.

LISKA J., 1987. *Variations in the arbitrariness of asl: An assessment of the symbolicity of simian signs.* Human Evolution, 2: 205-12.

MITCHELL G. & MAPLE T.L., 1985. *Dominance in nonhuman primates.* In: Power, dominance, and nonverbal behavior. S. L. Ellyson & J. F. Dovidio, eds.: 49-66. Springer-Verlag, New York.

NG. R., LISKA J. & CRONKHITE G., 1988. *A social acceptability scale for compliance-gaining strategies used to test relationships of sex, dogmatism, and situation to the social acceptability of strategy selection.* Unpublished manuscript, Research Center for Language and Semiotic Studies, Indiana University, Bloomington, IN.

ROLOFF M.E. & BARNICOTT E.F. JR., 1978. *The situational use of pro-and antisocial compliance-gaining strategies by high and low machiavellians.* In: Communication yearbook 2. B.D. Ruben, Ed. Transaction, New Brunswick.

ROLOFF M.E. & BARNICOTT E.F. JR., 1979. *The influence of dogmatism on the situational use of pro-and antisocial compliance-gaining strategies.* Southern Speech Communication Journal, 45: 37-45.

ROSENBLUM L.A. & SCHWARTZ G.G., 1983. *Dominance: strategy is the name of the game.* Behavioral and Brain Sciences, 4: 337-378.

SEBECK T.A., 1972. *Perspectives in Zoosemiotics.* Mouton, The Hague.

SHIVELY C., 1985. *The evolution of dominance hierarchies in non-human primate society.* In: Power, dominance, and nonverbal behavior. S. L. Ellyson & J. F. Dovidio, Eds.: 67-8. Springer-Verlag, New York.

STRUM S. 1987. *Almost human.* Random House, New York.

THOMAS L., 1974. *The lives of a cell: notes of a biology watcher.* Viking Penguin: New York.

WOODRUFF G. & PREMACK D., 1979. *Intentional communication in the chimpanzee: the development of deception.* Cognition, 7: 333-62.

Received: 20 Oct. 1988. Accepted: 10 May 1989.