

**The evolutionary development of
morality as an effect of dominance behavior
and conflict interference**

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Morality may be defined as the problem solving activities of a moral community, a primary group which uses a wide range of sanctions directly to reduce conflict, which also sanctions perceived causes of conflict, and defines and controls other deviances judged to be antisocial. So defined, morality is a precondition for law. In comparing human with non-human primates, conflict management is one of the most impressive parallels. This empirical parallel is built upon, to construct an evolutionary scenario for the development of morality and law in their proto-forms.

Selfish dominance consisting of pure physical coercion has nothing to do with law. But when culturally patterned understandings about what is socially desirable develop in a context tempered by dominance or authority, and in being informally sanctioned they help to regulate social behavior, we speak of customary law. Such sanctioning is practiced by all human groups, acting as moral communities which agree on a code of prescribed and proscribed behavior. Moral communities deliberately condition their members in directions they believe will promote social harmony, and the more this purposive regulation of social conduct comes to be formalized and institutionalized, the closer it approaches modern law based on written legal codes, with formal judicial bodies, policing specialists, and a penal system.

The continuum between non-literate and modern legal systems is well recognized among legal anthropologists and others. However, extension of this continuum to other highly social species or to hypothesized behaviors of our direct precursors has been tentative. Gruter's (1977, 1979) general analysis of analogs to legal behavior in non-human primates has been one important attempt to blaze a trail in this direction, while Lorenz (1966) and Bischof (1980) point to a number of analogs to moral behavior in other animals. By contrast,

Kummer's (1980) assessment of moral homologs in non-human primates remains negative. But this may be due to the rather restricted definition of morality he works with.

PRELIMINARY SCENARIO FOR EVOLUTIONARY DEVELOPMENT OF THE MORAL COMMUNITY

I shall explore dominance, coercion, submission, flight, conflict resolution and leadership as probable loci for the evolutionary development of protoforms of moral and legal behavior in earlier stages of human evolution. I take for granted the arguments of Tiger (1969) and Eibl-Eibesfeldt (1974), that bonding and positive affect are also of great functional importance, but have not received their due in socio- biological analyses of human behavior. My reasons for concentrating on politics rather than love will very quickly become clear. Given the excellent data on social dominance and conflict interference in extant primates, it is possible to develop relatively specific, homology-based hypotheses on the origin of morality and law, hypotheses specific enough to be tested for relative plausibility against other such hypotheses.

It is difficult to conceive of the early evolutionary development of law, without speaking first of the development of proto-morality and morality. Elsewhere (Boehm 1981c, 1981d) I have suggested that the origin of morality came through deliberate interference in conflicts within co-operating groups of primates. Such interference occurs among adults in many extant monkeys which exhibit dominance rankings, and in great apes as well. Because such efforts apparently involve an intention to restore social harmony, I have called them "proto--moral."

These animals display less cooperation at the group level than is generally assumed for protohominids, yet they are sufficiently sophisticated, socially, to manipulate many exacerbated conflicts. It is assumed that protohominids also recognized the value of social harmony and controlled obvious social problems such as severe fights with still more insight. However, monkeys and apes must not be underrated. They employ an impressive range of deliberate techniques to interfere in conflicts so as to terminate them (Boehm, 1981d).

Certain of these extant primates, notably chimpanzees and orangutans, also are able to recognize themselves in mirrors (Suarez & Gallup, 1981). In early humans, it is assumed a similar but more developed capacity for individual self-conceptualization developed into

a sense of *group* self-interest, which by far transcended anything developed by extant monkeys or apes.

The assumption, then, is that morality developed as a form of rational problem solving. The hypothesis is that morality had its earliest roots in conflict management. It later came to encompass group sanctioning of individual deviance in other areas, including eventually deliberate limitation of raw power used by dominant individuals acting as leaders.

Once all this happened and verbal symbolic communication arrived, restoration (or maintenance) of social harmony by collective sanctioning, and subsequent intentional regulation of dominance itself, were developments which provided important preconditions for the evolutionary development of protolegal behavior, and eventually of law. Minimally, this must have involved a set of agreed upon rules of conduct, and some collectively espoused means for applying and enforcing such rules.

This brief scenario provides a bare outline of the evolutionary sequence I shall try to reconstruct. I now treat various aspects of the argument separately, offering a series of rather specific hypotheses about the relation of social dominance to the development of morality. Later, I shall integrate these hypotheses into a more definitive scenario for the origin of morality and law in their proto-forms.

EIGHT HYPOTHESES

Hypothesis 1:

Prehominids exhibited behavioral lability.

Our precursors were capable of flexible adaptive modification, in Kummer's (1971a) sense. In other words, the balance between genetic preparation and learning was such that considerable flexibility in social organization was present. This means under conditions of environmental change, that relatively major adaptive modifications at the phenotypic level could be made rapidly. For example, upon becoming more terrestrial this ape may have escalated its predator defenses very quickly, through development of cooperative bluffing and fighting.

Hypothesis 2:

In prehominids, there may have been relatively stronger preparations for dominance, and weaker ones for submission.

I hypothesize that genetic preparations for social dominance mechanisms in early hominids were comparable to those of great apes, baboons or macaques. It is assumed that as largish arboreal primates our direct precursors interacted at group levels above the nuclear family level, and such groups were adaptively dependent on genetic dominance and upon the resulting social dominance hierarchies. More basically, such groups consisted of bonded animals capable of recognizing one another individually.

The potentially controversial assumption is that submission was less prepared genetically, compared to dominance. This is based on the following reasoning. It is widely agreed that our precursors lived arboreally. In such niches, many extant species tend to display flight behavior in the face of dominant aggression rather than submissive behavior which neutralizes the aggression. However, flight is not easily substitutable for submission among ground dwelling primates because fleeing animals are very exposed to predators.

To summarize this hypothesis, our precursors, adapting to terrestrial niches as lakeside savannahs opened up, already had well-developed tendencies toward dominance behavior previous to this adjustment. They had resorted mainly to flight as an effective individual response to aggression, and this worked perfectly well up in trees. On the ground, a social dominance hierarchy became still more critical for group survival. But something other than flight was needed, if dominance interactions were not to seriously damage reproductive success.

Hypothesis 3:

In protohominids, adverse effects of dominance were inhibited through deliberate interference by third parties in conflicts within the group.

In making their adaptation to lakeside savannahs these apes developed largely group-traditional controls on dominance behavior, rather than depending heavily on flight or submission, as genetically well-prepared mechanisms. These controls were built upon a previously less developed capacity for deliberately interfering in internecine conflicts through a variety of strategies, the aim being to stop an episode of exacerbated agonism.

Such behavior is exhibited regularly in langurs, macaques, baboons, chimpanzees and a number of other primates, conflict interference constitutes only a secondary control on aggression. The primary controls are genetically well-prepared individual submission, while interference takes over when such submission is ineffective and an agonistic episode becomes exacerbated. However, among protohominids I am hypothesizing that conflict interference, as a form of deliberate problem solving, had to account for a much greater proportion of social control on dominance, compared with any extant non-human primate. The resulting cohesive group was able to ward off terrestrial predators, and eventually was able to hunt large game cooperatively.

Hypothesis 4:

Terrestrial adaptation created selection pressures favoring more socially sensitive individuals.

In macaques, much dyadic and triadic agonism is rather fully acted out through physical contact and even fighting. In baboons, a greater proportion of such communication takes place through posturing, gestures and vocalization. In chimpanzees and gorillas, the latter tendency is so great that subordinates anticipate aggression much of the time, or are able to pick up on very subtle cues because of their greater social sensitivity. This is true of dyadic dominance interactions, but also of triadic alliancing or interference situations.

As protohominids developed a greater dependence on interference, selection at both individual and group levels favored a social sensitivity which permitted individuals to *anticipate* the outcomes of dominance or interference episodes, and to modify their behavior in advance. This brought selective advantages to individuals because time, energy and physical risk were reduced, as costs accompanying the gains of social dominance hierarchy. It also increased reproductive successes of groups as semi-isolated breeding populations, as did increased cohesiveness and flexibility resulting from such sensitivity. One result was an animal that was becoming increasingly receptive, through learning, to social control; another was a tradition of social manipulation far subtler than that of chimpanzees and gorillas.

Hypothesis 5:

Tool use may have exacerbated dangers of intragroup agonism.

It seems probable that the homicidal potential of hominids was increased by tool inventions which made predation on larger game possible. Particularly since canine teeth suitable for ripping or slashing were absent, it would appear that even use of large stones as hand-held " weapons or projectiles would have greatly escalated the probability that intragroup conflicts might seriously diminish reproductive success of a group. As a result of such inventions, selection favoring conflict interference may have escalated concomitantly, through a combination of individual and interdemic selection effects.

Hypothesis 6:

The moral community was a necessary development in the human line.

At some point, advanced development of self-conceptualization and symbolic verbal communication permitted verbal labeling and generalization concerning the same obvious social problems which had been intuitively but deliberately "managed" through conflict interference. This was the earliest manifestation of the moral community which exists in every contemporary human society. Most likely, the first problems discussed were ones of a violent nature: quarrels injurious to a consensually appreciated group-interest in maintaining well-recognized forms of cooperation. This involved conceptualization of collective interests as being more important than individual interests. As agreed-upon rules of conduct were built out of the experience of the moral community in social problem solving, proto- legal behavior emerged.

The moral community may be defined technically as a primary group having a conscious and collective sense of its own self-interest, which generalizes its preference for social behavior into idealized models and restrictive rules, and knowingly sanctions these preferences so as to condition individual behavior in desired direction. As a precondition, there must exist the individual social sensitivity mentioned in *Hypothesis 5*. But also individuals in the group must understand social dynamics well enough to harness this sensitivity in manipulating the behavior of individuals judged to be deviant.

*Hypothesis 7:**Dominance in leadership becomes regulated by the moral community.*

As moral communities emerged, the already diminishing coercive dominance of individual leaders was further limited. In part this diminution was due to genetic selection, since increased social sensitivity made coercive methods less efficient. But it was also due to a growing individual sensitivity to public opinion, on the part of followers and leaders alike. Thus, there came to be deliberate collective curtailment of individual power, as a matter of right and wrong. This was the origin of the egalitarian ethos so regularly exhibited by smaller extant human societies. Followers began to decide exactly how strongly they wished their leaders to express dominance, for which increasingly moderate genetic preparations still persisted. Dominance patterns became heavily shaped by group tradition, since leaders had become sensitive to subtler social pressures.

As groups came to manipulate their leaders through social pressure, an enormous gap grew between protohominids or early humans and other primates, in the expression of dominance behavior. This was significant both in the acting out of dominance, and in its inhibition as well. The result was a less genetically dominant species, but one which continued to have relatively strong genetic preparations for dominance, compared with those for submission. Interference, and a more thorough elaboration of bonding, did much of the job performed by submission gestures in other terrestrial primates.

*Hypothesis 8:**Timing was essential; when did the moral community and proto-legal behavior arrive?*

I have made these developments contingent upon the arrival of spoken verbal language. However, it is emphasized that linguistic development need not have been very elaborate, to permit conceptualization of group self-interest and generalization about desirable versus undesirable varieties of behavior. The crucial factors are capacity for self- conceptualization and an intelligent ability to generalize, not full development of verbal symbolic language. Chimpanzees and orangutans (but not baboons or macaques) are well along the road to self- conceptualization already (Suarez & Gallup, 1981). And chimpanzees (with gorillas) have shown themselves to be capable of learning and manipulating symbols inventively, in spite of limited capacity for verbalization using phonemes invented by humans.

Because there is no good evidence which limits the articulatory potential of our precursors to form words in terms of phonemes different from those employed by humans, one must place the advent of protolanguage ability in terms of development of intelligence. Given the impressive capacities of chimpanzees in manipulating signs, assigning an earliest possible date becomes difficult. So for the emerging moral community this chronological hypothesis must remain vague, but potentially very early. Given the available evidence for technological problem solving, *Homo erectus* seems a likely guess for definitive emergence of moral communities and, presumably, of proto-legal "rules."

LOCUS OF SELECTION

In its broadest outline, the argument underlying these eight hypotheses is so generally accepted that it approaches being a truism to which deference is paid in every anthropological textbook. A particular ape developed increasing lability over a long period of time, and eventually became technologically very inventive, verbally symbolic and moral in that order. However, there is actually a choice between two major theories explaining how selection came to favor such lability. The strongly predominant one (e.g. Leakey, 1961) holds that this was in the technological field (invention of tools, etc.) while the other (e.g. Kummer, 1971a) favors the field of social behavior as the locus for development of increasing lability and intelligence.

In extant non-human primates, it is obviously difficult to weigh the degree of lability manifested in the social versus the technological sphere. But intuitively it seems that lability is expressed far more strongly and with more variety in the social field than in the technological field. On this basis, I join the minority to suggest that early in the evolution of cultural capacity, selection favoring greater *social* lability could easily have been the crucial factor. Kummer's (1971) arguments concerning benefits of adaptive modifiability in social structure are highly suggestive here.

THE FULL SCENARIO

In thinking about various spheres of primate social behavior as to which are the most labile, conflict interference is a well-qualified candidate, since this behavior involves deliberate use of a number of different behavioral strategies to achieve an impressively complicated end

(Boehm, 1981*d*). By tying the evolution of social lability to this particular behavior in its relation to social dominance, it is possible to construct a more specific evolutionary scenario than is usually generated in the course of such speculations. The immediate purpose is to explain the genesis of morality. But since "morality" has been defined to consist of deliberate problem solving, the argument also explains something about the earlier development of inventive cultural capacity, as well as setting the stage for the emergency of law.

For lack of a better concept, one might treat the "aesthetic sense," broadly conceived, as the locus of human problem solving ability (Boehm 1981*b*), since this involves not only a bias in favor of pattern consistency, but a rather considerable intuitive capacity for what academicians call "systems analysis." Conflict interference in non-human primates provides a good example of this aesthetically oriented problem-solving capacity in action: elsewhere (Boehm, 1981*c*), I have argued that restoration of social harmony is the object, and that interferers make rather complicated calculations with respect to social dynamics.

Conflict interference of higher primates not only involves a strong manifestation of lability, but is proto-moral. For both reasons, I have chosen this behavior as the logical area in which morality itself developed. This hypothesis is relatively specific, yet well supported by the slender evidence available. It is difficult to identify definitely by homology any other form of proto-morality in extant non-human primates, as they behave in their natural habitats without human tutelage.

The scenario based on the eight hypotheses is actually rather simple. A behaviorally labile and largely arboreal ape, exhibiting both social dominance hierarchy and some conflict interference, moved into terrestrial habitats. There, due to increased predator pressures, group size and social cohesiveness became crucial criteria for selection. Whether or not genetic submission mechanisms were relatively weakly developed up in the trees, selection favored labile conflict interference over genetic submission mechanisms, even though both sources of variation surely were available. The assumption is that interference was more effective than submission, given the new terrestrial selection pressures. It is also possible that lability was being positively selected on other bases, so that interference gained a selective edge over submission mechanisms with some outside help, as it were. Technological invention remains a logical candidate, here.

When chimpanzees interfere in conflicts, which is very infrequently

in comparison with macaques and baboons, it appears that the interferer's cues are more subtle, and that responses are more sensitive. Since these apes manifest a good deal of dominance behavior in general, this marked difference cannot be explained simply by saying "that there is less dominant aggressiveness floating around in these species. Nor does it appear that individual submission is relatively more developed in the apes to a degree that submission controls dominance so effectively that interference is seldom necessary. Rather, it appears that interference is carried out (and responded to) much more frequently by nuance.

I have suggested that in terrestrial prehominids, asocial sensitivity greater than that of apes was selected mainly because this made control of dominant aggression more efficient. Selection in this direction not only enhanced the capacity of subordinates to respond efficiently, but also enhanced dominance interactions in general.

Small sacrifices of time and energy and fewer risks of bodily injury were demanded by these interactions, as they became based less on physical attacks or serious threats, and more on subtle indications which were expertly "read" by subordinates. And this, in turn, led to an increased capacity for communication by non-verbal signals. Of "course, leaders and followers alike became prepared genetically to be more socially sensitive. As a result, it also became easier for followers to sanction leaders when leaders acted agonistically not as peace-makers but as aggressors.

At this point, the protohominid we are discussing had developed a stronger degree of proto-morality than any extant non-human primate, expressed through an increasingly subtle tradition of conflict interference. It may be assumed also that this highly social and still rather feisty creature was more similar to chimpanzees than to any other extant primate. At the same time, its capacity for self-conceptualization was being extended to include a relatively advanced, if still rudimentary, sense of group membership. Concomitantly, the genetic basis for its problem-solving "quotient" was growing, possibly with some additional help from technological invention.

Verbal symbolic communication was probably necessary to formation of actual moral communities, since as defined these collectivities developed shared evaluation understandings about preferred and non-preferred behavior, and practiced sanctioning accordingly. When such understandings are generally known and are sanctioned, it is possible to speak not only of a sense of "right" and "wrong," but of "rules." It is difficult to imagine the development of such under-

standings without the advantage of a proto-language. But then, it is not easy to imagine a proto-language in the first place. With respect to the development of morality and of spoken language, it seems likely the two developed concomitantly, along a gradual continuum. This means that language ability was not selected just because it permitted better communication useful to the subsistence quest. It was also selected because of its contribution to more effective social control, as a key mechanism which permitted this socially aggressive primate to reap the benefits of cooperation in predator defense, in the subsistence quest, and possibly in winning encounters with other primates.

As I have indicated in *Hypothesis* 8, it is difficult to place the transition from proto-morality to full morality in time. However, given the general intelligence and aesthetic capacity of *Homo erectus*, as inferred from stone artifact production and from the fact that large game was hunted, it seems possible that the moral community arrived that early. The only other thing needed is development of a proto- linguistic capacity to label behaviors and to assign them values publicly.

This scenario proposes a straight line development of conflict interference into conflict management, as the original basis for morality. This constitutes a narrow view of morality, compared with morality as we know it today. But potentially the moral regulation of sexuality, property and homicide, as well as moral rules which apply to veracity, are all intimately related to conflict resolution. All are likely causes of conflict, and as conflict management became more sophisticated, it is logical that its causes would be anticipated and dealt with in advance. With this assumption, the incest taboo falls by the wayside for a candidate as the catalyst which produced moral regulation of social life. I suggest instead that it was more in the political sphere that morality developed, and that at some point after the advent of the moral community, the egalitarian political ethos arose as aside effect.

IMPLICATIONS OF THE ARGUMENT

Moral communities of our precursors, whenever these arrived, signaled a new development in the evolution of social organization. Social sanctioning was no longer fully automatic, as in dominance hierarchies of chickens. Nor was there only a small element of deliberate inventive problem solving, as in the individual conflict interference of certain monkeys and apes. Social control became not only much more deliberate and insightful, but also *collective*. And this

brought about the genesis of morality and the basis of law. The scenario is based on the assumption that our precursors may have started with relatively strong genetic preparations for dominance, but with relatively weaker genetic preparations for submission. In any event, instead of developing strong genetic submission mechanisms needed to inhibit this dominance in their new terrestrial niche, they developed more effective inhibitory mechanisms in the area of conflict interference as a more labile behavior. As a result of increasing lability, genetic preparations for dominance itself became weaker and less specific, but still remained stronger relative to submission, compared with other terrestrial primates.

For all the attention the issue has received in the past seven years, the relation of genes to labile behavior remains a realm of mystery. But still-prevalent environmental explanatory fashions must not be allowed to obscure the fact that humans are programmed to learn in rather specific ways (Pulliam & Dunford, 1980), and in terms of rather predictable basic emotional reactions. It is at least interesting to ask at this point whether contemporary humans may be somewhat better prepared genetically to inhibit such behavior, both as submitters and as dominators who remain responsive to submissive signals (obviously, in humans none of these behavioral preparations could be very specific).

This speculative hypothesis fits with the evolutionary scenario. If plausible, it helps to explain a phylogenetic anomaly in the human species. Our species is distinctive for several reasons, one being that we develop moral communities, another being that we practice genocidal warfare. A relative preponderance of genetic dominance over genetic submission has already been hypothesized to be germane to the development of morality as an inhibitory mechanism which controls dominance. It may also be highly germane to the explanation of how warfare developed in our species. Humans appear to be admirably equipped with a potential for homicidal attack, which cultural development sometimes fosters. Potentially we also have a relatively low level of responsiveness to submission, as far as genetic preparations are concerned. It is not difficult to see why serious warfare might develop, as long as it does not threaten species extinction, since so often conspecific killing is effectively inhibited only within the primary group, or within a set of allied primary groups.

To explain the existence of warfare in terms of morality, one must call on another manifestation of the contemporary moral community, namely ethnocentrism. The dual moral standard inherent in ethno-

centrism (Le Vine & Campbell, 1972) allows outgroupers to be treated like animals to which normal rules regulating homicide do not apply. Xenophobia exhibited by extant terrestrial primates (Southwick, 1974) suggests that sources of variation in this direction were available in our precursors, and this facilitates arguments that ethnocentric moral double standards may be quite ancient-as ancient as the moral community itself.

The result is a species which has been able to practice warfare for at least ten millenia without destroying itself. One reason this has been possible may be that while warfare involves a special moral license to commit homicide, it seldom remains entirely ungoverned by rules. In this sense, 'international law' may be nearly as ancient as the law which prevails within moral communities.

CONCLUSIONS

In conclusion, I suggest that the origin of the moral community, as a precondition for the emergence of law, was the product of selective pressures attendant upon the change from an arboreal to a terrestrial adaptation. Conflict interference provided an increasingly efficient inhibitory mechanism to control destructive side effects of social dominance and of culturally reinforced human propensities to be self-assertive in general, where these resulted in socially troublesome behavior. This was a highly potent instrument of adaptation, by which humans usefully contributed to their own adaptive success on a deliberate, perceptive basis. As cultural selection became more salient, genetic preparations for dominance were weakened, being augmented by selection favoring individual social sensitivity in leaders and followers alike. Group self-conceptualization and verbal symbolic communication, which probably arrived in tandem, made possible the development of moral communities. In these communities, group sanction emerged as the most powerful instrument for regulation of individually assertive behaviors, particularly those which very obviously disrupted cooperation or disturbed social equilibrium needed for group stability.

I have not spoken at all of duty, obligation, or other favorite abstract entities favored by moral philosophers, although elsewhere I have suggested (Boehm, 1981*c*) that extant non-human primates exhibit something like a rudimentary sense of social responsibility. But my argument is highly consistent with the philosophical notion that moral behavior is intentional (Stent, 1980), since I have emphasized

that moral behavior involves finding sophisticated solutions to perceived social problems. It is on this basis, that I have treated the kind of conflict interference exhibited by extant non-human primates as the prototype for moral behavior in the human line. My interpretation is that this labile behavior involves some rudimentary social sophistication, is highly intentional, and is oriented to an aesthetic appreciation of social harmony, as well as to protective concerns for individuals and to needs to assert dominance.

This interpretation may seem dangerously "psychological" or "mentalistic" to ethologists who remain loyal to a strict behaviorist tradition. But arguing as I have from an interface point joining natural science and behavioral science, I have taken it as my prerogative to be liberal, yet reasonably careful, in the interpretation of data from primate ethology. In their specificity, the hypotheses I have developed now await the scientific test of relative plausibility, in competition with alternative accounts of the origin of morality and law.