

The most basic question asked by sociobiology as well as sociology is: why are animals social, that is, why do they cooperate? Why are some species more social than others? The answer was long intuitively known: animals are social to the extent that cooperation is mutually beneficial. What sociobiology does is supply the main genetic mechanism for animal sociality, namely kin selection to maximize inclusive fitness. Natural selection operates through differential reproduction. Different alleles of the same gene compete with each other, and the ones that are carried by the more reproductively successful individuals have a greater probability of being replicated in the population's next generation. The successful alleles are the ones which, in a given environment, favor the reproductive success or 'fitness' of their carriers.

The great theoretical contribution of sociobiology has been to extend the concept of fitness to that of 'inclusive fitness'.¹ Indeed, an animal can duplicate its genes directly through its own reproduction, or indirectly through the reproduction of relatives with which it shares specific proportions of genes. Animals, therefore, can be expected to behave cooperatively, and thereby enhance each other's fitness to the extent that they are genetically related. This is what is meant by kin selection.² Animals, in short, are nepotistic, i.e. they prefer kin over non-kin, and close kin over distant kin. This may happen consciously, as in humans, or, more commonly, unconsciously. Kin selection does not presuppose consciousness in order to be operative.

The propensity to be 'altruistic,' i.e. to contribute to alter's fitness at the expense of ego's fitness, is directly proportional not only to the coefficient of relatedness between ego and alter, but also to the benefit/cost ratio of the altruistic act. To use a human example, a post-menopausal mother could be expected to sacrifice her life more readily for a young adult child about to reproduce than a young mother to forego her life for the benefit of her first foetus. The genetic relationship is the same in both cases (namely, one half), but the fitness cost is low in the first case, high in the second. Altruism, then, is directed mostly at kin, especially close kin, and is, in fact, a misnomer. It represents the ultimate form of genetic selfishness. It is but the blind expression of inclusive fitness maximization. In fact, a simple formula leads one to predict

that 'altruism' can be expected if the cost/benefit ratio of the transaction is smaller than the coefficient of relatedness between alter and ego.

There is no reason to doubt that kin selection is a powerful cement of sociality in humans as it is in other animals. Yet, it is also clear that kin selection does not explain all of human sociality. There are, in my view, two additional bases of human sociality: reciprocity and coercion. Rudimentary forms of these are also present in many animals, but human forms of reciprocity and coercion greatly overshadow in complexity and importance anything we know in other species. Not surprisingly, therefore, even the simplest and smallest human societies, though far less 'perfect' than those of the social insects (termites, ants, bees, wasps), are much more complex than those of any other known species. Reciprocity is cooperation for mutual benefit, and with expectation of return, and it can operate between kin or between non-kin. Coercion is the use of force for one-sided benefit, that is, for purposes of intra-specific parasitism or predation. All human societies continue to be organized on the basis of all three principles of sociality: kin selection, reciprocity, and coercion. However, the larger and the more complex a society becomes, the greater the importance of reciprocity, and, with the emergence of the state, coercion becomes in relation to kin selection.

This is the barest sketch of an argument which [...] seeks to reduce individual behavior, social structure and cultural superstructure to the competition for scarce resources between individual organisms, each one acting, consciously or unconsciously, to maximize its gains or minimize its losses. This view of human affairs is sufficiently at variance with much of contemporary social science to arouse passionate rejection as a return to simplistic instinct theory, biological reductionism, speculative evolutionism, social Darwinism, racism, hereditarianism, and so on. [...] Suffice it to say that sociobiology is indeed reductionist (as all modern science), evolutionist (as all modern biology), and materialist (as much good social science), but that it is emphatically not a return to social Darwinism, instinct theories or racism, and that it does not belittle the importance of environmental factors, the unique characteristics of *Homo sapiens*, and the significance of human culture. It merely asserts in the most undogmatic fashion that human behavior is the product of a long process of adaptive evolution that involved the complex interplay of genotypical, ecological and cultural factors.

How do these phenomena relate to race and ethnicity? My central thesis is that both ethnicity and 'race' (in the social sense) are, in fact, extensions of the idiom of kinship, and that, therefore, ethnic and race sentiments are to be understood as an extended and attenuated form of kin selection. Class relations, on the other hand, are in the realm of reciprocity, and are therefore of a fundamentally different nature. In more general form, I am suggesting that there are two broad types of human collectivities: the ones that I shall call Type I tend to be ascriptive, defined by common descent, generally hereditary, and

often endogamous, and those of Type II that are joined in the defense of common interests. Type I includes racial, caste and ethnic groups, while Type II encompasses such varied associations as trade unions, political parties, professional bodies, sports clubs, neighborhood groups, parent-teacher associations, and so on. Empirically, of course, a group may have mixed characteristics, as an ethnically-based political party, or a hereditary occupational guild. Nevertheless, in their ideal-typical form, each kind of group has a clearly distinct basis of solidarity: kinship and interest respectively.

Type I groups are generally preferentially or prescriptively endogamous, but internally subdivided into exogamous kin groups: nuclear families, lineages, clans, kindreds. Indeed, until the last few thousand years of human history, Type I groups were synonymous with human societies. They were small, in-bred populations of a few hundred individuals, prototypical 'tribes' that regarded themselves as 'the people', sharing common descent, real or putative, and as children of the mythical founder couple or creator god. Members of the tribe, though subdivided into smaller kin groups, saw themselves as a single people, solidary against the outside world, and interlinked by a web of kinship and marriage making the tribe in fact a superfamily. A high rate of inbreeding insured that most spouses were also kinsmen. The cultural inventions of unilineal descent and lineage exogamy permitted the extension of that primordial model of social organization to much larger societies running into the tens of thousands of people, and yet where Type II organizations were almost totally absent (with the exception of age sets).

Ethnic groups, for nearly all of human history, were what geneticists call breeding populations, in-breeding superfamilies, in fact, which not only were much more closely related to each other than to even their closest neighbors, but which, almost without exception, explicitly recognized that fact, and maintained clear territorial and social boundaries with other such ethnic groups. This is, of course, not to deny that migration, conquest, and interbreeding took place with some regularity, and thus that the common ancestry of 'the people' was always partially fictive. But this was also true of smaller kin groups: the *pater* is not necessarily the *progenitor*. That the extended kinship of the ethnic group was sometimes putative rather than real was not the important point. Just as in the smaller kin units, the kinship was real often enough to become the basis of these powerful sentiments we call nationalism, tribalism, racism, and ethnocentrism. The ease and speed with which these sentiments can be mobilized even in modern industrial societies where they have to compete with many Type II groups, the blind ferocity of the conflicts to which these sentiments can lead, the imperviousness of such sentiments to rational arguments are but a few indications of their continued vitality and their primordiality.

What I am suggesting is that ethnocentrism evolved during millions, or at least hundreds of thousands of years as an extension of kin selection. Recipro-

city was also involved, especially in the exchange of women in marriage, but as spouses were typically also kinsmen there was no sharp distinction between kin selection and reciprocity. As hominids became increasingly formidable competitors and predators to their own and closely related species, there was a strong selective pressure for the formation of larger and more powerful groups. Group size in hunting and gathering societies was, of course, severely constrained by ecological factors, but, still, there was an obvious selective advantage for kin groups to form those solidary superfamilies we call tribes; this, in turn, as Bigelow³ so clearly argues, necessarily meant organizing against other competing groups, and therefore maintaining and defending ethnic boundaries.

Of Type II groups, little needs to be said here. With the exception of age sets, they tend to be characteristic of larger, more complex, state-organized societies, and therefore to have arisen much later in human evolution, and to be more exclusively cultural. They are, of course, also important, especially in industrial societies, but they are not primordial, they can be more readily formed and disbanded, they are more amenable to cool, rational calculations of interest, and they do not as readily unleash orgies of passion. Nor, of course, have they stamped out Type I groups. Another fundamental difference between Type I and Type II groups is that the former tend to be mutually exclusive in membership and thus to form the basis of most primary relationships, while the latter are segmental, and non-mutually exclusive. Millions of people in individual societies belong to a multiplicity of Type II groups, few of which involve them very deeply or permanently. Some people are ethnically alienated, marginal or mobile or they are the product of mixed marriages, but most people belong to a single ethnic group or sub-group, and remain there for life. Even allowing for all the complications of the real world, and the existence of mixed-type groups, the categorical distinction remains nevertheless quite striking.

Let us return to Type I groups, our special concern here. I have suggested that they evolved as an extension of kin selection, and thus probably have a partial biological basis, in the same sense as human kinship systems are rooted in biology. This contention is, of course, hotly contested by anthropologists such as Sahlins,⁴ who counter that human kinship is cultural, not biological. Almost every aspect of human behavior takes a cultural form, from sneezing and defecating to writing poetry and riding a motorcycle. But this is not to say that some of these things do not also have a biological basis. I am definitely not arguing that we have a gene for ethnocentrism, or for recognizing kin; rather I am arguing that those societies that institutionalized norms of nepotism and ethnocentrism had a strong selective advantage over those that did not (assuming that any such ever existed), because kin selection has been the basic blueprint for animal sociality. To explain the universality of ethnocentrism and kinship organization in human societies by invoking culture is completely

question begging. Culture is merely a *proximate* explanation of why people behave ethnocentrically and nepotistically. As every ethnographer knows, when natives are asked why they behave a certain way, they answer: because it is the custom. The anthropologist then translates: because of his culture; the sociologist says: because he has been socialized into the norms of his society; and the psychologist counters: because of his learning experiences. All of them are right as far as they go, but none of them has explained why all human societies practice kin selection and are ethnocentric.

So far, I have stressed ethnicity rather than race or caste in my treatment of Type I groups. Caste is a very special case, limited, even if one adopts a wide definition of the term, to highly differentiated, stratified societies, and may be considered an extreme case of the grafting of the principle of occupational specialization into what is basically a Type I group. Castes are not unique in being occupationally specialized Type I groups. Ethnic and racial groups also tend to become so.¹ Castes are merely extreme cases of occupational specialization linked with rigid endogamy and hierarchization.

Race is a different matter. First, I should make it clear that, even though I have presented a partially biological argument, I am most emphatically *not* using the word 'race' in the sense of a sub-species of *Homo sapiens*. Instead, I mean by 'race' the social definition which it is variously ascribed in different societies. Social race typically seizes on biologically trivial phenotypes, and, equally typically, corresponds only very imperfectly with genetically isolated populations. It thus has no intrinsic biological significance, as indicated by the fact that only a few of the world's societies use primarily morphological phenotypes to define themselves, and to differentiate outsiders.

At first blush, this would seem to invalidate my argument that ethnic and racial sentiments represent an extension of kin selection. If that is the case, why should most human societies seize primarily on such obviously culturally transmitted traits such as language and dialect, religious beliefs, dress, hair styles, manners, scarifications, and the like as badges of group recognition and membership? If the name of the game is to identify kinsmen in order to enhance one's inclusive fitness, then why are not inherited physical characteristics chosen as recognition signals, rather than acquired cultural traits? Sometimes, of course, morphological phenotypes such as skin color, facial features, stature, hair texture, eye color, and so on are used, not only to define group membership, but also, within the group, as tests of ever-questionable paternity. Generally, however, cultural criteria of membership are far more salient than physical ones, if the latter are used at all. Societies that stress physical phenotypes more than cultural traits are exceptional. Why?

The answer must again be sought in our evolutionary history. Until the last few millennia, that is, until the rise of conquest states, sudden, large-scale, human migration was rare, and human breeding populations were small. There was migration and interbreeding, but on an individual scale, and mostly

between neighboring groups. The result was that neighboring populations were typically not sharply discontinuous in their genetic composition. The relative proportions of alleles of the same gene often constituted a gradient as one travelled through several breeding populations. Eye color in Europe would be a good example. The further north one goes, from, say, Sicily to Sweden, the higher the proportion of lightly pigmented eyes. Yet, at no point in the journey is there a noticeable discontinuity. Eye color, therefore, is a poor criterion of national membership in Europe. Indeed, it varies much more within national groups, and indeed even within families, than between groups.

Now, Europeans do use some morphological phenotypes to distinguish various ethnic groups. They speak loosely of 'Nordic', 'Mediterranean', 'Jewish', and so on, types. In the absence of any other clue, probabilistic guesses are often made on the basis of physical appearance as to a stranger's ethnic origin.² Most groups probably have what Hoetink termed a 'somatic norm image',³ that is, a mental picture of what a model group member looks like. The point, however, is that morphological phenotypes tend to be used either in the absence of more reliable cultural clues (such as language), or when physical appearance is widely discrepant from the somatic norm image (as, for instance, in Europe with Asians or Africans).

A good test of group membership for the purpose of assessing kin relatedness must meet the basic requirement of discriminating more reliably between groups than within groups. That is, the criterion chosen must show more intergroup than intra-group variance. Until recently, cultural criteria met that condition far more reliably than physical ones. The problem was for small groups to distinguish themselves from their immediate neighbors, not with unknown populations thousands of kilometers away. Even the most trivial differences of accent, dialect, vocabulary, body adornment, and so on, could be used far more reliably to assess biological relatedness or unrelatedness than any physical phenotype.⁴ Therefore, whatever test was easiest to apply and correlated best with kin relatedness was used. That the correlation was spurious did not matter. What mattered was that it discriminated accurately.

This theory accounts not only for the general prevalence of cultural diacritica in assessing group membership. It also accounts for the appearance of racism when and where it does occur better than any competing theory. The kin selection argument predicts that physical criteria will be salient to the extent that they do a good and easy job of discriminating kin and non-kin. This obviously occurs in the aftermath of large-scale, long-distance migration, whether through conquest, incursions, slavery, indenture, or voluntary immigration. The colonial expansion of Europe beginning some five centuries ago, and all of the massive population transfers it brought in its wake are, of course, the overwhelmingly important genetic event of our species. Predictably, it brought about a great surge in racism, because all of a sudden, it became possible to make a fairly accurate kin selection judgment from a distance of

several hundred meters. The Durchman at the Cape, the Portuguese in Brazil, the Englishman in Kenya did not have to ask questions and pick up subtle clues of accent to detect kin relatedness. By using a simple test of skin pigmentation he could literally shoot and ask questions later at little risk of killing a kinsman.

[...]

We suggested at the outset that there were three main mechanisms of human sociality: kin selection, reciprocity and coercion. Ethnic and racial groups command our unreasoned loyalty because they are in fact, or at least in theory, superfamilies. But ethnic and race relations are not only relations of cooperation and amity with the in-group; they are equally importantly relations of competition and conflict between groups. While intra-group relations are primarily dictated by kin selection, real or putative, intergroup relations are typically antagonistic. Occasionally, ethnic groups may enter a symbiotic, mutually beneficial relationship based, for instance, on the exploitation of two specialized and noncompetitive niches in the same habitat. Relations between some pastoralist and sedentary groups are of this type. More commonly, there is open competition for, and conflict over scarce resources, and not infrequently the establishment of multi-ethnic states dominated by one ethnic group at the expense of others. Coercion then becomes the basis of interethnic (or inter-racial) relations.

Unlike kin selection and reciprocity which require no justification because they contribute to the fitness of all actors in the system, coercion, which leads to asymmetrical parasitism, often does attempt to legitimate itself. Interestingly, there are but two basic ideologies in support of coercion. One seeks to disguise coercion as kin selection, and here we have the many brands of paternalism and familism that have been used to justify nearly all pre-industrial forms of despotism. The other attempts to present coercion as reciprocity and exchange, it is characteristic of the various 'democratic' ideologies of industrial societies in the last two centuries, from liberalism to socialism. Why this ideological shift from paternalism to *liberté, égalité, fraternité* in justifying tyranny during the last two centuries?

Perhaps this ideological shift reflects in part the increasing incorporation of small nation-states into multi-national states. Paternalism is a peculiarly well suited ideology for the small, ethnically homogeneous nation-state. Not surprisingly, it was independently reinvented in societies as far distant as China, Japan, Inca Peru, Tsarist Russia, Ancient Egypt, Ottoman Turkey, Renaissance Europe and countless African kingdoms. Paternalism works in monoethnic states because the very concept of the nation is an extension of kin selection. For the same reason, it breaks down in multi-ethnic states. It was one thing for the Japanese peasant to look on his emperor as a divine super-father, the living incarnation of Nippon, quite another for the Hindu peasant to regard that polluted beef eater, Queen Victoria, as the living symbol of Mother India. An ideology based on reciprocity, on the other hand, can transcend ethnic bound-

aries. It is therefore a suitable one for the 90 per cent of the world's states which are multi-ethnic conglomerates and, furthermore, being ethnically neutral, it exports remarkably well as revolutionary ideology. It is no accident that France launched into the most imperialistic phase of its history immediately after the Revolution.

The ideas sketched here are still tentative. They do not so much supplant other theories of ethnicity and race as supplement them by putting them in the broader context of evolutionary thinking. They do not purport to explain everything about these phenomena; they do not predict detailed historical occurrences, nor account for subtle cultural differences. They do, however, suggest parsimonious hypotheses to account for features of race and ethnicity which had hitherto remained elusive and problematic. Their plausibility to the reader hinges on whether he accepts the most fundamental paradigm for the evolution of different life forms and societal organization on our planet, Darwinian evolutionary theory, and on whether he is willing to apply that enormously successful model to our own species, or prefers to invoke an act of special creation for mankind.

['Race and Ethnicity: A Sociobiological Perspective', *Ethnic and Racial Studies*, 1/4