FOOD SHARING AND SOCIABILITY

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The distribution and consumption of food is tied to sociability. The sharing of food with others promotes sociability and flows from it as a consequence. One way to express affect between friends is to offer to share food. Food sharing implies intimacy. Extensive food sharing occurs with close friends and relatives and with those with whom one wants to increase intimacy. It is an integral part of courting of a potential mate or a sexual partner, and an avenue for reaching business associates. Food sharing and sociable consumption in celebrating rites of passage, in marriage, death, religious ceremonies, in entertaining foreign leaders, and in political campaigning supports and accelerates the growth of social adjustment and solidarity.

Although food appears to have a sociability function, there are species in which food has only a nutritive function. Imagine a pattern in which each human kept individual food supplies, and ate in isolation. Or think of a wedding celebration where the celebrants not only brought their own food and drink, individually, but also consumed it secretly and in private. In modern society, the consumption of alcohol is more readily accepted when consumed in social drinking, than when taken in solitude. The question is: "Since there are private methods of consuming food, why do humans share food and consume it socially?" The most immediate answer is: "Because it is more pleasant to do so," or "Because that is what many human cultures teach." In an evolutionary perspective, such answers provide only partial solutions. The next question is: "Why is it more pleasant, and why do human cultures teach food sociability?" We will examine an evolutionary answer.

EVOLUTION AND FOOD SOCIABILITY

Recently sociologists, anthropologists, and zoologists have begun to apply a neo-Darwinian solution to the study of human social behavior (Barrash 1977). The basic premise is that human social behavior, like human anatomy and physiology has some genetic basis, or proceeds as if it has such a basis, and is a part of evolutionary selection. The "as if" is important since the determination of actual evidence for or against the genetic basis of human social behavior is both difficult and controversial. Here, we come to the heart of evolutionary approaches to human social behavior and food sociability. We will consider how human food sharing may have evolved because of its benefits for survival, reproduction, and rearing of the young.

Assume that there are two types of humans. One type displays a social food sharing pattern, and they are called sharers. The other type eat in isolation, and are called isolates. Assume that whether a person is a sharer or an isolate is determined in part by a genetic mechanism, or one that functions as if it were genetic. Evolutionary theory suggests that if one of these two strategies yields greater fitness for survival, it is likely to be found in greater relative frequency in later generations. If the original ratio of sharers to isolates is 50: 50, and sharers receive more fitness benefits, their ratio should increase over the isolates.

The idea of fitness has a very specific meaning for evolutionists. A behavior produces greater fitness and adaptive value than an alternative strategy for the same problem, if it allows its bearers to produce more offspring, and to rear them to maturity. If the food use pattern of sharers allows them to better meet the problems and requirements of reproduction and rearing, then we say that the sharing pattern is more adaptive, and is more fit than the

isolate pattern. This is essentialy what Dawrin suggested.

More recent theory has added a new twist, implying that the basic unit of selection in evolution is not the group or species, or even the individual. It is the genetic unit. Darwin's type of fitness has been labeled individual fitness and the processes involved in it are individual selection. In addition, if an individual engages in behavior which does not benefit him directly, but rather, helps his relatives to reproduce and bear, such behavior may also be selected. If some individuals share much of their food with close relatives, it is possible that they may actually hurt their own fitness, but increase that of the relatives. The genetic fitness that accrues due to increased reproductive and rearing success of relatives is called kin component fitness, and the selection advantage of such fitness is called kin selection. The sum of individual and kin component fitness is called inclusive fitness. It is not assumed that individuals consciously desire individual and kin fitness, but they act as if they do.

The question of why humans share food becomes: "How might food sharing yield greater inclusive fitness than an isolate pattern?" In humans, the ratio of sharers to isolates is rather high, particularly in comparison to other primate species. Is it possible that sharing was selected in human evolution because of its benefits for inclusive fitness?

To avoid circularity and unfalsifiability of propositions, evolutionists make specific hypotheses which can be tested with empirical data. We will evaluate the evolutionary significance of food sharing by making specific predictions. If the social sharing of food contributes to inclusive fitness, one would expect certain patterns. Obviously, sharing with unrelated persons, and giving food away when one is starving are unlikely evolutionary patterns.

Although we began with observation of patterns in modern industrial societies evolutionary propositions are often tested in other contexts. Modern industrial adaptations are so new in the frame of human evolution that some theorists argue that inclusive fitness of human patterns which have evolved through almost 5 million years of human and hominid life cannot be found in industrial settings. Humans may behave in ways which are not particularly adaptive in industrial societies, but which would induce fitness in the hunter gatherer societies where humans have lived for all but the last 10,000 years. It is useful to compare humans with the primates with whom we share phylogenetic traits, and with social carnivores, which, as hunters, we share the same ecologic niche (Schaller & Lowther 1969). We will compare food patterns of human hunter gatherers with those of other animal species.

With whom should humans be willing to share food? To the extent that evolutionary success of behavior is influenced by kin selection, as well as individual selection, people should be more willing to share with close relatives than with more distant relatives.

The distribution of food seems to proceed along kinship lines in many hunter gatherer societies. In some groups, such as the !Kung, a person who is sick and cannot get food independently will get if from a close relative (Marshall 1976). Humans seem to give food to close relatives in a pattern of generalized reciprocity, without keeping accounts of who owes what to whom. More distant relatives and friends are treated with balanced reciprocity, where the return of equivalent benefit is expected. Finally, enemies are often accorded negative reciprocity, which means that the individual gets as much and gives as little as possible in return (Sahlins 1972). Similar patterns exist among carnivores such as wolves

or lions (Mech 1970; Bertram 1976). But non-human primates do not share food very much, even among close kin.

These results are problematic because it is unclear to what extent human social definitions of kinship actually parallel genetic relatedness. If social designations of kinship are constructed without any reference to genetic similarity, then sharing with social kin may not produce the fitness effects of genetic kin altruism. This is an open issue which is rarely investigated in preliterate societies (Keesing 1975).

An important contribution to the evolutionary theory of altruism would be to calculate genetic relatedness in various groups of humans and other animals to find whether greater genetic similarity is correlated with greater reciprocal resource sharing. Such estimates are rare, and Bertram's (1976) estimate of kin relatedness among lions in a pride, indicate that such analysis is difficult. Perhaps the best estimate for humans can be made in industrial societies where kinship definitions are closely tied to actual relatedness, and birth records are available for a documented check. The difficulty with evolutionary analysis of human social behavior is the dearth of appropriate data, and the expense of collecting new data.

ABILITY TO USE SHARED FOOD

A successful evolutionary strategy of food sharing is to give food to those who can put it to effective fitness use. It should be given to relatives who can produce and rear offspring. In one hunter gatherer group, the Hadza, food sharing is considered desirable, but is obligatory with respect to pregnant women (Woodburn 1968). Assuming at least a moderate level of relatedness in small hunter gatherer groups, giving food to pregnant women is a strategy which allocates resources where they can do the most reproductive good.

Another expected pattern is that sharing with those who have little potential for further reproduction, such as the aged, will be limited, at least under conditions of scarcity. While recent social movements in some modern societies have stressed the care and supportive treatment of the elderly, old people in many preliterate societies are less likely to receive food and other resources (Glascock & Feinman).

When food is sufficient, old people are more likely to receive it, since such sharing does not detract from food to be used by reproductively capable relatives. But when conditions are harsh, old people are unlikely to receive food. Thus, among Eskimos, old people receive more food in coastal communities, where food is more abundant, than in the harsher environments of inland settlements (Stefansson 1914).

Even when the environment exerts strong selection pressure, old people and others of low reproductive value may still receive food if they can give something in return. Where we confront the issue of reciprocal altruism (Trivers 1971). Kin altruism benefits a society's genetic future because the recipients are genetically similar, and can produce offspring who are genetically similar. If the recipient is either not genetically similar, or cannot produce and rear offspring, sharing resources is only beneficial if the recipient can offer something in return, to increase the donor's inclusive fitness.

Old men are less likely to receive food than old women in some preliterate societies. Old women can often aid younger people either in child care or in gathering, but old men do not make corresponding contributions to hunting (Marshall 1976). It seems that the skills which old men can offer are more limited by old age than are the skills of old women. Old age impairs hunting ability more

than gathering ability.

One ethnograph reports that while sons would willingly share food with their old mothers, they were more reluctant to share with their old fathers. It was also noted that older widowed women were prized as wives by younger men for their knowledge and skill in gathering. There was no mention of the participation of old men in hunting (Hart & Pilling 1960).

FOOD ACCESSIBILITY AND RELIABILITY When hunter gatherers share food in everyday situations, it is usually meat that is shared. The sharing of gathered vegetables, fruits, berries, and nuts is not a central feature of human food use. Although hunter gatherer societies have developed elaborate rules for the distribution of meat, the sharing of vegetable food is not so closely regulated. How does this pattern fit with the evolutionist's prediction for an adaptive pattern of food sharing?

First, we note that social carnivores, such as hyenas, lions, and wolves, share meat extensively (Kruuk 1972; Schaller 1972; Mech 1970). Animals that have succeeded in killing game will allow other members of their group to eat from the carcass. Some carnivores, such as wolves or wild dogs, will eat meat from a kill, and then travel to where the young are cached to share regurgitated food with both the young and those adults who have stayed with the young (Lawick Goodall 1965). It seems that the uniqueness of human food sharing among primate species relates to the fact that humans consume a much higher proportion of meat than other primates, who are almost exclusively vegetarian. Other primates eat mostly fruits and vegetables, which they consume individually, on the spot. In comparison, humans eat and share a moderate amount of meat, although not nearly as much as the social carnivore species. The factors of meat consumption that seem to be related to the evolutionary significance of human food sharing are accessibility and reliability. Vegetable food is relatively easy for most individuals to find, including the immature young. Meat is relatively inaccessable to human females and the young, and is marked by a limited success rate for adult male hunters. An evolutionary theory of food sharing would expect that food characterized by low reliability, sometimes caught by one individual, and sometimes by another, would be especially subject to food sharing. We would also expect food that is inaccessible to some individuals, but important to their nutritional health, to be especially prized as objects of food sharing. It is reasonable to predict that food of low accessibility and low reliability will be more extensively shared when food readily available and accessible.

Compare the situation of human hunter gatherers to that of nonhuman primates and social carnivores. The nonhuman primates eat food that is reliable, accessible to almost all, and easy to obtain through individual effort. The relatively small proportion of primate diet made up of game meat is much more likely to be shared with others, since it is rarely obtained.

On the other hand, social carnivores have almost dietary reliance on poorly accessible and unreliable food sources. Their eating activities are characterized by much social consumption and sharing of meat obtained at any given time by a few individuals. Species which consume food that is of limited accessibility and is unreliable as a supply, and which is best acquired though cooperative ventures, are most likely to share food.

Human hunter gatherers have a diet which falls between that of other primates and the social carnivores. Their food sharing behav-

ior is quite extensive overall, but is more developed concerning meat. Thus, it seems that a species which consumes both easily accessible and reliable food as well as foods more difficult to acquire, shows greater sharing. In modern human society, meat does not appear to be any more shared than vegetable foods. This pattern suggests that meat is not inherently inaccessable and unreliable. In hunter gatherer societies, meat is difficult to obtain. In more recent post-neolithic societies, both plant and animal species consumed by humans have been domesticated. The result is that meat has been made more accessible and its supply has become more reliable. Since meat and vegetable foods are about equally reliable and accessible, similar levels of sharing are predicted by evolutionary theory.

SOCIAL CONSUMPTION BENEFITS

While the sharing of food seems to have significant nutritional value, its social consumption appears to be of secondary importance. Why do we consume food together? It may be that such social consumption of food gives individuals the opportunity to determine what foods are safe. It may be a learning experience of special significance for the inexperienced young.

In human societies food sharing brings people closer together. This effect is perhaps due to the association of consumption with distribution of shared food. Social solidarity effects of eating bread and meat together may have emerged from the advantageous practice of sharing food.

The usual sociological explanation of sharing and other prosocial behaviors is that these behaviors are learned. Why are they learned so easily, and why do they occur in these patterns? While the learning paradigm is important to a social science understanding of social phenomena, the evolutionary approach can provide added insights by taking up questions which the more conventional learning paradigm fails to answer.

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