WHEN TO BEAR FALSE WITNESS: AN EVOLUTIONARY APPROACH TO THE SOCIAL CONTEXT OF HONESTY AND DECEIT AMONG COMMERCIAL FISHERS

by Craig T. Palmer

Abstract. This paper uses an evolutionary perspective to identify variables influencing compliance with moral codes about honest communication. Data on over one thousand radio conversations among lobster fishers in two harbors in Maine are compared in regard to the sharing of information. The sharing of accurate information is found to be significantly more frequent in the harbor that is more integrated by reciprocally altruistic relationships. This is consistent with the view that moral systems are systems of indirect reciprocity, but it also suggests that humans have evolved to base their compliance with moral codes on cues from their social environment.

Keywords: commercial fishing; communication; deceit; Maine; moral codes; reciprocal altruism.

Why does man, knowing what is right, so often choose to do what is wrong? Is not this the critical question?
—David Lack, "Natural Selection and Human Nature."

Secrecy, deceit, and other exceptions to open and honest communication are often the subject of religious and quasi-religious moral codes. These subjects have also become the subject of considerable analysis by evolutionary theorists.[1] This paper examines one particular question formed at the intersection of these two statements: Under what conditions do individuals conform to, or deviate from, moral injunctions against secrecy and deceit, and are these conditions compatible with modern evolutionary principles?

An attempt will be made to partially answer this question through

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an examination of differences in the sharing of information among lobster fishers fishing out of two harbors in the state of Maine. It will be suggested that differences in levels of secrecy and deceit in these two groups of lobster fishers correspond with differences in their two social environments in a manner that is consistent with Richard Alexander's theory about moral systems—that they are systems of indirect reciprocity (Alexander 1985, 1987).

Secrecy, Deceit, and Altruism in Evolutionary Perspective

Communication is a crucial part of the descendant-leaving strategies of many species (see Wilson 1975; Alcock 1989). The evolutionary fate of deceitful and secretive communication tactics has been the subject of much discussion. During the 1970s, one school of thought emphasized the selective advantages of honest communication (Zahavi 1977), while another emphasized the evolutionary benefits to be gained by "manipulating" con-specifics through deceit and secrecy (Dawkins and Krebs 1978).

More recent approaches have tended to find merit in both arguments and focused on the conditions that determine whether honest communication or deceit will be favored by natural selection. Among the conditions appearing to favor the evolution of honest communication are situations where organisms are long-lived and interact frequently (Axelrod and Hamilton 1981; Krebs and Dawkins 1984; Smith 1986). These conditions are likely to promote honest communication because they are conducive to the formation of reciprocally altruistic interactions between individuals (Trivers 1971). In such situations, exchanges of honest information will tend to be favored by natural selection because any short-term gains produced by deceit can be outweighed by the benefits of having honesty repaid in some way at a future time.

These findings are particularly relevant to human communication because humans exhibit unparalleled dependence on reciprocally altruistic interactions (see Alexander 1979). It has, however, proven impossible to account for the many examples of *indiscriminate* human altruistic behavior on the basis of only direct reciprocal altruism and the theory of kin selection (Hamilton 1964; Maynard Smith 1964; West Eberhard 1975; Taylor and McGuire 1988). This has led to an emphasis on "indirect reciprocity" in which rewards for altruistic acts are received from individuals other than the original recipient of the altruism. Among humans, the rewards are often deemed to come from society at large (see Alexander 1979, 1987).

INDIRECT RECIPROCITY AND MORAL SYSTEMS

The idea of indirect reciprocity has been used in attempts to account for the existence of many moral traditions that superficially appear to contradict evolutionary expectations. Some of these attempts (Campbell 1975, 1991; Boyd and Richerson 1985) have relied on the problematical principle of group selection (Williams 1966). Alexander (1985, 1987), on the other hand, has managed to put forth a theory of moral systems as systems of indirect reciprocity that conforms to accepted tenets of natural (or individual) selection. Although it has been criticized for neglecting the role of coercion by societal elites in the formulation of moral traditions (Irons 1991), Alexander's model provides a promising guide for studies of moral and immoral behavior, including honesty and deceit in human communication.

Alexander's theory is based on the idea that individuals living in large groups gained reproductive advantages as a result of successful competition with individuals living in smaller groups. Large groups, however, are hard to hold together due to internal competition often aligned along kinship lines (see Chagnon 1983). Traditional moral codes evolved because they promoted indirect reciprocity that helped hold large groups together. Although compatible with concepts of group selection, this hypothesis does not necessarily invoke a type of group selection, because indirect reciprocity enhances the inclusive fitness of individuals within the group, as well as extending the survival of the group itself.

The evolution of such moral systems of indirect reciprocity would require certain conditions. It is likely that "strategies of indirect reciprocity first evolved in communities in which people were able to observe the behavior of others in a wide range of contexts" (Irons 1991, 67; see also Alexander 1987; Campbell 1991; Burhoe 1986). Such a social environment would allow the use of altruistic acts to establish the "reputation" of a moral person. Such "reputation building worked to the reproductive advantage of the indiscriminate aid giver through the attraction of allies" (Irons 1991, 68). Although this theory seems plausible, it currently exists as largely a hypothetical construct and "an urgent task for researchers should be to seek ways to test this theory empirically" (Irons 1991, 71). One such test is to see if indiscriminate acts of altruism are more likely in certain social environments than in others.

Communication is a particularly appropriate subject for attempts to determine the factors that influence compliance with moral codes. Not only have honest and deceitful communications been the

subjects of considerable evolutionary analysis, but injunction against deceitful communication is a major part of many moral traditions. In his review of the moral teachings of religions throughout the world, Ronald Green states, "whatever their specific teachings, religions agree on the basic rules of morality. All . . . condemn deception" (Green 1988, 11). T.H. Huxley even stated that "the foundation of morality is to have done, once and for all, with lying" (Huxley 1896, 146).

Finally, and perhaps most importantly, it is common knowledge that these moral guidelines are not consistently followed. In regard to the moral tenet that the best practice is "honesty: the truth, the whole truth, and nothing but the truth," Alexander states "no one practices the above motto in everyday life" (Alexander 1987, 197). This leaves us with the key question, "how do individuals . . . make their decisions about what constitutes acceptable deviations from 'the whole truth and nothing but the truth' in different circumstances" (Alexander 1987, 198). In an attempt to partially answer this question, I examined variations in the honesty of communication among two groups of commercial lobster fishers in Maine.

Economic Reasons for Dishonest Communication Among Maine Lobster Fishers

Communication among Maine lobster fishers provides a chance to evaluate some of the potential causes of deviations "from the whole truth and nothing but the truth." Although individual differences in religious conviction exist, the vast majority of Maine lobster fishers have been raised within the Judeo-Christian tradition and its injunction against bearing "false witness" against your neighbor. For these fishers, however, this moral injunction is pitted against the economic realities of their profession, in which significant advantages are to be gained by engaging in secrecy and deceit with one's neighbors. Indeed, the "strategic management of information," including the use of lies and secrecy, is the "best weapon" in their pursuit of short-term economic goals (Lofgren 1972, 87).

The advantages to be gained by secrecy and deceit in lobster fishing result from various characteristics of this type of fishery. Usually all of the lobster fishers from a given harbor compete for the lobsters in a small territory, and most lobsters are caught shortly after reaching legal size (Wilson and Acheson 1980; Acheson 1975). Lobsters also tend to be both sedentary and concentrated in certain areas only, making information about their location particularly valuable (Wilson and Acheson 1980; Acheson 1988; Acheson, et al.

1980; Forman 1967; Stiles 1972; Stuster 1978; Orbach 1977; Gatewood 1984, 1987; Orth 1987; Martin and Lipfert 1985; Cordell 1978; McGoodwin 1990). In such a situation, an individual's success can be greatly increased by gaining knowledge of where and when others are successful, and one individual's success decreases the success of others. As a result, secrecy and deceit about where one finds concentrations of lobsters have significant short-term economic advantages.

One factor that can lessen the advantages to be gained by secrecy and deceit is the ability of competitors to verify the accuracy of information they receive from each other. The greater the chances of verification, the more open and honest the information sharing is expected to be (see Stiles 1972; Andersen 1973, 1979, 1980; Orbach 1977). Lobster fishers can often monitor each other's total daily success by observing the unloading of catches, but the dispersion of traps makes it difficult to tell exactly which specific locations are producing lobsters. Visual observation of trap movements allows only occasional verification of finer-grained information about the location of lobsters. There is also little possibility for verification to occur through "crew" interaction because inshore lobster fishers almost invariably work alone or with a single helper. All of these factors lead economic models to the conclusion that "it is in the trapper's self-interest to be secretive about [productive fishing] grounds" (Stuster 1978, 70).

It is generally felt that Maine lobster fishers act according to these expectations, as the "secretiveness of lobstermen . . . is legend all along the coast" (Wilson and Acheson 1980, 246; see also Acheson 1972, 1975; Stuster 1978). James Acheson states that there are, however, three exceptions to this general pattern of secretive or dishonest communication. The first occurs in communication between close kinsmen (Acheson 1988, 56; see also Gatewood 1984; Wilson and Acheson 1980; Martin 1979; Martin and Lipfert 1985; Forman 1967; Orbach 1977; Stuster 1978; Acheson and Lazarowitz 1980; Lazarowitz and Acheson 1980). The second involves a type of *direct* reciprocity where "the information they obtain in exchange is worth at least as much as what they are giving. In general, the fishermen can get accurate information only from those of approximately equal levels of skill" (Acheson 1988, 57). The last exception also involves direct, although delayed, reciprocity. It occurs when fishers who wish to become leaders of harbor gangs "advise young and sometimes less-skilled fishermen in an attempt to gain their loyalty" (Acheson 1988, 57).

There are two crucial aspects of all of these three exceptions to

secrecy and deceit. The first is that they are all explainable in normal economic terms, and in evolutionary terms using only the concepts of kin selection and *direct* reciprocal altruism, without recourse to moral systems of *indirect* reciprocity. This is because these instances of honest communication all have direct economic or evolutionary rewards, and "morality means going out on a limb, because it is right to do so. Morality vanishes if you hope for payment" (Ruse 1986, 105).

The second crucial aspect of all of these exceptions to secrecy and deceit is that none of them involve *indiscriminate* giving of information. This means they all require a medium of communication in which the information given can be privately received by a selected individual. This has important methodological implications because such "audience selection" is impossible in the public radio transmissions frequently used by Maine lobster fishers (see Ball 1968; Brown 1985; Andersen 1972, 1973, 1979, 1980, 1982; Stiles 1972; Andersen and Stiles 1973; Tunstall 1962; Orbach 1977; Stuster 1978; Gatewood 1984; Orth 1987; Byron 1988).

Hence, an amoral economic model would predict radio communication among lobster fishers to be dominated by secrecy or deceit in regard to the location of lobsters. Even an evolutionarily informed model based solely on the principles of kin selection and direct reciprocal altruism would generate the same prediction because radio communication involves the indiscriminate giving of information instead of the giving of information only to specific kinsmen or a reciprocal altruist.

METHODOLOGY

Previous informal observations about lobster fishers' radio communications indicate that short-term economic gains override moral injunctions when it comes to radio communication: "under no circumstances do they broadcast their success" (Wilson and Acheson 1980, 246). To test whether this was actually the case, I observed and coded over one thousand radio conversations among lobster fishers. To identify what factors might influence the frequency of exceptions to secrecy and deceit, conversations were observed and coded in two different harbors.

The two harbors, which I will refer to as "Middle Harbor" and "Southern Harbor," were chosen because of their very different social environments. Middle Harbor is a major tourist area and fishing port. It is located near the middle of the Maine coast in the area most extensively studied by Acheson (see Acheson 1975, 1988).

The lobster "gang" (see Acheson 1988) of Middle Harbor has a core of lobster fishers descended from a few families living in the area for generations. These fishers, however, now make up only a small portion of the harbor's fishers, as Middle Harbor is now used by over fifty full-time and over twenty-five part-time lobster fishers during the summer months. Many of these have recently moved into the area, and many of the part-timers are only present for a couple of months in the summer. These lobster fishers have also only been able to maintain a "nucleated territory" (see Acheson 1975, 1987), a territory much of which overlaps with the territories of one or more harbors located on the nearby peninsulas. Hence, Middle Harbor lobster fishers are competing with numerous strangers from both their own harbor and from neighboring harbors. Although the lobster fishers of each harbor typically use their own radio frequency, the frequencies of the other harbors are known, and the fishers often listen to them.

Southern Harbor, although it is located in the southern part of the state in an area surrounded by economic growth and tourism, remains a quiet fishing village where nearly all of the lobster fishers come from families that have been in the area from its beginning in the 1870s (see Palmer, 1989, 1990a, 1990b, 1991a, 1991b). Five lobster fishers in Southern Harbor have close relatives (first cousin or closer) who are also Southern Harbor lobster fishers, and there is also one pair of second cousins (see Palmer 1991b). Many of the full-time lobster fishers attended the same school system, belong to the same church, and are members of the same fraternal organizations.

Although their territory borders the territories of neighboring harbors, making expansion impossible, Southern Harbor fishers have maintained a nearly "perimeter-defended territory" with very little overlap with fishers from other harbors until well offshore (see Acheson 1975, 1987). Their ability to defend their perimeter is facilitated by the fact that this part of the Maine coast is relatively straight, which allows sufficient fishing areas in the waters surrounding the harbors, which are usually separated by five or ten miles. This is in contrast to the many peninsulas and inlets of the Middle Harbor area where territorial defense is difficult due to up-river and down-river competition for access to fishing areas outside the inlets (see Acheson 1975, 1987).

Although the numbers of traps per square mile of territory is lower in Southern Harbor than it is in Middle Harbor, much of Southern Harbor's territory consists of a sandy ocean bottom that is not inhabited by lobsters. Hence, the harvesting pressure on the

productive parts of the territories is approximately equal in the two harbors. There has also been little change in the number of lobster fishers in Southern Harbor over the past fifteen years. In 1989, there were fifteen full-time and thirteen part-time lobster fishers fishing out of Southern Harbor.

The social environments of Middle Harbor and Southern Harbor are different in regard to both the number of competitors in each harbor, the presence of competitors fishing out of neighboring harbors, and the extent and nature of the social relationships among the competitors. This means the two harbors differ in the extent to which people are "able to observe the behavior of others in a wide range of contexts" and, hence, in the advantages to be gained from attaining a reputation as a moral "indiscriminate aid giver" (Irons 1991 67–68). This difference should be crucial in radio communications, which are ostensibly between two individuals but to which all of the fishers in the area, actually listen because

> in using strategies of indirect reciprocity, mediated by reputation, the altruist must discriminate in terms of the probability that third parties will seek one out as an ally as a result of the enhancement of reputation. This probability has more to do with the characteristics of the social group the altruist is operating in than with the characteristics of the aid receiver. (Irons 1991, 68)

In an attempt to determine if lobster fishers are making such discriminations about their social environments, I accompanied a Middle Harbor lobster fisher and made observations of information sharing on sixteen occasions between 3 June and 11 September 1989. Observations of information sharing in Southern Harbor were made on forty-four days during the same period while I was employed as a sternman on a local lobster fishing boat. A total of 565 radio conversations were observed and coded in Middle Harbor. A total of 503 radio conversations were observed and coded in Southern Harbor.

The conversations were first divided into those that contained information about the location of lobsters (in the form of catch size reports) and those that did not. Reports containing information about the location of lobsters were further divided into positive and negative reports. Positive reports were of the greatest economic advantage to competitors because they were defined as reports indicating the presence of lobsters in numbers that were greater than the typical catches that had been occurring. Reports consisted of either the number of lobsters caught in an area, an average number of lobsters caught per trap, or customary qualitative expressions (see Lofgren 1972; Palmer 1990a, 1990b, 1991b).

TABLE 1

NUMBER OF EACH TYPE OF RADIO CONVERSATION IN SOUTHERN HARBOR AND MIDDLE HARBOR

	Noncatch	Negative Catch	Positive Catch	Total
Southern Harbor	279	172	52	503
Middle Harbor	503	51	11	565

(chi-square = 153.4 df 2, $p < .001$)

RESULTS

There was a striking difference in the patterns of information sharing in the two harbors (see table 1).

The vast majority of radio conversations in Middle Harbor supported the expectations of secrecy based on economic models. Only 62 (11 percent) of the 565 conversations coded in Middle Harbor contained any information on the location of lobsters. Further, despite the fact that catches were better than average during this period, only 11 (2 percent) of the 565 conversations contained positive information on concentrations of lobsters, and only 1 of these indicated the exact location of the lobsters. This conversation was between two relatively new lobster fishers and was interrupted by the following reprimand by one of the well-established lobster fishers in the Harbor: "I don't believe that for a minute; no one would say anything if they were catching lobsters like that!" The new lobster fishers did not finish their conversation.

The secretive nature of Middle Harbor radio conversations was also revealed when I asked a well-established lobster fisher if they shared information; he laughed and said, "You might with one or two [people], but everyone is too jealous to say anything over the radio." He also suggested that some lobster fishers may use secret codes, but I have no direct evidence for this.

This is in contrast to Southern Harbor, where 224 (45 percent) of the 503 conversations contained information on the location of lobsters, and 52 (10 percent) of the total conversations contained positive information (chi-square = 153.4 df 2, $p < .001$). Not only was the sharing of even positive information fairly common in Southern Harbor radio conversations, but positive reports also often included the precise location of the lobsters (see Palmer 1990a, 1990b, 1991b). While my ability to establish the accuracy of radio reports was limited, I observed several obvious lies in Middle

Harbor, while the reports in Southern Harbor tended to involve either accurate information or only mild forms of underreporting (see Palmer 1990a). The fact that the Southern Harbor lobster fisher I worked for made several trap movement decisions based solely on radio information supports the view that valuable information was being given over the radio in Southern Harbor (see Palmer 1990a).

Discussion: The Social Environment and Adherence to Moral Codes

The lobster fishers in Middle Harbor and Southern Harbor have similar religious backgrounds, with the majority in each area being Protestant. They can be assumed to have been subject to approximately equal socialization regarding religious and moral injunctions against secrecy and deceit. Both groups also pursue a livelihood in which deceit and secrecy are likely to have short-term economic benefits. Why then do they appear to respond in such different ways to the conflicting influences of economic short-term gain and moral tradition?

I suggest that the reason for the greater sharing of information in Southern Harbor is the fact that many Southern Harbor lobster fishers have a very high percentage of competitors who are also friends and neighbors. Middle Harbor lobster fishers may have a similar number of friends, but they have several times as many competitors with whom they have little or no social relationships. Even knowing the names of one's competitors requires considerable effort in Middle Harbor; this is in stark contrast to Southern Harbor, where most of the full-time lobster fishers have known each other since childhood. As a result, indiscriminate altruistic acts are much more likely to attract allies and, hence, have greater advantages in Southern Harbor than they would have in Middle Harbor.

I am not suggesting that the differences in adherence to moral codes regarding honest communication in the two harbors are necessarily leading to increased reproductive success at the present time. What I am suggesting is that the differences in communication reflect certain behavioral tendencies, or "psychological mechanisms" (see Symons 1987, 1989; Tooby and Cosmides 1989), that evolved to process certain types of information about the social environment when making decisions about communication and adherence to moral codes.

The view that moral codes could have evolved because they produced certain types of apparently altruistic behavior in groups where individuals could benefit from indirect reciprocity is consistent

with the view that religion may be the key to "transkin" altruism (Burhoe 1979, 1986; Hefner 1991). This paper also suggests, however, that humans evolved certain abilities to evaluate the specific nature of the social environment in their decisions to follow or disregard moral codes encouraging trans-kin altruism. This probably occurred because our ancestors frequently found themselves in social environments that differed in regard to the likelihood that indiscriminate altruism would be repaid by indirect reciprocity. Individuals lacking the ability to adjust their behavior to these varying social environments would have been at a decided reproductive disadvantage to individuals that could make such adjustments.

Individuals who transgressed moral codes in environments similar to Southern Harbor, where there are enduring social relationships among all of the groups members, would have probably had less descendant-leaving success than their moral neighbors. On the other hand, individuals who blindly followed moral codes and engaged in indiscriminate altruism in social environments similar to Middle Harbor, where there is relatively little benefit to establishing a moral reputation, would probably have had lower inclusive fitness than individuals who persued less altruistic tactics.

No attempt has been made in this paper to identify all of the aspects of the social environment likely to influence decisions over whether or not to adhere to moral codes. The findings of this paper do indicate that further search for such aspects is warranted, because at least some variations in social environments appear to influence such decisions. A further investigation into the exact influence of different social conditions is likely to provide much of the answer to both the question of when to bear false witness against your neighbor, and the general question of why people who know what is "right," so often do what is "wrong."

NOTES

1. For excellent summaries of modern evolutionary theories and their possible relevance to religion, refer to Burhoe (1979, 1986), Irons (1991), Wilson (1990), Lumsden (1989), and Campbell (1975, 1991).

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