

tions were changed. If data were collected from a number of different sites, the generality of the findings and the strength of the arguments would be increased. The restriction to one site (or similar sites) might partially account for the finding that some of the targets who were eating when approached also offered the panhandler some food. This observation would seem to be most likely on a college campus when college-aged confederates approached college-aged subjects.

It is certainly not unreasonable to assume that human behavior has evolved both socially and biologically to its present form (4). A danger in many discussions of the biological bases of behavior results from the amount of backtracking required. Changes in species fitness are not observed in one experimental session. Thus, one cannot, after demonstrating that human behavior is similar to that of nonhuman species on some dimension, infer that it must therefore be adaptive. Researchers must be aware that social behavior involves a complex interaction between organisms and the environment. With respect to the human species, social behavior is also characterized by a high degree of plasticity. Such plasticity allows the organism to adjust to environmental changes, which occur with varying degrees of rapidity. It is probably more reasonable to view adjustment, rather than individual types of behavior, as adaptive. To study how adaptive any given type of behavior is requires far greater control than that exercised by Lockard *et al.* It also requires a clearly elucidated statement of which processes will occur as a function of biologically determined factors and which will occur as a function of learned responses to environmental stimuli.

Despite its problems, this study should not be overlooked. It is an example of a good field-research technique. It also demonstrates that field studies of human beings can be designed so that they are comparable with field studies of other species. Repeating the study with an appropriate experimental design could provide clear data concerning the possible interaction between the panhandler's sex and the season. An extension of these basic findings would be provided by more carefully examining social customs under such conditions. Certainly, such modifications would not weaken the findings and would be consistent with many ethological investigations.

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No research project is all-encompassing; initial studies are usually conducted to establish a phenomenon for subsequent, more sophisticated investigation. The panhandling research by Lockard *et al.* (1) illustrates this systematic approach. A pilot study provided empirical credence to a hypothesis concerning resource sharing, and a more extensive second study ascertained the reliability of the preliminary findings. Replication is also an essential ingredient of science, as unique events are not amenable to further inquiry.

The main study used a balanced design to test possible sex differences in panhandling success. Taken alone, the data indicated that in autumn, females were more successful than males in acquiring 10 cents. In combination with the spring-time pilot study, in which the same male panhandlers were used, a possible seasonal difference in success rate was suggested. In neither study were the findings confounded; on the contrary, it was essential to use the same male panhandlers in both studies in order to reveal possible seasonal differences. Moreover, for Knowles to intimate that the data were confounded across studies is to misuse the statistical term, wherein simultaneity of two (or more) inseparable variables is implied. Also, the "experience" effect to which he refers is in a direction opposite to that which would be predicted: the male panhandlers were less successful in the second study (autumn) than in the first study (spring). The possible "sex-by-season-by-target-by-experience" interaction that he proposes is only apparent because of these initial studies, which have served well their intent, namely, providing ideas and direction for further research.

The discussion by Knowles of the cost-benefit ratio in donating to panhandlers affords an opportunity to expound on a research strategy which I have found fruitful for conducting human ethological studies, including the one on panhandling. Specifically, in spite of the fact that a donated dime is a small cost in

our society today and would probably not be viewed by the donor as either a great expenditure or as a great benefit to the recipient, the various target groups were differentially resistant to giving to a panhandler. The assumption of behavioral scientists that human behavior be "reasonable" has delayed, in part, actual observations of how people do behave. There has been considerable bias in studies on human behavior against distal explanations (for example, evolutionary and historical) since largely proximal questions (for example, situational and physiological) are asked. If social scientists were to take more seriously the organic component of the "... complex interaction between organisms and the environment" to which Knowles refers, they may find that distal explanations of many human social behaviors are low in face validity but high in construct validity (2). Distal and proximal explanations of the same behavior may often be superficially inconsonant with one another. It may well have been that a good portion of more recent human evolution has entailed deceiving the organism into increasing its fitness by providing proximal reasons (via cultural experiences and immediate physiology) which the organism can champion to explain why it behaves in certain ways. For example, to say "We eat because we are hungry" or "We take care of our children because we love them" are proximal reasons and may have little intuitive similarity to distal relationships (with which they are undoubtedly intimately correlated) of food availability and survival, or parental investment and reproductive success.

The salient points of the panhandling research are missed if the reader focuses mainly on situational interpretations of the data. The resistance of family groups to being panhandled and the importance of food consumption by the targets for successful panhandling are findings compatible with distal explanations such as kin selection. Although the panhandlers were college students, the target groups were not, and the panhandling was done at locations for the general public (not on a college campus), such as on street corners, at a zoo, and at a large outdoor recreational center.

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Panhandling as an Example of the Sharing of Resources

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