Letter from the Desk of David Challinor
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Thinking back to the 9/11 disaster that hit New York City in 2001, I have tried to sort out my own impressions of the actual incidents and the subsequent reactions of fellow citizens. Certainly the shocking image of the collapsing skyscrapers remains searingly vivid in the minds of all who witnessed it both *in situ* and pictorially. A contrasting memory, however, is surprisingly heartening—the vast outpouring of donations to the victims of the tragedy. So great was the monetary response that an elaborate dispersal formula had to be developed to equitably distribute the largess. This month's letter considers the altruistic aspect of human generosity. What makes humans so willing to assist others whom they have never met or are never likely to meet? An intriguing question: is there an evolutionary advantage to such generosity?

Until recently, behavioral scientists thought that vertebrates, and some invertebrates too, confined their helpful behavior to relatives. Such a limit to helpful action is evolutionarily logical because assisting individuals who share one's genes helps ensure the survival of one's own gene pool. Human motives for helping unrelated and unknown victims are evidently more complicated but, as I have often written, it is almost impossible for us to study and analyze, dispassionately, our own human behavior.

One theory proposes that such seemingly selfless acts as assisting a stranger is really just a way of promoting one's self-interest. Generous individuals like Ted Turner and Bill Gates are surely conscious of the favorable reputation gained from their philanthropy. Yet we are continually confronted by cooperative individuals who act anonymously and clearly are not motivated by personal gain. Perhaps these people, and there seem to be many of them, are truly altruistic—it is just part of their nature. Altruism has been sanctified in the Christian culture with the admonition "to love your neighbor as yourself." When Christ's preaching first advocated this behavior, it was a radical concept not readily accepted. Nonetheless, within Christianity the idea is graphically reinforced by parables like that of the Good Samaritan—the ideal good neighbor from a despised group. Although culturally encouraged, just how anchored is altruism in our respective psyches?

One way to test our willingness to cooperate and help others is through relatively simple games, one of which is called ultimatum. The psychologist in charge gives one player some cash, say $100.00. This participant is the "proposer" and is instructed to offer some percentage of it to the other player—the "receiver"—who is a stranger. The proposer can offer any amount from zero to the whole $100.00. The receiver can either accept or turn down the offer. If accepted, the money is shared according to the proposal; if rejected, neither party receives anything. They play the game only once.

Theoretically, the receiver should accept whatever is offered, then getting something for nothing, and the proposer should make a minimal offer to retain as much money as possible. The results from students playing this game over decades are surprising. Proposers have tended to offer 25% to 50%, while receivers tend to reject offers of less than 25%. According to one experimenter, receivers reject low offers because they perceive them to be unfair and evidently feel comfortable in punishing the proposer for stinginess, even at a monetary cost to themselves.

This kind of behavior is further demonstrated in various versions of the well-known Prisoner's Dilemma game, wherein two players can each gain if they cooperate, but there is also a strong incentive to cheat. Despite the reward from each cooperating, if one cheats and the other does not, the cheater acquires an even higher reward. In one experiment the players participated sequentially: one player would start, followed by the other, who knew whether the starter had cheated or cooperated. In theory, a player would always cheat because he/she would gain more but, surprisingly, about half of those who went second cooperated to be fair to the starter, despite giving up the larger reward that would have come from cheating. Thus there seems to be an inherent human tendency for many people to cooperate and to scorn those who do not, even when there is little or no gain.

Robert Trivers, a former Smithsonian Regents' Fellow now teaching evolutionary biology at Rutgers University, agrees that people frequently work against their own self-interest and that the experiments described above demonstrate the inherent human sense of justice. This behavior, however, presents a dilemma, because any organism that helps another at its own expense is at an evolutionary disadvantage and the selfish cheaters should eliminate them. Trivers has proposed that purely altruistic people might indeed be evolutionarily doomed, but the process, although continuous, is slow. He and other anthropologists believe that when humans developed to the stage where they lived in small mobile bands, they had to cooperate to survive. In other words, by helping others in the band, one might normally expect those assisted to reciprocate later on. This expectation of returning the favor is called reciprocal altruism, but is does not explain the altruism that surfaces when two strangers interact only once with no expectation of a future payback. Trivers thinks the benefits gained from reciprocal altruism provided an evolutionary advantage at an early stage of human development, but today it could be a maladaption. There are other examples of apparent maladaption in human behavior, of which perhaps the best known is sexual desire. Biologists generally accept the idea that such feelings developed to promote reproduction, yet most adults may experience the urge even when such a goal is patently impossible.

There are still, however, strong arguments against the idea that pure altruism is a maladaption. One researcher, Joseph Henrich of Emory University, thinks that both one-time helping actions as well as continual interactions were common in hunter-gatherer bands and people then, as now, could easily distinguish between the two. Other researchers tested this distinction by observing how students changed the way they played the prisoner's game by deciding either to cooperate or not on a one-time encounter as opposed to a multiple long-term condition. Thus if the players treated one-time

connections as they would long-term repeated ones—which supports the maladaption theory—then there should be no distinction in the two forms of altruism. However, by having the players keep repeating the game, they found that continual contact more than doubled the levels of cooperation. This would indicate that most individuals can indeed adapt behavior to current situations. Further, computer-simulated experiments found that benefits gained by cooperating within a group offset the costs to the participating individuals. It turns out that the advantages that resulted from cooperative behavior within the group had to be reinforced by punishing those members who failed to help the group's cooperative actions. The larger the group involved, the more incentives were needed to assure reciprocity. Thus in groups of several hundred people, reciprocal cooperation can be maintained if not only the cheaters are punished, but also those that fail to punish the cheaters. With this rather extreme approach, cooperation rates in large groups were 70 to 80%.

It seems to me that cooperation is essential to human survival, although it will long be argued whether true altruism is adaptive or maladaptive. Certainly within the Judeo-Christian culture its adherents are encouraged to be helpful to others even without any expectation of reward. As in Luke 6:35 "But love ye your enemies and do good, and lend, hoping for nothing again…" Finally, in the Old Testament, there is the wonderful quote from Ecclesiastes (11:1) "Cast thy bread upon the waters; for thou shall find it after many days." This is my favorite exhortation for it urges us just to go ahead and take whatever action we can to help people in distress no matter the cause. One's action should be voluntary with no expectation of pay-off. What I have experienced, however, is that "the bread" often comes back in the most unexpected and undreamed of ways—quite unrelated to any past altruistic acts and often long after the original good deed. It is the very unexpectedness of the return good that is so delightful.

We will probably never fully understand how we humans behave, but little by little researchers slowly gain new insights. However, embedded in the psyches of most of us, there really does seem to be a valid urge to help others. In this quality we can truly rejoice, but we must still be vigilant to keep our motives as pure as possible and be careful to do no harm to those we seek to help.

David Challinor
Phone: 202-633-4187
Fax: 202-673-4686
E-mail: ChallinorD@aol.com

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