

Final Project: Altruism or Just Showing Off

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The altruism theory suggests that a true altruist serves the interests of others even if it means sacrificing his beneficence. Some philosophers point out that altruism can provide benefits to the altruist, which is why some people choose to act generous in the first place. For example, one may get social prestige or recognition from the opposite sex by being nice. Three models of altruism have been developed to further explain altruism: group selection, kin selection, and reciprocal altruism. Some people believe that the reason for altruists being nice to others is mostly because they want to advertise themselves; some believe that altruists are just simply generous. In order to analyze altruism I choose two papers, one of them agrees with Zahavi's handicap principle, the other one agrees with the traditional models.

Before discussing altruism, it will be useful to provide some background information of the 3 models of altruism. The first one is group selection. Many biologists have used this model to explain altruism up until the 1960s (Zahavi, 1995). This model suggests that one invests in a group in order to make it a better group even if he does not get any direct benefit out of it (Zahavi, 1995). However, some people argue that group members who do not invest in the group still benefit as long as at least one person in the group invests. This argument makes the group selection model unstable.

The group selection model is later replaced by the kin selection model. This model suggests that one tends to invest in their relatives due to the similarity in genes. For example, risking one's life to save a drowning brother is worth it because one is trying to preserve gene similar to one's own for the following generations to come (Zahavi, 1995). However, this model is unstable, if as in the saving-brother-case, there is

more than one brother. Those who did not risk their lives to save that drowning brother would still get the same benefit as long as one of them save him. Therefore, the kin selection, like the group selection, has a weakness.

Because the group selection and kin selection both have weaknesses, another model was developed to replace them. The reciprocal altruism suggests that altruism works by reciprocity, and those who does not reciprocate will be punished (Zahavi, 1995). For example, people should punish social parasites. However, those that do not invest in the punishment still gain as much as those who honestly invest. This makes the reciprocal altruism as unstable as the other two models.

Supporting the tradition altruism models

Zahavi's handicap principle is widely applied to different areas: zoology, behavioral sciences, ecology, and many more. I found many papers agreeing with the handicap principle and only a few of them against it. It seems like animals, lower and higher classes, are all trying to advertise their high fitness even if this means to put themselves at risk. Among all the papers that I looked at, only a few of them talk about altruism that evolves via the traditional models.

The paper, "A Sex-Specific Affiliative Contact Behavior in Indian Ocean Bottlenose Dolphins", written by Richard Connor, Janet Mann, and Jana Capps, talks about why female bottlenose dolphins tend to do contact swimming with another female. Contact swimming requires two dolphins to cooperate and move in the same direction. This behavior is rarely seen in male dolphins. The original hypothesis of this paper is

that female dolphins get direct benefits from contact swimming, including reduction of harassment by male dolphins, locomotion assistance, and stress reduction (Connor, Mann & Capps, 2006). However, after the observation, researchers found that these might not be the only reasons.

Observation shows that two-thirds of the time, female dolphins do contact swimming in the presence of male dolphins. This behavior in female dolphins reminds me of the prisoner's dilemma example in the game theory. The prisoner's dilemma example shows that if both players cooperate, then they land on the Pareto optimal solution, which is the best solution for both players. If one player cooperates and the other one defects, then the one who cooperates gets the higher payoff than the one who defects. If both of the players choose to defect, then they end up getting a low payoff. In the case of female dolphins, the best way is to cooperate because this way, they could all benefit from the action. If one of them is being selfish and does not want to cooperate, it forces the other one to go partner up with another female dolphin. The one that is left then has the risk of being harassed by male dolphins. If neither of the female dolphins wants to cooperate, then they both get the worst payoff, like in the prisoner's dilemma example. One thing that this is different from the prisoner's dilemma example is that in the prisoner's dilemma, players do not get to communicate with each; the female dolphins in this case get to see what their opponent is doing.

Contact swimming between female dolphins thwarts male dolphin from harassment. This is like the reciprocal model that female dolphins are helping each other out by "standing up" to male dolphins. However, this might not be the only reason why

they do contact swimming because about one-third of the time, female dolphins are doing contact swimming even when male dolphins are not present. Other reasons for female dolphins to do contact swimming are that it helps female dolphins in locomotion and reduces stress when they are harassed by male dolphins. The paper also suggests that contacting swimming makes it easier for female dolphins when they are swimming in the slipstream (Connor, Mann & Capps, 2006). However, dolphins can still swim in the slipstream even without the help of others. This shows that dolphins are a very rational species. It is also observed that female dolphins assist in the locomotion of their offspring (Connor, Mann & Capps, 2006). Assisting offspring in locomotion increases the chance of having genes similar to her own in the following generation, which matches the kin selection model.

Supporting Zahavi's handicap principle

It seems like a lot of research shows that the costly acts of altruism bring some benefits to the actor. Among all the papers that cited Zahavi's paper, "Altruism as handicap – the limitations of kin selection and reciprocity", I choose one paper that supports Zahavi's handicap principle. It discusses the behaviors of hunters in their society. In addition, the paper, "Hadza meat sharing", written by Hawkes, Connell, and Jones, discusses why hunters are willing to share their meat with others.

Hunters who share their meat are seen as altruistic because they are willing to share something that they risked their lives to get. However, are they truly altruistic? A lot of the time, food sharers expect to receive a share of food in return in the future when they give up their meats (Hawkes, Connell, & Jones). It is like an unspoken rule that

those who accept meat at one time have an obligation to return their food at some point in the future. This situation puts the meat sharers in a very good position. A family can only eat a certain amount of meat at one time. Therefore, it is wise to share it with others because meat can easily turn bad. Since hunters are not always successful in catching their prey, food that they receive when they are not successful is worth more to him than the meat he gives away. Sharing food with other seems like a strategy, a strategy to ensure that the hunter himself and his family do not “starve to death” due to lack of food. It could also be thought as a way to protect their family.

The interaction between hunters is like a repeated sub-game. To simplify it, I only use two players to demonstrate, although in the real world, there are more than two players. Player one, hunter #1 in this case, has two choices and he gets to choose first. He could either choose to share his meats or not to share it. The second player, hunter #2, also has two the same two choices. If hunter #1 chooses not to share his meat with hunter #2, and hunter #2 also chooses not to share with him the next time he catches a “prey”, then their utilities would be (0,0). However, if hunter #2 chooses to share his meat with hunter #1 even if hunter #1 did not share food with him last time, then their utilities would be (5, 0). If hunter #1 chooses to share his meat at the beginning and hunter #2 does the same in return, then their utilities would be (5, 5). However, if hunter #2 chooses not to share even if hunter #1 shared with him last time, then their utilities would be (0, 5). There is two Nash equilibrium in this game (5, 5) and (1,1), where (5, 5) is the subgame-perfect equilibria, and (1, 1) is the subgame-imperfect equilibria. This game will be repeated for an infinite number of times because this is what hunters do unless they die or move to another area. Because this is a repeated game, (5, 5) is what the two

players would usually get assuming that both of them are rational. Although the utilities numbers are just my own assumptions, they help to explain how the hunters' interaction is similar to the sub-game theory.

Besides trading food for future benefit, the paper also suggests that there are other reasons for hunters to share carcasses. Some of the reasons are that they are doing this to advertise themselves so that they have a greater chance of mating, high social status and prestige. Evidence shows that women often name better hunters as better lovers, and that better hunters usually have more surviving children (Hawkes, Connell, & Jones). It is also observed that hunters that always bring back large carcasses and are willing to share their meat get higher respect in their social group (Hawkes, Connell, & Jones). All of these support Zahavi's handicap principle that a costly display by an individual is to advertise their fitness (Zahavi, 1995). The more risky the action is, the more benefits the actor can get. The peacock is a very typical example for Zahavi's handicap principle. A peacock's tail is very heavy; it can become a burden for a peacock when it is trying to escape from a predator. The way that a male peacock displays its tail is like saying to their predator: "Hey, I am still here". This risky act of the male peacock earns him more mating opportunities (Zahavi, 1995).

The paper about dolphins suggests that some female dolphins act according to the traditional altruism models, such as kin selection and reciprocal principle. The other paper uses research on hunters to show that human beings do risky actions because they want to advertise themselves. It might not be fair to compare humans with animals, but since dolphins are considered to be higher-class animals, I assume that they are rational. It is very important for a game player to act rationally because if not, then the situation

would be more complicated.

In the dolphins' case, female dolphins assist their offspring in locomotion. This reminds me of unconditional parental love. Although it is possible that female dolphins try to increase the chance of having similar genes to her own in the following generation, it is also possible that they just feel like they have an obligation to help their kids. This makes me realize that traditional altruism, and Zahavi's handicap principle cannot fully explain animal behaviors.

In the hunters' case, we assume that all the hunters are rational, and none of them aim to harm others. Because if they are not rational, they may choose to let meat turn bad rather than sharing it with their neighbors. We also assume that they all value social status. Because if they do not think social status is important, then hunters' families may just isolate themselves and not communicate with other families. This would make the argument that hunters are showing off by sharing their food not tenable.

I found it very hard to distinguish between altruism and just showing off in real life. For example, a person gives his life savings to his poor single brother to help him solve his financial problems. Some would say that this example fits the kin selection model, or some would say that this is simply a way to advertise oneself. There are actually four possible reasons for a person to do this. The first one is that the person gives up his life saving because he knows that his single brother would never have enough money to get married and have kids if he has a financial problem. Therefore, giving him the life savings would increase the chance of having genes similar to his own in the following generation. This explanation fits the kin selection model. The second explanation is that the person is just doing it purely to show off. He may just want to use

this chance to advertise himself in front of his family members, or friends in order to get high family status or mating chances, respectively. This fits Zahavi's handicap principle that one puts oneself at risk to show off fitness status (Zahavi, 1995). The third possibility is that this person acts according to the kin selection model, and wants to advertise himself at the same time. I believe that in today's society, altruism has evolved to the point that it is hard to distinguish between a true altruist and a "self-advertiser". Of course, there is also one last explanation for this; maybe this person just wants to help out his poor brother with no other intention. Consequently, people's actions may be simple sometimes, but we just think of them as more complicated than they really are.

Reference

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