

Chapter 5.03 Evolutionary Precursors to Morality

This chapter explains background points about evolution that we need before we can get to how religion and morality evolved. You will think of a few questions that are not answered here. To answer them would require too much more about how evolution works. See the Bibliography and see my other materials on the Internet.

About Evolution.

Genes are important in evolution but how they are important is too much to go into here. Think of genes as the bits of information that individuals carry that lead them to have features. Genes lead some individuals to have brown eyes and some blue, lead some birds to have longer wings than other birds of the same species, or lead some cows to be able to digest loco weed better than other cows.

The most important focus in evolution is the individual. We understand how evolution works by looking at the evolutionary success of individuals. We do not look at the species as a whole. We understand groups in terms of individual interactions. We do not assume that the group or the species can control individuals to make the individual do what is “best”. Individuals always do what is best for them. That is not usually narrowly selfish, as we will see.

The best way to think of evolutionary success is as long-term reproductive success. Successful individuals have the biggest families over many generations. Successful animals out-reproduce their fellows over the long run.

A feature is any aspect of an individual that can influence its success: height, weight, eye color, how well it digests starch, length of wings, length of beak, how well he-she speaks in council, etc. A feature is practical, or “well adapted”, if it leads to evolutionary success for individuals, if it leads to long-term reproductive success for individuals. That is what I meant by “practical” in previous chapters. Compared to brown hair, white hair is practical and adaptive for polar bears because it allows them to hide in the snow, eat more seals, and have more grandchildren.

Evolution is an automatic process, driven by reproduction. Some organisms that have a feature in a particular situation automatically out-reproduce other animals that do not have the feature, and so the animals with the feature automatically come to predominate. If a big bear is better than a small bear at finding food, staying warm, and reproducing, as in the cold north, then big bears automatically become the standard bear where they reproduce well. If a small bear is better at finding food, staying cool, and reproducing, as in the tropics, then automatically small bears become the normal type of bear there.

There is no best feature everywhere. There are only better features in particular situations. Natural selection through differential reproduction automatically selects what is a better feature in a particular situation. Sometimes big, fierce, fast, and cunning is best and so automatically becomes the norm – but not nearly as often as you might think. Sometimes small, cautious, slow, and straightforward works even better and so becomes the norm.

Evolution depends on competition. Natural selection by reproduction is competition. If robins with red breasts had not competed against robins with green breasts, and out-reproduced them, there would be no red breasts today. If robins had not competed with crows over the past few millions years, and won sometimes, there would no robins today. If coyotes and wolves did not compete, neither would be as they are now.

Evolution depends on comparative competition. It is not enough to just get by; you have to do better than your fellows of the same species. The most successful deer are not the ones who just live through the winter but the ones who live through the winter and are ready to breed next spring. The most successful eagles are not the ones who catch a few rabbits, but the ones who catch enough rabbits to feed many chicks well and so get all their chicks started quickly and surely on new families.

The importance of competition, especially comparative competition, can lead to situations that middle class Americans don't like, such as when male lions kill the cubs of rival males. It leads to "keeping up with the Joneses". Mostly, though, competition is not horribly ugly. Mostly it is a race for food, mates, and places to hide. The beauty of nature, and other benefits of evolution, could not have come without competition. Without competition, we would not have eagles, deer, tigers, and beautiful glowing but poisonous jellyfish.

Cooperation and group life are two of the benefits of competitive evolution. Some animals cooperate so as to better compete against other animals that do not cooperate. For example, ants cooperate to better compete against insects that do not. Wolves cooperate in packs to hunt large game and so compete against coyotes, which do not cooperate.

Morality evolved in the context of group life, which evolved because of competition. Odd as it might seem, we owe the presence of morality to some animals cooperating with each other to better compete against other non-cooperators, as we will see. The next few sections describe some processes in evolution that we need to understand to appreciate how competition leads to group life, cooperation, and morality.

Smearing Individuals Across Families: Inclusive Fitness and Kin Selection.

The terms "inclusive fitness" and "kin selection" have slightly different meanings but the difference is not important here. Here I describe what is common to both. Remember both terms in case you see them elsewhere.

Individuals are the most important focus when trying to figure out the evolution of any feature, including morality and religion, but they are not the only focus. The edges of individuals are not absolutely clear-cut. Individuals are "smeared" a bit among their kin because genes are shared among kin. The more closely related, the more that kin have genes in common. It is easy to see that what affects children also affects parents because children are the reproductive success of their parents. It is not too hard to see the same thing for grandchildren except that now we have two sets of two grandparents who indirectly share genes through grandchildren. Just as parents and children are linked, siblings are linked too because they share many genes in common; they all come from the same genetic origin. What happens to one brother affects his brothers and sisters, and vice versa.

In fact, a brother can succeed well enough in evolution without having any children of his own if he helps his siblings with their children. A person can succeed through nieces and nephews, because his nieces and nephews carry many of his genes, as old maid aunts and old bachelor uncles have done for a long time. It is harder to see that this effect spreads across all people that are related to each other such as third cousins and great grand nephews.

The key to detailed understanding is that people are not related to other people equally. The closer the kinship is between two people, the closer the potential success through another person. So the closer the kinship is, the more likely two people are to be concerned about each other and to help each other. Parents help children more than nieces or nephews, and siblings help other siblings more than they help cousins.

Sometimes quantity can overcome quality. Suppose a man can help six nieces and nephews go to college but can help only one childless sister with her medical problem. In that case, he is better off helping the many nieces and nephews. The arithmetic of these comparisons is not too hard in theory but in practice can get complicated, so I do not go into it here.

Competition is always comparative. Because people are smeared throughout families, the arena of competition and comparison is not only individuals but whole clusters of related individuals. People compete with, and compare themselves to, their peers not just as individuals but as whole sets of their kin to whole other sets of kin.

Families compare themselves to other families. If our family is doing about as well as the average, or better, then we feel good and we tend to keep doing what we are doing. If our family is not doing as well as the average, then we feel bad, and we seek something else. We can try to get our whole family to follow the lead of other families. This is really keeping up with the Joneses.

The idea of inclusive fitness does not lead to the idea that the group is more important than the individual or that the greater good of the group can override the needs and actions of particular individuals (except in the short run).

Inclusive fitness (kin selection) does force people to consider how their actions affect other people. It forces them to consider not just how their actions affect particular other individuals but whole groups of kin. It forces people to consider not just how one person affects other individuals or groups but how groups of kin affect other individuals and groups.

Inclusive fitness lays part of the foundation for group cohesion and for the evolution of morality. In loose terms, it gets animals to see themselves in others to think of their welfare as tied to the welfare of others, and to think that the welfare of them affects the welfare of others. Inclusive fitness gets animals to think in terms of their life in a group, how they affect others, how others affect them, and how they are all tied together. This is the start of "do unto others" and "applies equally to everybody". On the basis of inclusive fitness alone, animals would think only of their kin in these terms. Yet once the basis has been laid in terms of kin, it can be extended to lesser kin and even non-kin under the right conditions. In stereotypical terms, family life lays the foundation for group morality.

Commitment.

Evolving organisms strive to survive and reproduce over the long haul. Usually the best strategy is prudence tailored to the situation. It makes little sense for a house cat to chase a buffalo even if the buffalo might provide a thousand meals because the buffalo is likely to step on the house cat. Evolution is usually reasonable. Many emotions are prudent, such as fear of large animals with big teeth, and friendliness toward somebody who is friendly to us. Some emotions seem not so prudent, such as a burst of anger against a person twice our size. Moral sentiments often seem non-prudent or anti-prudent: if we saw that not stealing was in our strategic best interests then we would not need somebody to tell us not to steal. If we saw that telling the truth was in our strategic best interest then we would not need to be taught to tell the truth. So we need to think about how seemingly non-rational action could actually serve self-interest as well as can prudence.

Sometimes commitment seems irrational in the short run but it can help us in the long run if it does not kill us now. In the movies "The Seven Samurai", "The Magnificent Seven", and "The Thirteenth Warrior", poor villagers cannot stand any longer to be milked by bandits, even though the bandits leave the villagers enough to get by. So the villagers hire warriors to fight the bandits, and the villagers participate in the fight. The villagers have a lot to lose; but if they win, they are forever free of bandits, and so they have a lot to gain as well. During the preparations, the warriors make sure the villagers understand that they must be committed; there can be no wavering. Wavering does not mean return to the original condition, it means total defeat. In "The Thirteenth Warrior", the "hired swords" had to kill a villager to make the point.

Some emotions are the same way. As many a teen TV show has taught, standing up to a bully is scary, but, if you do, even if you do not win this fight, you are forever free of the bully and forever earned self-respect. If the bully knows you will fight, he-she also knows that sooner or later you will win the fight, and the bully backs off. Getting married means committing to one person and foregoing other people. Foregoing other people is a lot to lose, but sticking with one person means a better chance of raising a family and succeeding in the long run, and so is a lot to gain in exchange for what is lost. People that can commit despite the short term temptations do better overall.

Not stealing means to miss out on a lot of short-term opportunities but it also means to gain stability in our lives, loyalty from others, and friendship. A commitment to honesty might mean some short term loss but can mean greater long term benefit. The old adage "honesty is the best policy" is really true often enough. For a man, commitment to one wife might mean missing the chance to produce a few stray bastards, who might not even be your children, and who have poor chances to start their own families; but it also means a good chance to raise children, who likely are your own, and who have a good chance to grow up to start their own families. For a woman, commitment to one husband might mean missing the chance to get "good" genes from some passing hot stud. On the other negative hand, it also means having a few children that nobody will help you to raise, who likely will not survive to have their own families, and missing the protection of a man for you and your family. More positively, missing out on the stud in favor of a solid man means a good chance to have a husband who will help you raise your children by him, children who likely will survive to start their own families.

Commitment can be morally and practically good. Most morality requires a certain feeling of commitment. Most commitments produce a moral feeling.

Morality has other practical benefits than those that come through commitment but often it takes a minimum commitment to gain those other benefits. We need a sense that a charity is really committed to good works rather than administration before we donate. We need to be able to trust our fellow office workers when we leave our valuables in our cubicle. We sense the force of the commitment through the idea of “should” and “should not”.

Reciprocal Altruism.

“You cover my back and I'll cover yours; you scratch my back and I'll scratch yours; you give me some of your apples and I will give you some of my pecans; you give me some of your pecans now in the fall and I will give you some of my raspberries next spring”. “Reciprocal altruism” means to give something now in expectation of getting something else now or in expectation of getting something else later. The item exchanged can be physical such as an apple, or can be an act (service) such as covering my back. The exchanged “item” can even be a human, as when I give my daughter to your son for marriage. The return does not have to be the exact same kind of item. The values given and received should be about equal over the long run although the values do not have to be equal over the short run. This is what people think of as a neighborly relation or friendly relation. It is the relation that should hold among kin outside of the immediate family.

The term “reciprocal altruism” is a bit misleading because it does not necessarily involve what we think of as altruistic sacrifice. It means to trust someone enough to help them now when they need help in hope that he-she will help us later when we need help. The “altruism” refers to the fact that the payback is delayed, so we do not get something right away, so technically we give without receiving right away. In fact, we do receive eventually or we would end the relation and it would not be “reciprocal”. The “reciprocal” means that you do it for each other. A circular version of this relation has “A” help “B” who helps “C” who helps “D” who helps “E” who helps “A”, and potentially so on. The basic idea is still the same.

Many non-human animals engage in reciprocal altruism so reciprocal altruism does not necessarily need a sense of morality to carry on. When pack animals hunt, they engage in both helping kin and in reciprocal altruism. Sometimes animals sound warnings to indicate that a predator is near, and so endanger their lives to warn others. In doing so, they show reciprocal altruism and kin selection because they hope some other animal will do the same for them later when the other animals see the predator first, and the animal they help now might be kin. A crow cawing when it sees a man coming engages in reciprocal altruism with other crows. Sometimes tolerating other animals at a feeding site is a version of reciprocal altruism as when bears tolerate other bears on a stream during salmon run.

Reciprocal altruism builds a basis for morality because the delay between getting and receiving invites moral interpretation and moral rules. All parents teach their children to share now so that siblings will share with them later, and even to share with non-kin so that non-kin will share with them later. This is a moral feeling. The possibility that somebody might not give back after we have given, or might give us

less than we gave him-her, attunes us to cheating and the need for enforcement. This is a moral feeling too. Effects from reciprocal reciprocity and from inclusive fitness (kin selection) often go together.

Generalized Reciprocity.

Generalized reciprocity is a special kind of reciprocal altruism in which we give to (one or more members of) a group, and we do not expect to get a return necessarily from the particular person to whom we gave but can get a return from anybody in the group. We might get a return from that particular person but we do not have to as long as we get a return from some person in the group within a reasonable time. The trading cluster can be one group with a lot of members who trade among themselves, one person who trades with a whole group, two groups who trade among themselves, or a whole cluster of groups who trade among themselves. Often the group is a family. I had a school mate who lived across the street. If I helped anybody in Larry's family, I could expect help in return from anybody else in the whole family or from the family as a whole. Larry's closest friend in our family was my brother Dino. If anybody in Larry's family helped Dino or me, I could help anybody in Larry's family in return. Larry's whole family was in a good exchange relation not just with Dino but also with me and with my parents too.

Generalized reciprocity is common among people. It appears also in non-human animals that live in groups, such as monkeys, wolves, and birds; but it is not clear how common it is with them, and it is not clear if we can best understand exchange among them as true generalized reciprocity.

Generalized reciprocity is especially prone to cultivating morality. The biologist Richard Alexander (see readings) stressed this. We see connections within whole groups of individuals, and between whole groups. We see in terms of what we do, what they do in response, what we do in response, what they do again, and so on. When we trade generally within our group, everybody in our group becomes equivalent to everybody else. What applies to one person in our group applies to everybody almost equally. When we trade with another group, from our point of view, what applies to one person in that group applies equally to all people in their group; and, from their point of view, what applies to any one person in our group applies equally to all people in our group. Groups tend to become "generalized others". We think of everybody in a group as equivalent, so the group becomes one big person with whom we interact rather than a whole bunch of particulars. We think of the group as having a code, and we think of the group as enforcing the code on members. Reputation becomes a way of assessing individuals within our group and of assessing whole groups of other people. If one person in our group does a bad thing, other groups will think we are all bad. So we police all the people in our group because we don't want to suffer as a result of what somebody else in our group does. We expect other groups to do the same. If we can't police our group, nobody will exchange with us, and we will fall apart. If other groups can't police their members, nobody will trade with them, and we expect them to fall apart. If groups can police their members, then we think of them as especially moral, and want to exchange with them.

Selective Attachment Through Natural Selection.

People live a long time, have excellent memories, have extensive kin ties, have extensive interaction patterns that are based on kin ties, have friends and enemies, and have extensive interactions that are based on relations with friends and enemies. Acts of inclusive fitness include sharing, protecting, nurturing, teaching, guiding, cooperative hunting, help in conflicts, etc. People have the most extensive

reciprocal altruism in nature. Reciprocal altruism can include most of the same acts although not always to the same degree. Natural selection makes sure that people aim emotion, commitment, acts of inclusive fitness, and acts of reciprocal altruism toward the people and situations that best serve our evolutionary (reproductive) success. Natural selection makes sure we avoid showing emotion, commitment, acts of inclusive fitness, and acts of reciprocal altruism toward people and situations that do not help our evolutionary success or might hurt it. Natural selection fine tunes the degree to which we show emotion, commitment, acts of inclusive fitness, and reciprocal altruism so our actions help us as much as possible while hurting us as little as possible. These ideas have been verified in many well-done academic studies. These ideas apply to humans as well as non-humans.

Morality, Religion, Kin Selection, and Reciprocal Altruism.

Most books on the evolution of morality or religion see morality and religion as growing out of kin selection and reciprocal altruism. Exactly how is not always clear but maybe something like this: Kin selection and reciprocal altruism take individuals beyond themselves. They tie individuals together. Kin selection and reciprocal altruism require individuals to consider others. They require individuals to see that what individuals do to others can help individuals, and vice versa. Selfishness and isolation can work to some extent but they do not work as well as kin selection and reciprocal altruism. People have unusually large systems of kinship and reciprocal altruism. When people had to consider their kin, they naturally were led to consider their partners in reciprocal altruism. When people considered their kin and their partners in mutual altruism, they natural were led to consider a lot more people. Eventually people were led to consider everybody. Of course, people could not behave toward everybody as if he-she were kin or were a partner in reciprocal altruism, but the idea would extend outward anyway. The extension of the idea outward is morality. It is morality of a kind that works well with religion. When our ancestors found themselves living in groups (for whatever other reasons), kin selection and reciprocal altruism served as the basis for religion and morality to evolve. Various writers see different key triggers in the process, some stressing reputation, enforcement, pro-sociality, group hunting, fire, and various technologies. The sticking point is to figure out why people differ from other animals, and what triggered of the cumulative process for people alone.

All this is true, and kin selection and reciprocal altruism did play a big role in the evolution of religion and morality. Although most writers have correctly identified most of the ingredients in the mix, I do not think any writer has gotten the recipe quite right. As long as scientists think of morality is one thing and think of it in contrast to altruism, I think they will not be able to get the recipe right. To argue would take us too far off track. For here, we have most of what we need to know; the exact mix, exact process, and particular trigger do not matter. We do not need to know why people differ from other animals. We only need to know that religion, morality, and sentience evolved together in the context of group life, the above factors were important, and that it was a mutually supportive cumulative process. If other particular points become relevant later, I bring them in.

Mutually Beneficial Balances of Strategies.

Because of comparative competition, not all individuals can fully succeed at the same time. To live in groups, we have to compromise. Usually the benefit from living in a group exceeds the cost. Not everybody benefits equally. Because of the compromises, not everybody does as well as they possibly

ideally might have, not even the members who get the most. The group can still persist even though even though members can see how they might have done better in an ideal situation or might have done better if they had been at the top. Some members might be so dissatisfied, and suffer so much in group life, that they think they could do better outside the group. That might be true if they were not even more vulnerable to predation and starvation outside the group. Sometimes the group can persist when most members are satisfied with their success and the members who are not fully satisfied still have to put up with the situation because their alternative - ostracism, banishment, and failure - is even worse. In natural selection, the compromise is based on reproductive success – the measure of “currency” of the situation is reproductive success. Everybody gets to have at least a little reproductive success, or at least a reasonable chance at some reproductive success, even if reproductive success is rarely equal. Most of us have worked in offices, factories, or crews where the situation is the same but success is measured in money, status, power, privileges, and sometimes sexual access. In evolutionary life, those treasures are means to reproductive success. Many TV shows are based on the dynamics of strategic balance, such as the famous show “Dallas” or the modern “reality” TV versions such as “Survivor” and “Big Brother”.

Among social animals, a mutually beneficial balance of strategies is the basis for social organization. All the forces of group life described above play a part. Biologists explain the social organization of baboons, macaques, chimpanzees, bonobos (“pygmy” chimpanzees), gorillas, wolves, wild dogs, hyenas, lions, and many other animals in these terms. Among humans, the same was true while we still lived as hunter-gatherers. The same is still largely true among us now but the picture is complicated by the sheer complexity of human life and because humans go after intermediate goals such as money and power in themselves without obviously using those goods to go after reproductive success.

The features of the balance depend on the situation. This is a large field of study in itself, particularly in economics and political science, where academics use “game theory” as a tool for analysis.

Usually it takes a while to set up a new balance, as when a new high school opens up or a new type of business starts on a large scale in a new location. Once the balance is set up, people do not like to fool with it very much. Nearly all people lose during a transition period, and the amount they lose during the transition is likely to be more than they might gain in a new later balance. When somebody is sure to gain more than he-she loses during transition, then he-she might still stir the pot. That is also a theme on TV shows. When somebody important dies, the balance necessarily changes, and then turmoil often ensues as people vie to see who gets the best out of the new balance. That is the “back story” behind much real life dynastic history and behind the elaborate funerals and elaborate weddings of real life from poor people to dynasties. In the words of Louis Armstrong, to make sure the balance does not swing too far too fast, a person might arrange to have two valuable coins put on his-her eyes at his-her funeral “to show the boys I died standing pat”.

A mutually beneficial balance of strategies usually approaches the greatest total practical good that can be achieved in a situation even if it rarely achieves that goal. Any change is likely to result in a loss for many people, at least temporarily. Thus, a mutually beneficial balance of strategies takes on a moral tinge or even holy tinge. Finding it and keeping it are more than practical goals, they are moral goals. Rules that preserve it take on a moral character. People who disrupt it are cheaters and villains, or they are rebellious heroes who have overturned repression so as to instigate a new balance with new justice

for us. Along with kin selection and reciprocal altruism, a mutually beneficial balance of strategies is one of the forces to sustain the evolution of the capacity for morality.