

## EVOLUTIONARY THEORY AND ALTRUISM

Human beings (HBs) are biological beings. HBs are continuous with the animal kingdom, and all of life. Ethics must take this into account. An ethics that demands of HBs something that is biologically impossible is worth very little. If HBs were capable only of seeking their own interest, morality would be impossible; people would not be capable of seeking the moral good or the interests of others. (I am assuming here that ethical egoism is false—that morality requires us to take the welfare of others into account in some way.)

Any human capability, propensity, or attribute—whether mental, emotional, or otherwise psychological—must have, in some sense, a biological basis. That is, our biology must allow for this capability. But it is not biology that establishes the existence of these capabilities in the first place. Psychology, philosophy, sociology, and other social sciences establish what those human capabilities and propensities are. Once they are established, we know that our biology must allow for their possibility.

For example, any biological explanation of empathy, compassion, and altruism must accept that there is such a thing as empathy, compassion, and altruism. It cannot show that altruism is not really altruism (as, e.g., Dawkins book *The Selfish Gene* sometimes implies).

At the same time, human nature is also “plastic”. It is very influenced by social and cultural factors. Empathy, compassion, and altruism are influenced by social and cultural factors. Yet this fact of plasticity must have a biological basis that allows for social and cultural influence beyond merely biological tendencies or instincts.

**“Evolution”**: the idea that living species have evolved/changed throughout history. Current life forms may have not always existed, nor had the exact same characteristics that they have now.

**Mechanisms of evolution:**

(1) Natural selection (NS): see below

(2) *Other biological processes*: For example: (a) gene for some trait T is on the same chromosome as another gene that is being “selected for” by natural selection. So T will arise and be stable although not itself be “selected for.” (b) a particular trait is a developmental side effect of a gene selected for another reason [e.g. why blood is red]. (c) some mutations do not affect survivability or reproducibility either pro or con and so continue to survive without affecting “fitness” one way or the other. (d) since natural selection often takes place over a huge period of time, if you look at any given time slice, a particular population may be in the process of becoming highly adapted to their environment, but have not yet gotten there; and, conversely, another population may be in the process of heading toward extinction, so not be there yet. What this means is that any given moment, many populations of organisms will in no way be well-adapted to their environments.

(3) Keep in mind that *most* change among humans cannot be accounted for by either (1) or (2) but by “cultural evolution”—that is, historical, social, economic, political, and cultural factors.

**Natural selection (NS):**

1. Population P in environment E must have characteristics that allow it to survive and reproduce in E. (This is called “fitness.”)

2. Random mutation (“genetic drift”): Something internal to organisms randomly changes. Darwin did not know what this internal thing was, but knew it existed. We now know it is genetic structure.

3. Some random mutations make it easier for its carriers (P1s, a subset of P) to survive and reproduce in E; some mutations (P2s) make it harder.

4. The theory of natural selection says that the carriers of the “positive mutations” (P1s) will tend to outpopulate the rest of the original population P, over a long period of time. They will pass along their more “favorable” genes and those genes will then become more prevalent in P. The “unfavorable” gene group (P2s) will tend *not* to survive or to pass their genes along. Over time, P will change its character toward the P1s and away from the P2s.

### “Survival of the fittest:”

Sometimes natural selection is referred to by the expression “the survival of the fittest.” This expression, although occasionally used by Darwin himself, is misleading, or has been taken in a misleading direction (as De Waal says T.H. Huxley did). It is fine if it just means “Those who survive, survive”; then it is simply a tautology. But it is often taken to mean that nature involves a constant competitive struggle for survival among individual organisms, or groups of organisms, in which some always thrive by besting, or successfully fighting against, others. (It is a somewhat Hobbesian picture.) However, this is a very misleading way to think about natural selection; only occasionally does natural selection work like this.

A. Often the groups that survive the best in a given environment do so by individual members cooperating with each other rather than struggling against each other in a war of all against all. Kropotkin emphasized this point in *Mutual Aid*.

B. Some groups can survive by moving away from other stronger groups. Fighting/struggling is not always the optimal strategy.

C. The survival of the fittest idea has been used as the basis of a social philosophy, “Social Darwinism” (Herbert Spencer), that departed substantially but not totally from Darwin’s own ideas. This social philosophy essentially rationalized the inequalities generated by capitalism as being a “natural” product of competition taken to the socioeconomic realm, in which the richer are thought to be the most “fit,” the “stronger,” and the poor, the less “fit,” or “weaker.” Social Darwinism was also used to rationalize colonialism, as a natural subduing of the weaker subject populations of Asia and Africa by the naturally superior/stronger Europeans.

D. Against “optimizing” interpretation of NS: From the viewpoint of natural selection, P only needs to survive, not be the “best” at surviving. (Maybe humans could survive better if they had 3 eyes.)

### The “Unit of Selection” in Natural Selection

Natural selection tends to make organisms “fit” their environment over time; that is, to survive and reproduce in E. But how does NS operate on those organisms? To put it another way, what is the unit of organism that is “selected” in natural selection? Still controversy over this, but following are plausible:

1. the *individual* organism (e.g. a single cat, bird, bonobo, or human being)
  2. the *group* of a type of organism (a species of bird, or cat, or a virus)
- (Darwin thought natural selection sometimes operates on groups.)

**The problem of altruism:** If the unit of selection were solely the individual organism, it seems as if altruism, if understood as the sacrifice of an organism’s fitness for the enhanced fitness of another organism, is maladaptive, and altruists would disappear over time from any population in which they arose. Why? Suppose population P has 10% altruists (As). Over time, As will reproduce less well than non-A’s; so, fewer “altruist genes” will be passed on, and over time those altruist genes will diminish and ultimately disappear. Those with “selfish genes” will eventually become the entire population of P.

### Solution of the problem:

But if *groups* are a unit on which natural selection can operate, then altruism could be adaptive, since a group with altruists could do better (i.e. survive and reproduce) than a group without them. (Sort of like Kropotkin said.) Natural selection can operate on “groups” where groups are defined by interaction among members. Example from Unto Others of small fish forming into shape of large fish to chase away middle-sized fish. Authors of Unto Others argue that *both* individual and group selection are constantly going on simultaneously in nature. They argue that altruism could be adaptive at the group level but nonadaptive at the individual level. Take population P that has 20% “genetic altruists.” Within P, the % of genetic altruists might diminish with each successive generation because they are less “fit.” However, if they contribute sufficiently to the numerical growth of P through enhancing the capacity of P to survive as a whole, over time the *total number* of genetic altruists within P might increase, even though the % of genetic altruists in P decreases (because P grows by sufficient % through their altruism to more than offset the decrease in the % of genetic altruists).

Note that what is called “altruism” in evolutionary contexts is only a tiny fraction of what we ordinarily refer to as “altruism”. In most human contexts, help to others does not require a sacrifice of one’s longevity or ability to reproduce, nor does it ordinarily affect those factors in the persons helped. If I help you move into your apartment or give up my seat to an old person, this has no or negligible effect on my or the other person’s life or ability to reproduce.