



Can altruism be unified?



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ABSTRACT

There is clearly a plurality of forms of altruism. Classically, biological altruism is distinguished from psychological altruism. Recent discussions of altruism have attempted to distinguish even more forms of altruism. I will focus on three altruism concepts, biological altruism, psychological altruism, and helping altruism. The questions I am concerned with here are, first, *how should we understand these concepts?* and second, *what relationship do these concepts bear to one another?* In particular, is there an essence to altruism that unifies these concepts? I suggest that while there is no essence to altruism, this does not mean that the array of altruism concepts is completely disunified. Instead, I propose we place all the concepts into a common framework—an altruism space—that could lead to new questions about how this space can be filled.

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1. Introduction

'Altruism' clearly has diverse meanings. In discussions of altruism, many are careful to distinguish between biological (or evolutionary) altruism and psychological altruism. Biological altruism is often understood to center on fitness exchanges, whereas psychological altruism is based on intentions—an act is psychologically altruistic not because of the outcomes, but because of particular intentions of the actor. This distinction has become all but standard in the study of altruism (Sober & Wilson, 1998).

The psychological–biological distinction, however, does not appear to exhaust the range of varieties of altruism. The reason for this is that there are forms of altruism that are not clearly either biological or psychological in nature. Some instances of helping, for example, count as altruism independently of both the psychological mechanisms driving the behavior and their fitness consequences. Such 'helping altruism', as I will call it, is a genuinely distinct form of altruism.

In this essay, my goal is to clarify the taxonomy of altruism concepts and to consider whether this diversity merely constitutes distinct concepts loosely related and collected under the rubric of

altruism, or whether there is a deeper unity. I propose that while there is no essence to altruism, one can take what I suggest are the three central altruism concepts, render them as single scalar values, and construct a three-dimensional altruism space.¹ This space will open up new empirical questions about how the space can be filled and why particular regions are, or are expected to be, empty.

2. A taxonomy of altruism concepts

How many concepts of altruism are in circulation and what are their natures? This question, it turns out, is not an easy one to answer. The reason is that there is no standard array of altruism concepts and associated terms that can be relied upon to answer this. Instead, one must read the literature carefully to attempt to extract implied meanings in the various uses of 'altruism'. There has, however, been a recent attempt to do just that. Clavien and Chapuisat (2013) have identified what they take to be four distinct concepts of altruism. I will thus begin with their framework and modify it in several ways.

¹ Although his project is quite different, this is in the spirit of Godfrey-Smith's (2009) Darwinian space.

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2.1. Biological altruism

Let's begin with biological altruism, the concept of altruism tied to biological fitness. This form of altruism is also called evolutionary or, by Clavien and Chapuisat, reproductive altruism. None of these terms is entirely appropriate. While this form of altruism is linked to fitness/selection, it is a mistake to think that it is tied to just an individual's reproductive output: Measures of reproductive success such as lifetime reproductive success (LRS) can serve as imperfect proxies for fitness, but fitness can change without changes in LRS. To see how LRS can deviate from fitness, consider two types of individuals, where one type is disposed to reproduce earlier in their life history than the other, but they are otherwise identical in terms of their longevity, health, etc. Assuming that the organisms have overlapping generations (they are not, say, restricted to reproducing once each spring), the type that reproduces earlier in its life history will increase in proportion over time. This is true because over a given span of time, the early reproducing type will wedge in more generations and each individual of that type will, on average, have more descendants (assuming, of course, that there are no countervailing effects of early reproduction). The early reproducing type will thus be the fitter type of individual in spite of having the same LRS.

Just as LRS is too restrictive, tying biological altruism to evolution does not work either. The term 'evolutionary altruism' points correctly to the link between this form of altruism and core evolutionary concepts. But the dispositions to behave altruistically in the other senses discussed below are not somehow outside of evolution—they can certainly be evolved traits. A more appropriate term would be 'fitness altruism' or 'selection altruism' since fitness/selection are definitionally linked with this form of altruism. But because I hesitate to coin yet another synonym for this form of altruism, I will henceforth use what is perhaps the most common term, 'biological altruism'.

Clavien and Chapuisat define biological altruism thus: "A behaviour is altruistic if it increases other organisms' fitness and permanently decreases the actor's own fitness" (2013, p. 128). Similarly, [Sober and Wilson \(1998\)](#) hold that "A behavior is altruistic when it increases the fitness of others and decreases the fitness of the actor" (p. 17).² There are two things to notice about these definitions. First, they involve a loss to the actor and a benefit to the recipient(s)—it is not enough that the actor loses or that the recipient benefits, both must occur. Second, the fact that the actor relinquishes some of its fitness to boost the fitness of the recipient means that the fitness of individual organisms is something capable of changing as a result of these behaviors. Let's consider whether fitness can change in these ways.

If fitness is to causally explain evolutionary outcomes, then it cannot be equivalent to those outcomes. One way that philosophers have proposed to avoid the equation of fitness and outcome is to consider fitness to be a probabilistic propensity to produce offspring, not actual offspring produced ([Brandon, 1978](#); [Mills & Beatty, 1979](#)). A corollary of this view, or so argue [Ramsey \(2006\)](#) and [Abrams \(2009\)](#), is that the fitness value a particular organism has does not change from moment to moment. (Ramsey coined the term 'block fitness' for this understanding of fitness and I will

follow his nomenclature.) The block fitness concept has urged some to rethink the way that biological altruism should be understood ([Ramsey & Brandon, 2011](#)). The core idea is that organisms have particular fitness values, and that these values are based on their hereditary material, the environment that they are born into, the possible future states of this environment, and their possible interactions with it. If organismic fitness is a function of these properties, then it will be fixed over the life history of the individual. While it is true that the organism's health can fluctuate—it can become ill or remain healthy—its fitness does not fluctuate accordingly. Even ending up sterile does not lower one's fitness. Furthermore, while it is true that bearing viable offspring will raise an individual's realized fitness, it will not raise its fitness. Realized fitness is a tally of outcomes, whereas fitness is the weighted probability distribution over the possible outcomes.

For those who are skeptical of the block fitness idea, consider this analogy: If we have a coin and a coin-flipping device and we flip the coin a number of times, we can produce several interesting quantities: (1) the probability that the coin has of landing head up prior to being flipped, (2) the instantaneous probability of landing head up at each moment throughout the course of its flips, and (3) the number of times the coin lands head up. The last of these is what we can analogize with the realized fitness of the coin. It is the result of the coin's propensity, combined with the chance features of particular coin flips. These outcomes are not identical with the coin's chances of landing head up, but serve as evidence for it. The second of these quantities is neither realized fitness nor fitness, though is sometimes confused with the latter. If the world is fundamentally indeterministic, or if the probabilities are based on partial information, then the values for (2) can vary over the life of a coin flip. But such a quantity (an instantaneous probability) will be of little use for predicting or explaining or understanding the outcome of entire coin flips, though it could be useful in understanding some elements of the dynamics of coin flips. Like (3), it is an outcome—it is an outcome of the chance path that the coin has taken, combined with the coin's weighted possible future paths. Such a measure partway through the flip of a coin may provide a useful estimate for the probable fate of the coin, but it is not a good estimate for how the coin will do when flipped again, or what the outcome is likely to be from a large number of such flips. For estimates of this kind, we need quantity (1).

Quantity (1) is given by the properties of the coin (its symmetry, etc.) and the environment (whether it acts differentially with respect to each side of the coin). It does not fluctuate from moment to moment. The tallies of flip outcomes do, of course, change—they are ratcheted up over generations of coin flips. The first quantity, the probability of landing head up, is analogous to the block fitness of organisms. Like block fitness, it does not fluctuate from moment to moment. If a coin has a 0.5 probability of landing head up, this is true of the coin even if its instantaneous probability changes, and even if the coin is damaged or otherwise transformed during its flip (see [Ramsey, 2006](#) for a more extensive discussion of this point).

Quantity (1) is what is analogous to fitness. Just as the fitness of a coin is a function of the set of possible ways it can undergo its flip—and the associated probability-weighted outcomes—so is the fitness of organisms based on their possible life histories. And while fitness is based on the set of possibilities, realized fitness is based on the one life history that the organism realizes. If this is true, then biological altruism needs to be reconceived: Altruistic acts are no longer acts whose performance lowers the fitness of the actor and raises the fitness of the recipient. How then should we reconceive biological altruism?

A full explication and defense of a revised account of biological altruism is well beyond the scope of this paper, but what I will say here is this: Biological altruism should not be taken to be based on

² A further distinction can be made between biologically strong altruism and weak altruism. The strong variety requires a cost to the actor and benefit to the recipient(s), whereas the weak variety includes a benefit for the recipient(s) and a more modest benefit for the actor (see [Kerr, Godfrey-Smith, & Feldman, 2004](#) & [Wilson, 1990](#) for a discussion). Both strong and weak altruism thus require that the fitness benefit to others does not exceed a fitness benefit to the actor. Because of the relative unity of these concepts I will not further discuss weak altruism in this paper.

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