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Altruism, egoism, or neither: A cognitive-efficiency-based evolutionary biological perspective on helping behavior

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ABSTRACT

I argue for differences in the cognitive efficiency of different psychologies underlying helping behavior, and present an account of the adaptive pressures that result from these differences. Specifically, I argue that organisms often face pressure to move away from only being egoistically motivated to help: non-egoistic organisms are often able to determine how to help other organisms more quickly and with less recourse to costly cognitive resources like concentration and attention. Furthermore, I also argue that, while these pressures away from pure egoism can lead to the evolution of altruists, they can also lead to the evolution of reciprocation-focused behaviorist helpers or even of reflex-driven helpers (who are neither altruists nor egoists). In this way, I seek to broaden the set of considerations typically taken into account when assessing the evolution of the psychology of helping behavior—which tend to be restricted to matters of reliability—and also try to make clearer the role of evolutionary biological considerations in the discussion of this apparently straightforwardly psychological phenomenon.

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1. Introduction

What motivates an organism to help another is still an open question, despite being quite widely discussed (see e.g. Batson, 1991; Davidic, Piliavin, Schroeder, & Penner, 2006; Fehr & Gaechter, 2000; Nagel, 1970; Stich, Doris, & Roedder, 2010). Given this lack of a settled account of the psychological structures underwriting helping behavior, it is perhaps unsurprising that researchers have looked for new ways to investigate this issue. Among these new approaches is an evolutionary biological one: specifically, a number of authors have tried to assess the evolutionary pressures on different cognitive architectures with a view to their ability to lead to helping behavior (Sober & Wilson, 1998; see also Clavien & Chapuisat, 2013; Kitcher, 2011; Schulz, 2011a; Stich, 2007). It is this evolutionary biological take on the psychology of helping behavior that is the focus of this essay.

Specifically, I here argue that, in evolutionary biological investigations of the psychology of helping behavior, we ought to move away from just considering the *reliability* of different mind designs to lead organisms to help others—which is what the existing analyses have tended to concentrate on—and instead consider how *cognitively efficient* different mind designs are at helping others. In particular, I show that there is a certain kind of cognitive inefficiency that can characterize purely egoistically motivated organisms, and which can push populations of organisms away from featuring mostly purely egoistic helpers. This cognitive inefficiency stems from the fact that, as compared to non-egoistic helpers, egoistic helpers sometimes are bound to make helping decisions more slowly, and with more recourse to costly cognitive resources like concentration and attention.

The paper is structured as follows. In Section 2, I make clear how I propose to understand some of the key terms of the debate here, and set out the (somewhat modest) role I see evolutionary biology as playing in it. In Section 3, I discuss the existing, reliability-focused evolutionary biological analyses of the psychology of helping behavior. In Section 4, I present the core, cognitive-efficiency-based evolutionary argument against psychological

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egoism. An extreme case of this argument leading to completely non-representational helping decisions is presented in Section 5. I conclude in Section 6.

2. The psychology of helping behavior and the role of evolutionary biology in its investigation

In what follows, I understand an organism to be a *psychological altruist* if and only if it holds ultimate desires for the well being of other organisms, and a (pure) *psychological egoist* if and only if it holds ultimate desires for its own well being only (see also Sober & Wilson, 1998; Stich et al., 2010). A few points are important to note about this way of understanding altruism and egoism.[1]

Firstly, I here leave it open exactly what 'well being' consists in (Stich, 2007). The only assumption that I do make concerning this is that well being is at least correlated with fitness: increasing an organism's well being will tend to increase that organism's fitness (Brown, Wood, & Chater, 2012, 235–236). This assumption is quite uncontroversial, though, and is shared by most of the rest of the literature on this topic (see e.g. Buller, 2005; Sober & Wilson, 1998).

Secondly, psychological altruism and egoism as understood here can be easily situated within the currently popular two-systems models of the mind (Chaiken & Trope, 1999; Epstein, Lipson, Holstein, & Huh, 1992; Sloman, 1996; Stanovich & West, 2000).[2] Two-systems models of the mind comprise two parts: an associative, reflex-based system and a representationalist, deliberative system. While there are still many open questions concerning how to best characterize the two systems and their interrelations (Campbell & Kumar, 2012; Chaiken & Trope, 1999; Kahneman, 2003), for present purposes, it is enough to make the uncontroversial point that the two systems differ in how they generate the organism's behaviors.[3]

In the case of the reflex-based system ('system 1' in what follows), the action is the result of a mapping—i.e. a look-up table—between states of the world (as they are perceived by the organism) and actions. In other words, system 1-behaviors are to be seen as *reactions* to the perception of a state of the world, rather than as the result of a genuine practical inference (see also Schulz, 2013).

By contrast, in the case of the deliberative system ('system 2' in what follows), action generation is mediated by content-bearing—i.e. representational—mental states.[4] In particular, the organism is taken to form or have, on the one hand, representations about what the world is like ('beliefs') and, on the other, representations about what the world ought to be like ('desires'); it is then further taken to combine these to make a decision about what to do. Importantly, within this representational practical inference, a distinction between two kinds of desires can be made: *ultimate* and *instrumental* ones. While the exact details of this distinction are controversial (see e.g. Goldman, 1970), for present purposes, it is enough to see instrumental desires as resulting from a piece of deliberation based on other desires and beliefs, and ultimate desires as desires that an organism has that are not the result of this kind of deliberation (see also Stich, 2007). It is in this sense that the term 'ultimate desire' in the definitions of 'psychological altruism' and 'psychological egoism' is to be understood here.

Thirdly, as understood here, altruism is a pluralist mind design, while (pure) egoism is a monist one (Sober & Wilson, 1998). Altruism does not require that all of an organism's ultimate desires are for the well being of others; only that some of them are. Indeed, to the extent that an organism has desires at all, it is reasonable to assume that it has ultimate desires for increasing its own well being. What this further implies is that there will (sometimes) be a major difference between the altruist and the egoist in the way they make decisions about whether to help someone else (this will only sometimes be the case, as an organism need not be an altruist about helping everyone else). The egoist will always *reason* about this—she will decide whether to help by determining whether helping will contribute to her own well being. By contrast, the altruist will use a non-reasoning-based process to determine which of its ultimate goals to pursue: different situations will 'trigger' different ones of her ultimate desires to be the determinant of her actions. Since the altruist has more than one ultimate desire, the decision between the latter has to be based on a non-reasoning-based process. Figs. 1 and 2 illustrate this difference.

The fourth and final point to note concerning psychological altruism and egoism as understood here is that they are not exhaustive of the space of possibilities. In particular, there are two main ways in which an organism might be neither an altruist nor an egoist. On the one hand, an organism might be (partly) driven by ultimate desires that are neither for their own well being nor for that of some other organism. For example, an organism might have an ultimate desire to make works of art—which concerns neither the organism's own well being, nor that of other organisms' (though it might impact one or both of these), and so is neither altruistic nor egoistic. In what follows, I will call organisms of this type "behaviorist helpers". On the other hand, an organism might, in the relevant circumstances, be driven by reflexes only (Dickinson & Dyer, 1996; Grau, 2002; Kacelnik, 2012; Mackintosh, 1994). Since their behavior is not then based on ultimate desires at all, they are acting neither altruistically nor egoistically (even though the outcome of their behavior might well be an increase in their or some other organism's well being). In what follows, I will call organisms of this type "reflexive helpers".

With the content of the theses of psychological altruism and egoism thus clarified, it next needs to be noted that it is still controversial which organisms should be seen to be (pure) egoists, which altruists, and which behaviorist or reflexive helpers (Stich et al., 2010). It is for this reason that considering an evolutionary biological perspective might seem tempting here: it may offer a

[1] Note that other understandings of these notions are possible (Garson, in press). However, the ones in the text are the most widely accepted ones, and at any rate, I do not think that much of substance in this paper hangs on this particular characterization of the terms—with different characterizations, the arguments of this paper might have to be reformulated, but would remain substantively the same. Note also that this definition of egoism fits quite naturally to some recent work in evolutionary theory: for example, Grafen (1999) has argued that all organismic behaviors can be seen as the result of an organism maximizing its inclusive fitness. Finally, note that psychological altruism as defined here must not be conflated with *evolutionary altruism*: organismic traits that provide (relative or absolute) fitness benefits to other organisms (Okasha, 2006; Sober & Wilson, 1998). The latter raises different issues from the ones at stake here, and will not be discussed further in what follows. In line with this, all unqualified references to 'altruism' or 'egoism' in this paper should be taken to refer to the psychological varieties of these two theses only.

[2] Two-systems models of the mind—while not without their detractors (Glimcher, Dorris, & Bayer, 2005; Kruglanski & Gigerenzer, 2011)—are among the most widely accepted models of cognitive architecture currently in the literature, and have significant empirical and theoretical support (Epstein et al., 1992; Haidt, 2001; Kahneman, 2003; Stanovich & West, 2000). For this reason, the focus on them should not be seen as a greatly restrictive assumption. At any rate, none of the conclusions of this paper actually hang on the details of these models, and could also be formulated with reference to alternative models (such as the heuristics-focused view of Kruglanski & Gigerenzer, 2011).

[3] Note that it is also possible that both systems are active at the same time, and attempt to influence the organism's behavior (Greene, 2008; Haidt, 2001; Kahneman, 2003); fortunately, nothing in what follows concerns or depends on how these conflicts are resolved.

[4] While there is a lot of controversy over what it takes for a mental state to be content-bearing (Dretske, 1988; Fodor, 1990; Millikan, 1984, 2002; Papineau, 1987; Prinz, 2002), for present purposes, this can be left open.

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