



## Who volunteers in psychology experiments? An empirical review of prosocial motivation in volunteering

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### ABSTRACT

The central purpose of the present research is to provide a review of social value orientation (i.e., prosocial, individualistic, and competitive orientation), a construct measured with methods rooted in game theory (i.e., decomposed games). Also, we examine its ability to predict volunteering in psychology experiments. Consistent with hypotheses, Study 1 revealed that prosocials are more likely to volunteer in psychological experiments than do individualists and competitors. Study 2 replicated these findings, and revealed also that social value orientation was strongly linked to the academic study they chose. In particular, among psychology students, prosocials (57%) was the largest group, followed by individualists (37%), and only a few competitors (6%); in contrast, among economics students, individualists appeared largest (47%), followed by prosocials (36%), and still a fairly sizeable percentage of competitors (17%). It is concluded that psychologists and economists tend to rely on samples (from their participant pools) that may systematically differ in terms of motivation and beliefs that are associated with differences in prosociality, selfishness, and competition.

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### 1. Introduction

Who are the people who participate in our experiments? Presumably, most psychologists and economists who conduct experiments in their laboratories are interested in that question. Obviously, for those departments that have well-functioning participant pools, the answer is clear, at least at the surface – typically, in many psychology departments, the participant pool constitutes undergraduate psychology students, and in many economics departments, the participant pool constitutes economics students. And in departments that do not have well-functioning participant pools, students are often persuaded to participate in experiments by a combination of informing them about the information gains for science and society, and giving money in exchange for participation. We would suggest that even if we know that our sample consists of psychology or economics students, we still do not necessarily know who they are in terms of relative stable orientations that they bring to the laboratory. For example, is our samples representative in terms of dispositions such as considerateness, fairness, or trust? This is important, because such topics touch upon

the basics of human nature, which many scientists across differing disciplines study in the laboratory.

In a very influential article, *Sears (1986)* drew attention to potential influences of sampling college sophomores when testing social psychology's view of human nature. In particular, he outlined that compared to older adults, college students tend to have less-crystallized attitudes, stronger cognitive skills, and more unstable peer relationships. These differences were supported by empirical evidence. He also suggested that students may be more self-centered and less prosocial than older adults, a claim that was later supported in research (*Van Lange, Otten, De Bruin, & Joireman, 1997*).

The present research addresses the question “who volunteers in our experiments” by examining the association between individual differences in social value orientation (i.e., prosocial, individualistic, and competitive orientation) and tendencies to volunteer to participate in psychology experiments. We also examine whether these differences in social value orientation are associated with tendencies to choose psychology or economics as the primary major for study at the university.

Theoretically, the concept of social value orientation extends the “rational self-interest” postulate by assuming that individuals systematically differ in their interpersonal preferences, with some seeking to enhance joint outcomes and equality in outcomes (prosocial orientation), and others seeking to enhance their own outcomes in absolute terms (individualistic orientation) or

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comparative terms (competitive orientation, Van Lange, 1999). As such, the “beyond self-interest” assumption underlying social value orientation extends and complements much modeling and theorizing in economics and other disciplines (e.g., Fehr & Schmidt, 1999; Henrich et al., 2005; Mansbridge, 1990). Methodologically, the concept of social value orientation is rooted in the experimental game approach, assessing individuals’ preferences by a series of allocation tasks, or more precisely, a series of decomposed games, which represent outcomes for self and outcomes for another (cf. Messick & McClintock, 1968; Pruitt, 1967). As such, the “history” of the social value orientation concept is consistent with what is now often called “economic games”, presumably because the games involve money or are rooted in classic formulations of game theory (e.g., Luce & Raiffa, 1957; Von Neumann & Morgenstern, 1944). We discuss both issues in turn, as they speak to basic similarities and differences between much theorizing in psychology and classic economics.

## 2. Beyond self-interest

Theoretically, the concept of social value orientation is embedded in interdependence theory (Kelley & Thibaut, 1978; Rusbult & Van Lange, 2003), which emphasizes the idea that individuals evaluate actions not only in terms of the quality of one’s own outcomes but also in terms of the quality of another person’s outcomes. Prosocial orientation is defined in terms of enhancing own and others’ outcomes (i.e., maximizing joint outcomes, MaxJoint) as well as equality in outcomes (i.e., minimizing absolute differences in outcomes for self and another person, MinDiff); individualistic orientation is defined in terms of enhancing outcomes for self, and being largely indifferent to outcomes for another person (MaxOwn), and competitive orientation is defined in terms of enhancing the difference between outcomes for self and other in favor of themselves (i.e., maximizing relative outcomes, MaxRel; Kelley & Thibaut, 1978).

The concept of social value orientation is rooted in classic research on cooperation and competition, which revealed (largely unexpected, as noted by McClintock (1972) a good deal of within-individual consistency in behavior over a series of interactions and across situations. These considerations, as well as the aim of disentangling (or decomposing) interpersonal goals underlying behavior in experimental games, have inspired researchers to design a measure that is closely linked to game behavior (Messick & McClintock, 1968; Pruitt, 1967). Rather than focusing on a 2 by 2 matrix game, such as the Prisoner’s Dilemma Game, the instrument represents “decompositions” of game situations, capturing consequences of one’s behavior for oneself and another person. A frequently-used instrument is the Triple-Dominance Measure of Social Values (Van Lange et al., 1997; see also earlier research by Kuhlman & Marshello (1975); Messick & McClintock (1968)). In this instrument, outcomes are presented in terms of points said to be valuable to self and the other, and the other person is described as someone they do not know and that they will never knowingly meet in the future (in an effort to exclude the role of considerations relevant to the future interactions).

An example of a decomposed game is the choice among three options:

- (1) *Option A*: 480 points for self and 80 points for other.
- (2) *Option B*: 540 points for self and 280 points for other; and
- (3) *Option C*: 480 points for self and 480 points for other.

In this example, Option A represents the competitive choice, because it yields the greatest outcomes for self relative to the other ( $480 - 80 = 400$  points); Option B represents the individualistic

choice, because it yields the greatest absolute outcomes for self (540 points), and Option C represents the prosocial choice because it yields the greatest joint outcomes ( $480 + 480 = 960$ ) as well as the smallest absolute difference between outcomes for self and other ( $480 - 480 = 0$  points). Individuals are classified as either a prosocial, individualist, or competitor if they make at least six out of nine choices indicative of the same motive. Research using this instrument, reveals that most individuals are classified as prosocial (50–60%), followed by individualists (30–40%), while competitors is the smallest group (8–15%), although such percentages differ somewhat per sample (see Au & Kwong, 2004; Van Lange et al., 1997).

Consistent with earlier modeling and theorizing (McClintock, 1972; Messick & McClintock, 1968), research revealed that social value orientation exhibited considerable ability to predict actual behavior in a variety of different experiment games, with prosocials exhibiting greater cooperation than individualists and competitors (e.g., Balliet, Parks, & Joireman, 2009; McClintock & Liebrand, 1988). Moreover, social value orientations often exert their influence not only in terms of statistical main effects, but also in interaction with a number of variables, such as personality impressions of the partner, the behavioral strategy pursued by the interaction partner, and the features of the interdependence structure of the social dilemma (e.g., Kuhlman & Marshello, 1975; for a review, see Van Lange, De Cremer, Van Dijk, & Van Vugt, 2007b). Finally, within the realm of experimental games, social value orientation is associated with a number of cognitive processes, including the use of morality (good versus bad) versus competence (intelligent versus stupid, weak versus strong) in person judgment and impression formation (e.g., Liebrand, Jansen, Rijken, & Suhre, 1986), the priming of such constructs (e.g., Smeesters, Warlop, Van Avermaet, Corneille, & Yzerbyt, 2003), response latencies for making decisions in experimental games (Dehue, McClintock, & Liebrand, 1993), and evaluations of structural solutions to social dilemmas (e.g., Samuelson, 1993). We should note, however, that these personality differences reflect differences in the *probability* with which individuals adopt a prosocial, individualistic, or competitive orientation to new interaction partners. This conceptualization, referred to as slot-machine metaphor, explicitly acknowledges that there may also be quite powerful situational effects on social value orientation, including effects of priming, social norms, or demand characteristics. (for a discussion on the slot-machine metaphor, see Van Lange et al., 2007b; Van Lange & Joireman, 2008).

## 3. Beyond experimental games

Is there evidence in support of the predictive ability of social value orientation regarding behavior in situations other than experimental games or social dilemmas tasks administered in the laboratory? Research by Bem and Lord (1979) has revealed that prosocials, individualists, and competitors were described differently by their friends and roommates – for example, prosocials tended to be viewed as relatively more moralistic, fastidious, and concerned with philosophical problems. Moreover, there is research on judgments of commuting situations, revealing that prosocials tend to construe such situations in terms of collective welfare (environmental consequences; e.g., how much does the car versus train pollute the environment?) whereas individualists and competitors tend to construe such situations in terms of personal welfare (e.g., travel time e.g., Joireman, Van Lange, Kuhlman, Van Vugt, & Shelley, 1997; Van Vugt, Meertens, & Van Lange, 1995). Moreover, there is evidence that prosocials are more likely to donate money to noble causes, such as organizations aimed at helping the poor or the ill, than do individualists and competitors (Van Lange, Bekkers, Schuyt, & Van Vugt, 2007a).

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