

Chapter 2

A New Look at the Theory of Social Value Orientations: Prosocials Neither Maximize Joint Outcome nor Minimize Outcome Differences but Prefer Equal Outcomes

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Introduction

A friend of one of this chapter's authors once checked in at a conference hotel together with a colleague. The hotel was posh and expensive, but because the prices were heavily subsidized, both had made reservations for the best rooms ("class A"). However, something had gone wrong with the reservations. Only one of the best rooms was available, as well as one room with a somewhat lower standard, "class B," and a few rooms with a considerably lower standard, "class C." Given the subsidies, prices were the same irrespective of class, so there was clearly no incentive to choose anything but "class A." The question was, who should take "class A" and who "class B"? None of the colleagues was likely to turn hostile on the other, so more or less simultaneously they honestly said, "Pick whatever room you want." It was also clear that both wanted the nicer "class A." But it was equally clear that none wanted it at the other's expense. Hence, "class A" and "class B" lost their attraction, resulting in that both chose "class C."

Readers familiar with social value orientation theories know that irrespective of whether the friend and his colleague had an individualistic, a competitive, or a cooperative social value orientation, these theories would predict that they choose "class A" when given the opportunity and that no one chooses "class C." However, both chose "class C." Hence, current social value orientation theories cannot account for the outcome described.

The aim of this chapter is to present empirical evidence pointing out that current social value orientation theories need to be revised in order to better explain the behavior of cooperators, which both persons in the example above then and now consider themselves to be. The theoretical revision put forward herein emphasizes the importance of equality for prosocials. The choice of "class C" in the anecdotal example did not reflect a preference for a low standard, but for an *equal* standard.

Theories of Social Value Orientations

Theories of social value orientations (SVOs) (e.g., Kuhlman & Marshello, 1975; McClintock et al., 1973; Messick & McClintock, 1968; Van Lange, 1999; Van Lange & Kuhlman, 1994) propose that when people distribute something valuable between themselves and another person, their SVO makes them weigh outcomes to self and the other differently and to distribute the resource accordingly. Although people can have one of many possible SVOs, only a cooperative, competitive, or individualistic SVO is typically identified: Cooperators maximize the joint outcome to self and the other; competitors maximize the difference in outcomes to self and the other (i.e., the relative advantage); and individualists maximize outcome to self with little or no regard for the outcome to the other.

SVO was introduced to explain individual differences in cooperation in prisoner's dilemmas (and later in social dilemmas), which are situations where people make decisions between acting in their own interest, called *defection*, or in the collective interest, called *cooperation*. Thus, previous research has shown that people with a cooperative SVO (usually referred to as *prosocials*) more frequently cooperate in social dilemmas than do individuals with individualistic or competitive SVOs (usually referred to as *proselfs*) (e.g., Allison & Messick, 1990; Kramer et al., 1986; Liebrand, 1984; Van Lange & Liebrand, 1989). It has also been shown that a prosocial SVO increases helping behavior (McClintock & Allison, 1989), public transport choices (Van Vugt et al., 1995), willingness to sacrifice in close relationships (Van Lange et al., 1997), and concerns for multiple goals in organizational settings (Nauta et al., 2002) and increases integrative negotiation outcomes as well as affects the cognitive processes engaged by negotiation (De Dreu & Boles, 1998; De Dreu & Van Lange, 1995).

Different methods have been developed to assess SVOs (e.g., Grzelak et al., 1988; Liebrand & McClintock, 1988). The most common method is so-called decomposed games. One such method that distinguishes among the cooperative, competitive, and individualistic SVOs is the triple-dominance measure of social values (TDMSV) (e.g., Kuhlman & Marshello, 1975; Van Lange et al., 1997). In the TDMSV, participants make nine choices among three alternative allocations of valuable points to themselves and another unknown person. The individualistic alternative maximizes own outcome (e.g., 560 to self and 300 to the other), the cooperative alternative maximizes joint outcome (e.g., 500 to self and 500 to the other), and the competitive alternative maximizes own outcome relative to the other's outcome (e.g., 500 to self and 100 points to the other). To evoke feelings of interdependence, participants are asked to imagine that the other person is also confronted with the same nine choices, so that the total number of points that each obtains is determined by the choices both made. Participants who at least six times (66.7% of the choices) choose the alternative consistent with one of the three SVOs are classified as having this SVO.

In a recent meta-analysis (Au & Kwong, 2004) based on all published studies since 1973 using decomposed games as the assessment method, 57.4% of the

participants classified to any SVO chose the alternatives that maximize the joint outcome, 27.1% the alternatives that maximize their own outcome, and the remaining 15.5% the alternatives that maximize their own advantage relative to the other. The proportions of cooperators, individualists, and competitors can, to some extent, vary from study to study due to, for instance, cultural differences (see, e.g., Gärling, 1999, who observed a slightly different distribution in Sweden compared to the averaged distribution reported by Au & Kwong). Still, the distribution has been shown to be rather stable across different studies in multiple cultures (e.g., Van Lange & Kuhlman, 1994; Van Lange et al., 1997).

It seems uncontroversial that decomposed games assess individualists' and competitors' motives. However, since the TDMSV, used in the bulk of the previous research, fails to distinguish between the two motives of achieving equal outcomes and maximizing joint outcome, the relative stability of previous results does not rule out that prosocials' primary motive is the former rather than the latter.

An Alternative Equality Hypothesis

Little effort has been made to empirically investigate whether maximizing joint outcome or attaining equal outcomes to self and the other drives prosocials' choice of the cooperative alternative in decomposed games. In this vein, Van Lange (1999) noted that defining prosocials as individuals who maximize joint outcome may fail to explain their basic motive. Instead, he hypothesized that prosocials' motives are concerns for both joint outcome *and* equality. It is important to note that Van Lange (1999) regarded equality as synonymous to minimizing the difference in outcomes between self and the other. In contrast, we claim in this chapter that *equal outcomes* is prosocials' dominant, perhaps only, motive.

Our claim that prosocials' motive is equal outcomes is related to a recurrent finding in previous research that people prefer equal distributions of outcomes in interdependence situations (e.g., Allison & Messick, 1990; Messick, 1993, 1995; Messick & Schell, 1992). For instance, numerous studies on resource dilemmas show that people prefer to take equally much from common resources (e.g., Rapoport et al., 1992). Similarly, McClelland and Rohrbaugh (1978; cited in Messick, 1993) found that participants even preferred equal outcomes to larger, but unequally distributed, outcomes. In line with this previous research, it is concluded that the dominance of equal outcomes among prosocials may reflect an equality or fairness motive (e.g., Loewenstein et al., 1989; Van Dijk & Wilke, 1995) that is similar to the demonstration of a reciprocal motive (e.g., Gallucci & Perugini, 2000, 2003). Thus, in many situations, for instance, in social dilemmas (e.g., Eek & Biel, 2003) and in negotiations (Kristensen, 2000), people act in line with what they consider to be fair. Consequently, in circumstances either where there are no individual differences in abilities, efforts, or needs (e.g., Rapoport et al., 1992; Rutte et al., 1987), or when such differences are unknown (Van Dijk & Grodzka, 1992), equality is generally considered the fairest principle for outcome distributions

(e.g., Messick & Sentis, 1979). This should be contrasted to some other research (e.g., Allison et al., 1992; Allison & Messick, 1990; Harris & Joyce, 1980; Messick & Schell, 1992) demonstrating that equality is a simplifying heuristic for distributing resources when there is a high degree of uncertainty.

The instructions to participants completing the TDMSV convey no information concerning, for instance, whether there are differences between self and the other. The research reviewed above then seems to predict that an equal-division rule is what most people would consider to be the fairest distribution. In addition, it is less plausible that prosocials maximize the joint outcome or merely minimize the difference in outcomes given that there is no other evidence in previous research suggesting that people hold such motives in interdependence situations.

In several studies (e.g., Eek & Gärling, 2006) that will be briefly reviewed below, we pitted the proposed equality hypothesis against the joint-outcome hypothesis. Generally, strong support was obtained for the former hypothesis. As a matter of fact, maximizing joint outcome was not even chosen as the second most preferred distribution by prosocials. Instead, maximizing own outcome (a clear proself motive) was the second best. Thus, these results contradict the argument by Van Lange (1999) that prosocials in the TDMSV are motivated both to maximize joint outcomes and to minimize the differences in outcomes. In an additional study reported in Eek and Gärling (2005), also reviewed below, the equality hypothesis was pitted against a minimizing-difference hypothesis. It is argued, and shown, that prosocials only want to minimize differences in outcomes when this leads to equal outcomes. If not, their choices will not differ from choices made by proselfs. Similar results were obtained by Cunha (1982; cited in Kuhlman et al., 1986), who found that prosocials in two-choice tasks preferred to maximize their own gain (e.g., 9 to self and 5 to the other) to minimizing outcome differences (e.g., 8 to self and 6 to the other). Note that the joint outcome was held constant by Cunha since the expectation was that joint-outcome maximization was the core motive for prosocials. Still, it was also noted that prosocials' behavior in other tasks than decomposed games (e.g., the prisoner's dilemma game) cannot be understood if their core motive is to maximize the joint outcome.

Empirical Evidence in Support of the Equality Hypothesis

Do Prosocials Maximize Joint Outcomes?

The SVO theory thus posits that proselfs' motives are either to maximize the outcome to self (individualists) or to maximize the relative advantage over the other (competitors). Similarly, prosocials' motive is twofold: first and foremost, a preference for maximizing the joint outcome (e.g., Messick & McClintock, 1968), and second, to minimize the differences in outcomes (e.g., Van Lange, 1999).

In Study 1 in Eek and Gärling (2006), a questionnaire was administered that consisted of an extended version of the TDMSV. Standard TDMSV instructions

were given to the participants indicating that numbers to be distributed represented valuable points and that the other person was someone they had never met and did not expect to meet in the future. The extension consisted of increasing the number of choices from 9 to 12 and adding a fourth alternative to each choice set. The added alternative maximized the joint outcome for an unequal distribution between self and the other. An example is

	A	B	C	D
Own outcome	560	500	500	500
Other's outcome	300	100	500	800

Alternatives A, B, and C are adopted from the original TDMSV. A is the individualistic alternative, B the competitive alternative, and C the cooperative alternative. In the extended TDMSV, alternative D maximized the joint outcome.

Participants were instructed to rank-order the alternatives A, B, C, and D based on how attractive they found them. They were then classified as belonging to one of the SVOs if they consistently rank-ordered first one of the four alternatives in at least 8 of the 12 choices (66.7%). The same classification was used for participants' second, third, and fourth rank orders. Thus, the extended TDMSV allowed classification of participants' first, second, third, and fourth motives. The terms *equal-outcome prosocials* and *joint-outcome prosocials* were introduced to distinguish prosocials who preferred equality (alternative C in the example above) from those who preferred to maximize the joint outcome (alternative D).

If prosocials' motive is to maximize the joint outcome, as suggested by SVO theory, no participants should be classified as equal-outcome prosocials on the basis of their first rank orders. Instead, based on the meta-analysis by Au and Kwong (2004), between 55% and 60% of the participants should be classified as joint-outcome prosocials, between 25% and 30% as individualists, and between 10% and 20% as competitors. Furthermore, should the alternative conjecture be correct that prosocials have the two motives of maximizing joint outcome and minimizing outcome differences (Van Lange, 1999), participants classified as joint-outcome prosocials on the basis of their first rank orders should be classified as equal-outcome prosocials on the basis of their second rank orders, or vice versa.

The results for the 48 participants who produced consistent rank orders, allowing a classification into SVOs, showed strong support for the equality hypothesis. On the basis of their first rank orders, 40% of participants were classified as equal-outcome prosocials, 43% as individualists, and 17% as competitors. Since no participant was classified as a joint-outcome prosocial, the results suggested that prosocials assessed by the TDMSV primarily prefer equality to maximizing the joint outcome.

An important additional question asks whether participants' secondary SVO is predicted by the SVO theory. For individualists and competitors, this was clearly the case. Their rank orders were predicted by the assumption in SVO theory (e.g., Messick & McClintock, 1968; Van Lange, 1999) that they have a single motive.

Individualists were indifferent in their second, third, and fourth preferences, as should be expected since individualists only focus on the outcome to self, and alternatives B, C, and D render self the same number of points. According to the theory, competitors should be classified as individualists on the basis of their second preference, as equal-outcome prosocials on the basis of their third preference, and as joint-outcome prosocials on the basis of their fourth preference. All of the competitors rank-ordered the alternatives accordingly. However, the theory did not predict the second preference for prosocials in that only 21% of the equal-outcome prosocials were classified as joint-outcome prosocials on the basis of the second preference and the remaining 79% as individualists. In fact, more than half of the equal-outcome prosocials regarded maximizing joint outcome as the worst among the four alternatives.

The results of Study 1 clearly demonstrate that it is incorrect to regard prosocials' motive as a desire to maximize the joint outcome. However, one could object to this conclusion by arguing that prosocials did not want to receive less than the other and that they therefore preferred the alternative that provided both with equal outcomes instead of maximizing the joint outcome. Thus, prosocials may still prefer to maximize the joint outcome if they do not receive less than the other.

Study 2 in Eek and Gärling (2006) aimed at corroborating that prosocials' preference for equality is a convincing explanation of the results of Study 1. More specifically, three questions were addressed: (1) Would prosocials prefer to maximize the joint outcome if they did not receive less than the other? (2) Would prosocials still prefer equality if they themselves could receive more points without the other person's receiving less? (3) If so, would prosocials still prefer equality even though both self and the other could get higher but unequal outcomes?

Fifty-one participants' SVOs were first classified using the standard TDMSV. Subsequently, the participants were asked to complete some unrelated filler tasks before rank-ordering three alternative distributions of points between self and the other. In each of 24 tasks, two alternatives rendered equal outcomes to self and the other, and a third alternative maximized the joint outcome with unequal outcomes. An example is

	A	B	C
Own outcome	600	700/600	500
Other's outcome	600	600/700	500

For half of the tasks, self was in the advantageous position and received more points in the joint-outcome alternative (B). For the other half of the tasks, self was in the disadvantageous position. The hypothesis was that prosocials and proselves would rank-order the three distributions differently. Proselfs were expected to maximize their own outcome and, therefore, in the example, rank-order alternative B first, alternative A second, and alternative C third. Prosocials would rank-order the alternatives in the same way as proselves if they preferred to maximize the joint

outcome. If, however, they preferred equality, in the example they would rank-order alternative A first, alternative C second, and alternative B third. It was thus not hypothesized that prosocials would be indifferent between alternatives A and C. They were also expected to prefer a larger to a lesser share, as long as it was distributed equally (cf. Van Lange, 1999).

When the outcomes in the joint-outcome alternative were reversed so that self was in the disadvantageous position, prosocials were expected to be indifferent between alternatives A and B but rank-order alternative C third. In contrast, according to the equality hypothesis, prosocials' rank orders were not expected to differ depending on whether self was in the advantageous or disadvantageous position.

The results were based on 23 participants who were classified as prosocials and 23 who were classified as prosocials (very few were classified as competitors, and since individualists alone were regarded as a sufficient comparison group to prosocials, only the results for individualists were analyzed). Table 2.1 shows participants' mean rank orders of the three distributions related to SVO and whether self or the other is in the advantageous position in the joint-outcome alternatives. Large numbers correspond to high attractiveness. As the results clearly show, prosocials did not prefer to maximize the joint outcome even when they received more than the other. In fact, they rank-ordered Equality-high (A) as more attractive than Joint-outcome (B), both when self and when the other was in the advantageous position. Furthermore, irrespective of whether self or the other was in the advantageous position, prosocials also rank-ordered Equality-low (C) as more attractive than

Table 2.1 Mean Rank Orders of Three Distributions Related to Advantageous Position and Social Value Orientation (1 = least attractive, 3 = most attractive)

Distribution ¹	Advantageous Position ²	Social Value Orientation			
		Prosocial (<i>n</i> = 23)		Proself (<i>n</i> = 23)	
		<i>M</i>	<i>Sd</i>	<i>M</i>	<i>Sd</i>
Equality-high	Self	2.72	0.43	2.00	0.02
	Other	2.78	0.34	2.61	0.47
Equality-low	Self	1.71	0.44	1.01	0.03
	Other	1.69	0.40	1.61	0.50
Joint-outcome	Self	1.57	0.87	2.99	0.04
	Other	1.53	0.72	1.78	0.97

¹Equality-high refers to alternatives that provide self and the other with most points distributed equally. Equality-low refers to alternatives that provide self and the other with least points distributed equally. Joint-outcome refers to alternatives that provide self and the other with most points distributed unequally.

²Self refers to joint-outcome alternatives where self receives more points than the other. Other refers to joint-outcome alternatives where the other receives more points than self.

Joint-outcome. Finally, prosocials rank-ordered Equality-high as more attractive than Equality-low. In contrast, proselfs clearly took advantageous position into account. When self was in this position, proselfs rank-ordered Joint-outcome as more attractive than Equality-high and Equality-high as more attractive than Equality-low. When the other was in the advantageous position, proselfs were not indifferent between Joint-outcome and Equality-high, but they rank-ordered Equality-high as more attractive than Equality-low.

In sum, the results of the two studies demonstrated that prosocials' motive is not to maximize the joint outcome. No participants were classified as joint-outcome prosocials in Study 1. Moreover, most of those classified as equal-outcome prosocials rank-ordered the joint-outcome alternatives as the worst alternative and were even more reluctant to choose to maximize the joint outcome than were individualists. This result contradicts the proposition that prosocials have two motives (Van Lange, 1999), instead suggesting that maximizing the joint outcome is not even potentially desirable to prosocials. More specifically, we believe that the first of the propositions made by SVO theory regarding prosocials' motive is false: The evidence does not support that prosocials maximize the joint outcome between self and the other.

Do Prosocials Minimize the Differences in Outcomes?

We argue that the dominance of equal outcomes among prosocials reflects an equality motive based on fairness considerations. This contrasts with other research in which equality has been considered a heuristic for distributing resources. Furthermore, we assume that prosocials' motive is to achieve equal outcomes, not to minimize the difference in outcomes to self and another person. Thus, if equality cannot be achieved, rather than minimizing the differences in outcomes, prosocials would choose another alternative.

A study reported in Eek and Gärling (2005) aimed at testing the validity of the SVO theory's second proposition that prosocials strive for minimizing the difference in outcomes between self and the other. According to the equality hypothesis, the striving for equal outcomes only holds when equality is possible to reach.

In nine allocation tasks, similar to those used in the TDMSV, we asked participants who had been classified into SVOs based on the TDMSV to choose between two alternative distributions of points between self and the other. The instructions were similar to those in the TDMSV. The number of points to self and the other was fixed in one of the distributions. In the other distribution, the number of points to self was fixed, but the number of points to the other was left open. If participants wanted to choose the open alternative, they were asked to fill in the number of points that they wanted the other to have in order to make this alternative more attractive than the fixed alternative. This had to be done within a given point interval that sometimes was below, sometimes above, and sometimes both below and above the number of points to self. The number of points to self was always fixed in both distributions. An example is

	A	B
Own outcome	400	300
Other's outcome	200	X ____ Y

Alternative A was fixed and always provided 100 more points to self than did alternative B. In alternative B, participants chose the other's outcome by filling in the number of points to the other within a fixed point interval. If participants wanted to choose A, they were asked to circle A and move on to the next task. If they wanted to choose B, they were asked to indicate the number of points within the point interval that they wanted the other to have in order for alternative B to be more attractive than alternative A. The point interval (X–Y) was either below (e.g., 100–200 in the example above), above (e.g., 400–500), or both below and above (100–500) the outcome to self. It is thus only the point interval both below and above that permits the choice of equal outcomes.

Since the number of points to self was higher in the fixed than in the open alternative, we hypothesized that proselves (both individualists and competitors) should choose the fixed alternative. Given that prosocials prefer equal outcomes to self and the other, we hypothesized that prosocials should choose the open alternative only when the point interval permitted equal outcomes. In contrast, should prosocials be motivated to minimize the difference in outcomes, as posited in the SVO theory, they would choose the open alternative also when the point interval was below outcomes to self. Furthermore, were they motivated to maximize the joint outcome, they would choose the open alternative when the point interval was above outcomes to self and when it was both below and above outcomes to self.

One hundred and twelve undergraduates at Göteborg University were recruited for two samples. In Sample 1, a total of 139 participants was recruited in different classes and asked to volunteer without any payment in a study on decision making. They were guaranteed anonymity. Those who accepted to participate were asked after class to complete the TDMSV. Between three and six weeks later, they were invited via email to the laboratory. On different occasions, 58 of those participants showed up. Data from Sample 2 were obtained from 54 undergraduates prior to their taking part in unrelated experiments.

Participants had to complete a questionnaire consisting of different decision-making tasks. In order to check the consistency of the classification on the basis of TDMSV at different points in time for Sample 1, and to classify participants according to SVOs in Sample 2, the final task in the questionnaire, which was not immediately preceded by the main task described above, was to complete the standard TDMSV.

The results showed that of the 58 participants who showed up at the laboratory (Sample 1), 34 were classified as prosocials, 2 as competitors, 18 as individualists, and 4 unclassified due to inconsistent responses the first time they completed the TDMSV. Revealing that the classification was relatively

stable, the second time the TDMSV was completed, 41 participants in Sample 1 were classified into the same SVO as on the first occasion. A measure of agreement between the two assessments of SVO revealed that the classifications were reliable, Cohen's $K = 0.448$, $p < 0.01$. The following analyses were based on participants' SVOs as measured on the second occasion. A χ^2 test revealed that the distribution of SVOs did not differ between the samples ($p > 0.65$). In total, 69 were classified as prosocials, 22 as individualists, and 11 as competitors. Individualists and competitors were collapsed into one group consisting of 33 proselves. The remaining 10 participants were unclassified and discarded from further analyses.

In Table 2.2, absolute frequencies of prosocials' and proselves' choices of the different distributions are presented for tasks where the point interval for the open alternative was either below, above, or both below and above outcome to self. Given that there were three tasks for each level of the point interval, there were in total 207 responses from prosocials ($n = 69$) and 99 responses from proselves ($n = 33$). Some participants had responded incorrectly on one or a few of the tasks. In a vast majority of those cases, these incorrect responses were made by prosocials who had distributed the points according to equality, even though this was not permitted because the point interval was not both below and above outcome to self. The relative frequencies of choices that correspond with the different distributions adopted by participants, also given in the table, exclude incorrect responses.

Table 2.2 Absolute and Relative Frequencies of Choices of Distribution Related to Social Value Orientation

Point interval ¹	Distribution ²	Social Value Orientation			
		Prosocial ($n = 69$)		Proself ($n = 33$)	
		<i>f</i>	%	<i>f</i>	%
Below	Fixed distribution	146	76.4	77	82.8
	Minimizing difference	36	18.9	8	8.6
	<i>Total</i>		95.3		91.4
Below and above	Fixed distribution	56	27.0	69	72.6
	Minimizing difference (Equality)	98	47.0	18	19.0
	Maximizing joint outcome	38	18.3	2	2.1
	<i>Total</i>		92.3		93.7
Above	Fixed distribution	124	66.7	87	92.6
	Minimizing difference	19	10.2	5	5.3
	Maximizing joint outcome	36	19.3	1	1.1
	<i>Total</i>		96.2		99.0

¹ Below refers to when the point interval in the open alternatives was below outcome to self. Below and above refers to when the point interval in the open alternatives was both below and above outcome to self, permitting equality. Above refers to when the point interval in the open alternatives was above outcome to self.

² Fixed distribution refers to choice of the fixed alternative. Other labels refer to the rules that coincide with the distributions chosen by participants by the open alternative.

As seen in Table 2.2, more than 90% of participants' choices were made of the fixed distribution, or a distribution that minimized the difference in outcomes, or a distribution that maximized the joint outcome. This was true for all levels of the point interval. The relative frequency of choices of the fixed distribution and a distribution that minimized outcome differences were submitted to a 2 (SVO: prosocials vs. proselves) by 2 (distribution: fixed vs. minimizing outcome differences) by 3 (point interval: below vs. below and above vs. above) analysis of variance (ANOVA) with repeated measures on the two last factors. The main effect of distribution, $F(2, 200) = 56.42, p < 0.001$, was significant and indicated that the fixed distribution was chosen more often than minimizing outcome differences. Although the two-way interaction between SVO and distribution, $F(2, 200) = 15.28, p < 0.001$, and that between distribution and point interval, $F(2, 200) = 42.86, p < 0.001$, were significant, they were of little interest since the hypothesized three-way interaction among SVO, distribution, and point interval was also significant, $F(2, 200) = 15.28, p < 0.001$.

When the point interval was below outcome to self, both groups preferred the fixed distribution where the outcome difference was 200 points. For proselves, this was predicted by the SVO theory. However, should prosocials' motive be to minimize outcome differences, a majority of their responses would give the other 100 points more and thereby reduce outcome differences by 50%. This was clearly not the case. Although this result could suggest that prosocials wanted to maximize the joint outcome that was confounded with maximizing their own outcome when the point interval was below outcomes to self, this is inconsistent with the results presented above (Eek & Gärling, 2006). In line with the equality hypothesis, separate Bonferroni-corrected *t*-tests at $p = 0.05$ showed that there was no difference between prosocials and proselves in the percentage of choices of the fixed distribution or of choices of minimizing outcome differences.

When the point interval was above outcome to self, choices by proselves were again as predicted by the SVO theory. Both motives that SVO theory regards as prosocial—maximizing joint outcome and minimizing outcome differences—were possible to follow when the point interval was above. Twice as many responses from prosocials preferred the former to the latter motive. Still, a clear majority of prosocials preferred the same distribution as was preferred by proselves. Even though the post-hoc tests showed that there was a difference between prosocials and proselves in the percentage of choices of the fixed distribution, the tests also indicated that both groups preferred the fixed distribution to minimizing outcome differences.

As predicted by the alternative equality hypothesis, it was only when the point interval was both below and above outcome to self that a majority of prosocials preferred the open to the fixed distribution. The post-hoc tests showed that proselves preferred the fixed distribution more than did prosocials and that prosocials preferred minimizing outcome differences more than did proselves. The results thus indicate that prosocials prefer equal outcomes, not to minimize outcome differences. If equal outcomes cannot be obtained, prosocials' choices do not differ from proselves' choices.

Moderating Factors

Even though SVOs have been shown to be a rather stable person characteristic (e.g., Van Lange & Kuhlman, 1994; Van Lange et al., 1997), situational factors may still moderate people's choices in TDMSV. For instance, characteristics of the other person (e.g., likeability) would most likely affect the distribution of SVOs because both prosocials and proselfs give more points to a friend and less to an enemy. If both groups' choices are affected, whether a theoretical clarification is obtained by such a demonstration is, however, questionable. On the other hand, it is clearly relevant to investigate under what circumstances only one SVO group switches from one motive to another. It is in line with the focus of this chapter to investigate situational factors that make prosocials become more concerned about joint outcomes. This was the aim of an additional study (Eek & Gärling, 2000) that examined the possible moderating effect of concerns for efficiency on prosocials' motive in allocation tasks such as the TDMSV.

In the TDMSV, nothing is mentioned about what happens to points not distributed. We expected that prosocials more than proselfs would be more concerned about the joint outcome if they knew that points not distributed are wasted, thereby signaling inefficient resource use. In Wilke's (1991) GEF hypothesis, efficiency was explicitly introduced as one of three important motives explaining cooperation in social dilemmas: Although people are greedy (G) and therefore defect in social dilemmas, greed is constrained by a desire that the resource is utilized efficiently (E) and by a desire that the distribution of benefits between group members is fair (F). Thus, even though people want to defect out of greed, they sometimes realize that defection is either inefficient or unfair. As a consequence, they instead choose to cooperate.

As noted above, prosocials cooperate more than proselfs in social dilemmas. There are many possible reasons for this. We argue that some of the reasons highlighted by Kuhlman et al. (1986) are related to the GEF hypothesis. Kuhlman et al. proposed and showed (or referred to other studies showing this) that prosocials have a strong sense of moral obligation to cooperate and that they anticipate that others will also cooperate. We believe that such a moral obligation is closely related to the fairness component in the GEF hypothesis and that it may explain why prosocials hold the motive of equality in the TDMSV. Thus, prosocials prefer equal and fair outcomes. Kuhlman et al. (1986) also stated that "Prosocial persons have a time perspective on the commons which extends farther into the future than do Individualists. They have a better appreciation for the 'social trap' character of the commons" (p. 171). We believe that such a "time perspective" is equivalent to endorsing efficiency according to the GEF hypothesis. Therefore, we hypothesized that prosocials will switch from the motive of equality to the motive of maximizing the joint outcome when considerations for efficiency are evoked. In contrast, proselfs were expected to stick to their basic motive also when efficiency considerations are evoked.

Participants made choices among the four alternatives in the extended TDMSV employed by Eek and Gärling (2006). Replicating the previous results, more participants were expected to be classified as equal-outcome prosocials than

joint-outcome prosocials. However, the reverse was expected when the instructions emphasized that the points would be destroyed if not allocated, implying inefficient resource utilization. No effect of the changed instructions was expected for those classified as individualists or competitors.

Participants were 100 undergraduate psychology students randomly assigned to one of two groups. They volunteered without any payment and were assured that their responses would be anonymous. Instead of rank-ordering the attractiveness of the four alternatives as in Eek and Gärling (2006) (see p. X), they were asked each time to choose the most attractive alternative.

Both groups of participants received the standard instructions in the questionnaire. One of the groups received additional instructions informing the participants that for each task there were 1,500 points to distribute and that points not distributed would be destroyed.

In Table 2.3, the classification of the participants to SVOs is displayed for each condition. As may be seen, under standard instructions, 5 of the participants were not possible to classify, while 10 were not possible to classify under efficiency instructions. Furthermore, none and two were classified as competitors in each condition, respectively. The numbers classified as individualists were almost the same (12 and 11). Consistent with the hypothesis, the added instructions reduced the number of participants classified as equal-outcome prosocials from 22 to 9, whereas the number classified as joint-outcome prosocials increased from 11 to 17, $\chi^2(4, n = 99) = 10.44, p < 0.05$. Partitioning the contingency table into four independent 2 by 2 subtables, additional analyses revealed that only the difference in the number of equal-outcome prosocials and joint-outcome prosocials was significant, $\chi^2(1, n = 99) = 5.91, p < 0.05$.

Thus, equality was preferred to a distribution that maximized the joint outcome when standard instructions were given. However, when the instructions made efficiency salient, more cooperators were classified as joint-outcome prosocials than equal-outcome prosocials, indicating that considerations for efficiency moderate the motive held by prosocials. The numbers of individualists and competitors were not affected by the efficiency instructions. In order for prosocials to pay attention to maximizing joint outcome, it seems as if something must be added that rationalizes this motive.

Table 2.3 Absolute and Relative Frequencies of Social Value Orientations Related to Standard vs. Efficiency Instructions

Social Value Orientation	Standard Instructions		Efficiency Instructions	
	<i>f</i>	%	<i>f</i>	%
Equal-outcome prosocials	22	44.0	9	18.4
Joint-outcome prosocials	11	22.0	17	34.7
Individualists	12	24.0	11	22.4
Competitors	0	0.0	2	4.1
Not classified	5	10.0	10	20.4

Discussion and Conclusions

The present research addressed a major question that for a long time has been unanswered but treated as if it had been answered: What motive guides prosocials' choices? First, the SVO theory assumed that the motive was to maximize the joint outcome (e.g., Kuhlman & Marshello, 1975). Later, Van Lange (1999) argued that a better understanding of prosocials' behavior is obtained by treating their motive as dependent on both maximizing the joint outcome and minimizing outcome differences.

It is difficult to investigate the effects of SVO and the underlying motives to people's choices by means of assessments based on the TDMSV. One reason is the imperfect test-retest reliability. Even though a significant number of people are classified into the same SVO from one time to another, quite a few are not. Van Lange's (1999) cautiousness in statements such as "social value orientation reflects dispositions that are at least somewhat stable yet open to modifications, particularly over a relatively longer period of time" (p. 343) appears warranted. The fact that some people are classified into different SVOs depending on when and where the assessment takes place indicates that for those people long-term effects of SVOs cannot be taken for granted. Still, many interesting and important studies of the effects of SVO on various behaviors, where studies by Van Lange and colleagues in the last decade constitute the core, are important since they show that responses to tests such as the TDMSV correlate reliably with various prosocial behaviors. Thus, responses to TDMSV that allow a classification of participants to different SVOs appear to capture important aspects of their behavior. Therefore, it is essential to reach a better understanding of the motives that lead to the different choices. Otherwise, one may make wrong inferences when interpreting behavioral differences between prosocials and proselves.

In the present chapter, we did not intend to examine behavioral effects of SVO. Instead, our focus was the underlying motives for prosocials' choices in the TDMSV. Two studies by Eek and Gärling (2006) were reviewed that tested the alternative equality hypothesis, that prosocials want to obtain equal outcomes instead of maximizing the joint outcome. We conclude that the results were in strong favor of the equality hypothesis, particularly in Study 2, where it was shown that prosocials preferred worse outcomes to both parties as long as these outcomes were equal.

Another study by Eek and Gärling (2005) tested whether prosocials prefer to minimize outcome differences when equality of outcomes cannot be achieved. Again in support of the alternative equality hypothesis, the results indicated that prosocials' choices differ from proselves' choices only when equality can be achieved. When outcome differences were merely decreased, prosocials preferred the alternative that maximized outcome to self exactly as proselves did.

We argue that our research shows that prosocials are trying to obtain equal outcomes. However, we are not arguing that the results invalidate any of the different methods used to measure SVOs. Our argument is instead that the SVO theory (e.g., Messick & McClintock, 1968; Van Lange, 1999) needs to be revised. It should be noted that, even though effects of SVO nowadays are studied

in very many different contexts (e.g., Au & Kwong, 2004), SVO was primarily introduced to explain individual differences in cooperation in the prisoner's dilemma game (e.g., Kuhlman & Marshello, 1975). Prosocials' higher degree of cooperation relative to proselves' is believed to depend on a (prosocial) wish to maximize the joint outcome. This implies that prosocials are regarded as more rational than proselves at a collective level. By providing information about the other's choice in a modified prisoner's dilemma game where the largest joint outcome is achieved when one player cooperates and the other defects, an additional study in Eek and Gärling (2006) actually directly tested and rectified what so far has been taken more or less for granted: Whereas the high cooperation rates among prosocials have been interpreted as a preference for maximizing the joint outcome, the results clearly demonstrated that prosocials cooperate because they prefer equal outcomes. Thus, rather than assuming that prosocials are rational at a collective level and that proselves are rational at an individual level, we suggest that prosocials' willingness to be fair sometimes entraps them to be both collectively and individually irrational. However, we could also demonstrate in the last study reviewed in this chapter (Eek & Gärling, 2000) that prosocials but not proselves can be induced to act rationally at a collective level. The three key components of the GEF hypothesis (Wilke, 1991) can be used to summarize the main points raised by the results reviewed in this chapter: In order to serve their own interests, proselves are by default driven by greed. In contrast, prosocials are by default motivated to achieve fairness, which is served by equality. Thus, the efficiency component does not on its own affect either group's choices. Should, however, a concern for the resource be induced, choices by prosocials are also influenced by concerns for efficiency. We believe these arguments help to explain why choices made by prosocials and proselves differ, with regard to both assessments of SVO and the behavioral responses predicted by SVO.

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