

The Needs of the Many Do Not Outweigh the Needs of the Few: The Limits of Individual Sacrifice across Diverse Cultures

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Abstract

A long tradition of research in WEIRD (Western, Educated, Industrialized, Rich, Democratic) countries has investigated how people weigh individual welfare versus group welfare in their moral judgments. Relatively less research has investigated the generalizability of results across non-WEIRD populations. In the current study, we ask participants across nine diverse cultures (Bali, Costa Rica, France, Guatemala, Japan, Madagascar, Mongolia, Serbia, and the USA) to make a series of moral judgments

regarding both third-party sacrifice for group welfare and first-person sacrifice for group welfare. In addition to finding some amount of cross-cultural variation on most of our questions, we also find two cross-culturally consistent judgments: (1) when individuals are in equivalent situations, overall welfare should be maximized, and (2) harm to individuals should be taken into account, and some types of individual harm can trump overall group welfare. We end by discussing the specific pattern of variable and consistent features in the context of evolutionary theories of the evolution of morality.

Keywords

moral judgment – moral psychology – evolution – fairness – welfare tradeoffs

Introduction

The needs of the many outweigh the needs of the few. Or the one.

—SPOCK AND KIRK, *Star Trek II: The Wrath of Khan*

Do humans (like the ultra-logical alien “Spock” in *Star Trek*) judge that individual welfare should be sacrificed for the good of the group? Or do humans judge that “the ends do not justify the means” and that an individual’s welfare should not be sacrificed for others? Both of these conclusions have some pull on moral judgments, as evidenced by the long history of philosophers arguing on each side. For example, utilitarianism (e.g., Jeremy Bentham, John Stuart Mill) values overall welfare even at the expense of individuals’ rights, whereas deontology (e.g., Immanuel Kant) focuses on the rights of individuals (Rachels, 2003).

The pull of both individual welfare and group welfare has also been established by empirical research on moral judgments. On the side of group welfare, perhaps the most famous result in moral psychology is that people judge that it is acceptable to switch a runaway trolley from a set of tracks with five people onto a set of tracks with only one person (e.g., Greene et al., 2001). On the other hand, people are unwilling to maximize group welfare in other situations: they prefer not to reduce cure rates for one group of ill people to increase cure rates for a larger group (Baron, 1994), prefer income distributions based partially on equality rather than total income (Dawes et al., 2007), prefer retributive justice to deterrence (Carlsmith et al., 2002), and condemn pushing one person off of a footbridge and in front of a trolley to save five people further down the tracks (Greene et al., 2001).

Evolutionary Origins

Just as empirical work has established the pull of both individual- and group-maximizing motivations, work in evolutionary theory has suggested potential functions for both a moral psychology targeted towards group welfare (e.g., Wilson et al., 2008), and a moral psychology targeted towards respecting individual welfare (e.g., Baumard & Sheskin, 2015). Specifically, group-level selection theories predict an emphasis on prosocial actions that maximize group welfare, producing Spock-like moral judgments that put the needs of the many ahead of the needs of the few (e.g., Bernhard et al., 2006; Bowles, 2009; Haidt & Kesebir, 2010; Norenzayan & Shariff, 2008; Nowak et al., 2010). In contrast, individual-level selection theories predict an emphasis on prosocial actions that are associated with mutual benefit (Baumard et al., 2013).

Importantly, however, the relative importance of group-level and individual-level selection is currently debated by evolutionary biologists. The debate is focused on whether group-level selection operates *in addition to* individual-level selection (the presence of both is called “multi-level” selection). For example, a paper in favor of the importance of group-level selection published in *Nature* (Nowak et al., 2010) was criticized in a response co-signed by over 130 researchers (Abbot et al., 2011), and the debate over the initial paper is still ongoing (e.g., Liao et al., 2015; Nowak & Allen, 2015; Queller et al., 2015; for a general discussion, see target article and associated commentaries on Pinker, 2012).

In this paper, we investigate whether moral judgments across diverse cultures are more focused on promoting group fitness (as predicted by group-level selection) or more focused on respecting individual fitness (as predicted by individual-level selection). It is possible that there are no limits on how people weigh individual and group welfare. For example, it could be that individual- and group-level selection pressures have equipped humans with a moral psychology that values both individual and group welfare, and that these opposing aspects can be emphasized or de-emphasized relative to each other, without limit, depending on local cultural norms. However, we predict a limit on the variation, and that this limit will come from a particular individual-level selection approach called partner-choice theory.

Partner-Choice Theory and Fairness

According to partner-choice theory, it can be personally advantageous to treat others well when doing so is associated with being selected by others for mutually beneficial activities (e.g., Barclay & Willer, 2007; Bshary & Bergmüller, 2008; Hardy & Van Vugt, 2006; Noë & Hammerstein, 1994). Partner choice models have recently demonstrated that, when individuals can choose their cooperative partners, the only evolutionary stable strategy is for individuals to share

the benefits of cooperation in a way that corresponds to each individual's opportunities (André & Baumard, 2011; Baumard et al., 2013).

More specifically, people who treat others well will be able to benefit via future cooperation, whereas people who treat others poorly will be shunned and miss out on benefits from future cooperation. "Well" and "poorly" have been precisely defined with reference to the treatment a person can expect to find elsewhere (Debove, André, & Baumard, 2015; Debove, Baumard, & André, 2015), and people's intuitive judgments about fairness (e.g., regarding how unequal outcomes are appropriate given differences in features such as merit or effort) reflect these outside opportunities. The importance of fairness for human cooperation is one reason why fairness concerns, if present in other species, are far less robust than in humans (Sheskin & Santos, 2012; Tomasello, 2016).

At the proximate level, partner choice theory thus predicts that humans will be equipped with a cognitive system whose function is to make sure that they are not unfairly imposing opportunity costs on others: that others get as much benefit from interacting with them as what they could expect by interacting with someone else. This proximate mechanism is quite different than the proximate mechanism that group selection would have been likely to produce. Given that group selection would select individuals who try to maximize the fitness of their group, it predicts that humans would be endowed with a cognitive system whose function was to compute all utility costs and take the course of action that maximized group utility (Baumard & Sheskin, 2015).

Previous Cross-Cultural Research

The divergent predictions of individual- and group-level selection can be tested by investigations of how people weigh individual against group welfare. This is a domain of research in which a diverse range of populations is particularly important, because there are reasons to predict that there might be substantial cross-cultural variation. For example, previous research has suggested that western societies might be relatively more individualistic and defend individual rights, whereas non-western societies might be relatively more collectivistic and holistic and might favor the interest of the group over the interest of the individual (Markus & Kitayama, 1991).

However, most research on moral dilemmas has focused on samples drawn from a narrow subset of humanity: Western, Educated, Industrialized, Rich, and Democratic (WEIRD) populations (Henrich, Heine, & Norenzayan, 2010a). To provide a small set of diverse examples: Lombrozo (2009) has looked at the role of moral commitments and consistency across multiple dilemmas; Greene, Cushman, Stewart, Lowenberg, Nystrom, and Cohen (2009) have looked at the role of personal force and intention; Côté, Piff, and Willer (2013) have looked at the influence of social class; Schwitzgebel and Cushman (2012)

looked at order effects for both experts and non-experts; and Pellizzoni, Siegal, and Surian (2010) looked at judgments by young children.

There is relatively less research on cross-cultural moral psychology, especially studies implementing the same research protocols with both WEIRD and non-WEIRD populations (though see, e.g., Shweder, Much, Mahapatra, & Park, 1997). The most developed parts of this literature are with behavioral economic games, rather than moral judgments. The research with behavioral economic games has revealed elements of both consistency and variation.

Most notably, Henrich and colleagues (2005; 2006; 2010b) have looked at decisions in economic games across many societies, including generosity in the Dictator Game (in which one person has sole discretion over dividing a pool of resources between self and other), strategic decision-making in the Ultimatum Game (in which the divider's decision is only implemented with the assent of the other person, and otherwise both receive nothing), and enforcement of moral norms in a Third-Party Punishment Game (in which a third person can pay to punish someone who has acted too selfishly in the first part of the game). Such research has revealed many important facets of morality, including causes of variability (e.g., market integration is positively associated with cooperating with strangers, Henrich et al., 2010; harshness of the environment is negatively associated, Nettle et al., 2011), and how children acquire the patterns of behavior shown by adults in their culture (House et al., 2013).

On the other hand, moral judgments involving weighing the welfare of individuals against the welfare of the group have seldom been tested cross-culturally (for an online sample, which therefore restricts data collection to those with internet access, see Cushman et al., 2006; for a study comparing Chinese and British participants, see Gold et al., 2014). In the current studies we thus aimed to test a large variety of cultures using moral dilemmas administered using an in-person, pen-and-paper survey, and focused on the specific issue of judgments regarding individual versus group welfare.

The Current Studies

Across nine diverse cultures (see Fig. 1), we investigate judgments weighing the welfare of individuals against the welfare of a larger group. We use two sets of dilemmas: one “third-party sacrifice” set that asks participants to judge whether a protagonist should sacrifice the welfare of a single other person for the benefit of multiple other people, and one “first-person sacrifice” set that asks participants to judge whether a specific agent should sacrifice himself for the benefit of multiple other people. In each set, participants are asked about varying levels of harm the protagonist might either endure to himself (first-person) or inflict on another individual (third-party) for the benefit of others. The harms range from minor to severe, up to a case in which the harm



FIGURE 1 Map showing location of each sample.

to the individual causes that person's death. Especially for the cases involving the death of the individual, the harm is one that *cannot* be repaid by future cooperation, and thus that should be discouraged by a psychology produced by individual-level selection.

Method

Participants

We tested participants in nine locations: Bali, Costa Rica, France, Guatemala, Japan, Madagascar, Mongolia, Serbia, and the USA. There were a total of 263 participants, not including 4 participants excluded from the Mongolian sample for leaving at least one question blank. Fig. 1 provides a map of our data collection, and Table 1 provides a breakdown of the demographic information

TABLE 1 *Demographics of each sample. Age and gender information is missing for Costa Rica*

Country	Location	N	Mean Age (SD)	% Female	Language	Urban or Rural	Primary Religion
Costa Rica	Santa Ana	18	38.72 (9.442)	77.8	Spanish	Urban	Christian
France	Paris	21	23.05 (6.057)	71.4	French	Urban	Christian
Guatemala	Guatemala City	20	38.80 (16.857)	75.0	Spanish	Urban	Christian
Indonesia	Bali	30	31.83 (6.309)	53.3	Indonesian	Urban	Hindu
Japan	Kyoto	34	39.09 (9.728)	41.2	Japanese	Urban	Shinto/ Buddhism
Madagascar	Bestileo	14	35.57 (16.341)	71.4	Malagasy	Rural	Christian/ Traditional
Mongolia	Ulan Bator	40	21.33 (5.161)	53.3	Mongolian	Urban	Buddhism
Serbia	Vojvodina	59	47.39 (14.00)	61.0	Serbian	Rural	Christian
USA	Manhattan	27	23.00 (3.595)	51.9	English	Urban	Christian

for each location (for more information about the Bali sample, please see Sebestény, 2013; for the Madagascar sample, Regnier, 2015; for the Mongolian sample, Berniūnas, Dranseika, & Sousa, 2016).

Procedure

Each participant received a paper survey packet with each of the seven scenarios on a separate page (the group of participants in Madagascar received only the third-party scenarios and not the first-person scenarios). Questions were translated into the target language and then back translated to check for consistency with the original material. Participants were instructed to answer the questions in order and not to return to previous pages. Each participant completed the survey individually, and the experimenter remained nearby and approachable in case the participant had any questions.

Scenarios

The three third-party scenarios were concerned with a sailor attempting to rescue drowning people using a buoy. These “Buoy” scenarios are entirely third-party because the sailor is never in any danger himself — he is merely faced with a decision about how to go about saving other people.

In each of the three scenarios, a boat has sunk and six people are about to drown. Five people are in a group close to each other, while another person is alone. The sailor sees that the shipwrecked people are very tired and that he will be able to save only the single person, or only the group of five, but not both the single person and the group of five.

The sailor throws the buoy and it lands differently in each of the three scenarios: (1) it lands exactly in the middle, and it is unknown whether the waves will push it towards the five people or the one person, (2) it lands exactly in the middle, but the waves will push the buoy towards the single person, and away from the five, or (3) the buoy lands directly next to the single person. Participants were asked whether they thought that the sailor should take the buoy back and throw it toward the group of five (dooming the single person), and to rate the strength of the sailor’s duty on a scale ranging from 1 “He should throw the buoy again” to 9 “He should not throw the buoy again”.

The four first-person scenarios were concerned with a passerby who can save five people from a burning building. Unlike the buoy scenarios, the “Fire” scenarios are about first-person sacrifice because the protagonist can take a cost to save others. Specifically, John is walking in the countryside when he sees a house burning. He sees that five people are blocked inside. If nothing is

done, these people are going to die within a few minutes. John can go inside the burning house to save them but he will be injured as a result. We manipulated the severity of the outcome for John in four variants of the story, causing either (1) light burns, (2) heavy burns lasting several months, (3) disfigurement, or (4) death.

At the end of the story, John decides not to go inside the burning house. Participants were asked whether they agreed with John's decision and to rate their level of agreement or disagreement on a scale ranging from 1 "We can criticize John for his decision" to 9 "We cannot criticize John for his decision".

Results

Table 2 shows the percent of participants in each sample that answered "yes" to each scenario. These answers represent a commitment to the greater good (saving 5 people at the cost of 1), either by agreeing that a sailor *should pull back a buoy* that a single sailor might get so that it can be re-thrown towards a larger group, or by judging that John *should be criticized* for not incurring personal harm to assist a group in a burning house.

TABLE 2 *Percent of participants in each sample answering "yes" to each scenario (should re-throw buoy towards five people; should be blamed for not saving five people). Bolded numbers indicate values significantly different from chance (50%) at the .05 level*

	Buoy 1	Buoy 2	Buoy 3	Fire 1	Fire 2	Fire 3	Fire 4
Bali	80	70	50	60	30	13.3	6.7
Costa Rica	77.8	66.7	72.2	50	38.9	11.1	5.6
France	90.5	66.7	71.4	76.2	33.3	4.8	4.8
Guatemala	100	80	65	75	70	40	30
Japan	91.2	38.2	29.4	32.4	14.7	11.8	2.9
Madagascar	100	92.9	28.6				
Mongolia	77.5	55	45	47.5	32.5	17.4	12.5
Serbia	91.5	83.1	78	94.9	91.5	54.2	18.6
USA	88.9	74.1	51.9	66.7	37	29.6	14.8

Of particular note are the most extreme scenarios: the first Buoy scenario (in which the buoy is exactly in the middle between the group of five and the one person) and the final Fire scenario (in which the protagonist can only save the five people at the cost of his own life). In every sample, a significant majority of participants thought that the sailor should pull in and re-throw the equally-accessible buoy to ensure it landed near the group of five people, rather than leaving the outcome to chance (Buoy 1). In every sample but one, a significant majority of participants thought that John could *not* be criticized for deciding not to sacrifice his own life to save 5 people from a burning house (Fire 4). The sole exception is Guatemala, in which a non-significant majority of participants (14 of 20, $p = .058$) showed the typical pattern.

The Likert scale responses show the same consistencies regarding the most extreme scenarios. As shown in Fig. 2 and Table 3, participants in every sample provided a mean agreement higher than chance that the Buoy in the first scenario should be re-thrown; as shown in Fig. 3 and Table 3, participants in every sample provided mean agreement higher than chance that the protagonist should not be blamed for failing to save the five people at the cost of dying.

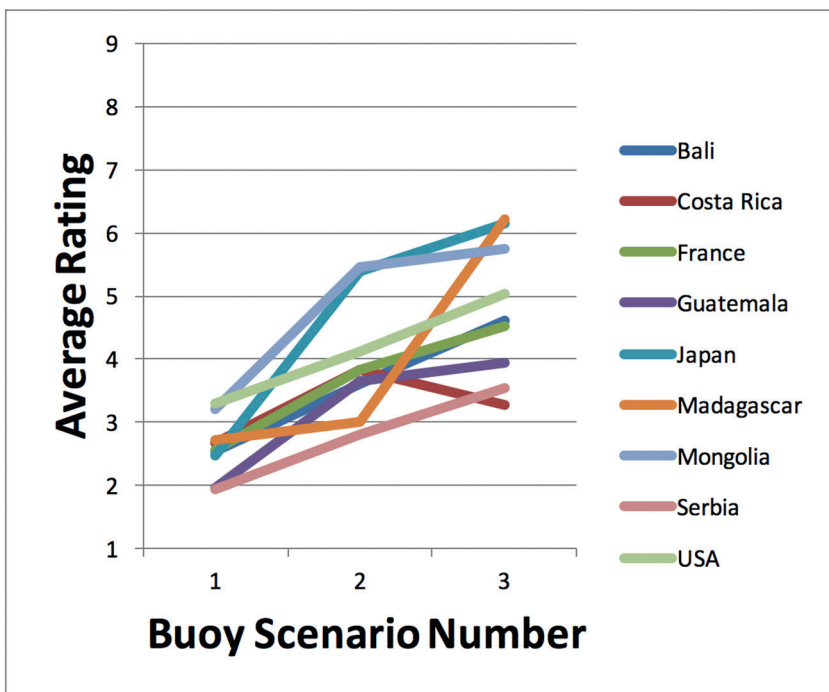


FIGURE 2 *Average rating across samples for each Buoy scenario, from 1 “re-throw” to 9 “do not re-throw.”*

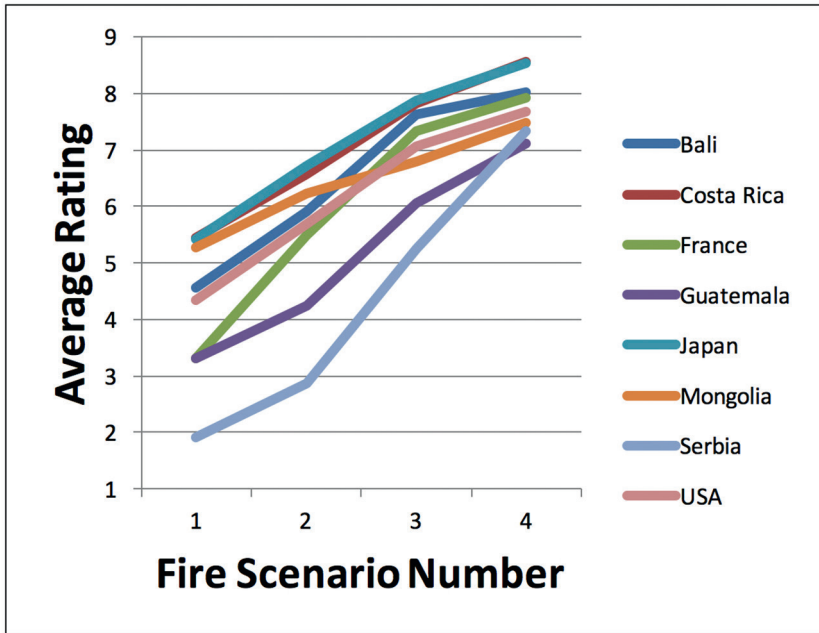


FIGURE 3 Average rating across samples for each Fire scenario, from 1 “can be criticized” to 9 “cannot be criticized.”

TABLE 3 Significance tests (one sample t-test) for whether Likert scale responses to each scenario were different from chance

Country	Buoy 1	Buoy 2	Buoy 3	Fire 1	Fire 2	Fire 3	Fire 4
Bali	<.001	.025	.551	.473	.143	<.001	<.001
Costa Rica	.003	.189	.041	.592	.048	<.001	<.001
France	<.001	.021	.338	.001	.393	<.001	<.001
Guatemala	<.001	.073	.136	.031	.353	.163	.003
Japan	<.001	.418	.014	.404	<.001	<.001	<.001
Madagascar	<.001	.004	.146				
Mongolia	<.001	.568	.263	.806	.033	.001	<.001
Serbia	<.001	<.001	<.001	<.001	<.001	.375	<.001
USA	<.001	.058	.934	.253	.154	<.001	<.001

Turning to cross-cultural variation, Table 4 shows, for each scenario, the results of a Chi-Square for whether yes/no responses varied across the samples. The only scenario that did not show significant differences for the yes/no responses, Fire 4, was close to the threshold ($p = .064$). Table 5 shows that the Likert ratings also show variation across samples. A single scenario (Buoy 1) did not show variation for the Likert ratings, but all others do.

TABLE 4 *Significance tests (Chi-Square) for whether yes/no responses to each scenario varied by sample*

Question	Chi-square value	df	p-value
Buoy 1	17.435	8	.026
Buoy 2	30.719	8	<.001
Buoy 3	34.758	8	<.001
Fire 1	54.637 (rerun it!)	7	<.001
Fire 2	76.024	7	<.001
Fire 3	40.636	7	<.001
Fire 4	13.366	7	.064

TABLE 5 *Significance tests (ANOVA) for whether Likert responses to each scenario varied by sample*

Question	F value	df	p-value
Buoy 1	1.651	8	.111
Buoy 2	4.141	8	<.001
Buoy 3	4.215	8	<.001
Fire 1	8.735	7	<.001
Fire 2	10.391	7	<.001
Fire 3	6.938	7	<.001
Fire 4	2.119	7	.042

Discussion

In addition to variation across cultures, we found important universals. First, people across cultures judge that, when all individuals have equal opportunity for safety (Buoy 1), five lives should be saved rather than one. Second, people universally judge that harm to individuals should be taken into account, and some types of individual harm can trump overall group welfare: when the single person is either about to be rescued (the waves pushing the buoy towards the person in Buoy 2) or in the process of being rescued (the buoy next to the person in Buoy 3), people are more resistant to the sailor re-throwing the buoy to save more lives. Furthermore, participants in each culture also agree that an agent should not be criticized for failing to save five people at the cost of death (Fire 4), and participants in nearly all cultures also decline to criticize an agent who would experience permanent scarring from severe burns (Fire 3). Finally, it is worth noting that the judgments of participants in *each* culture show monotonically decreasing criticism in the Fire scenarios: more harm to John leads to less criticism of John.

In sum, there are important consistencies in moral variation across diverse cultures, and these consistencies are apparent even though the specific responses to most scenarios showed variation. Most notably, people generally think it is correct to save the greatest number of lives, but they think there are limits on maximizing overall welfare: one person should not be sacrificed to save others, and a person cannot be blamed for failing to take high costs to save others.

These results go against the idea that, whereas western societies would be individualistic and defend individual rights, non-western societies would be collectivistic and holistic and would favor the interest of the group over the interest of the individual (Markus & Kitayama, 1991). Across all cultures, we found that people value individual interest — often against the interest of the group — when they grant people the right not to sacrifice their welfare in helping others, and when they take into account harms to individual's rather than just maximizing the number of lives saved. This result is consistent with previous cross-cultural studies showing a universal condemnation of sacrificing an individual to the group (Cushman et al., 2006; Gold et al., 2014), as well as ethnographic studies reporting a universal defense of individual rights (Turiel & Wainryb, 1998; Neff & Helwig, 2002).

Implications for Debates Over Evolution

If our moral psychology were completely determined by motivations to increase group welfare (i.e., motivations produced by group-level selection), then, contrary to our actual results, we would have found that participants' judgments always focused on maximizing the total number of lives saved. Our actual results, highlighting cross-culturally consistent cases in which judgments go against group welfare, argue against our moral psychology being dominated by group-maximizing preferences produced by group-level selection. Instead, our judgments are dominated by the logic of fairness (see also Starmans, Sheskin, & Bloom, 2017).

Importantly, this conclusion does not rule out the possibility of group-level selection exerting some level of influence on our moral psychology. For example, given selection pressures from both individual- and group-level selection, weak moral judgments for maximizing group welfare (and criticizing those who do not act to maximize group welfare) might not be expressed in cases where individuals experience large harms.

Future Research Directions

The current research both raises new questions for investigation, and leaves several related areas unexplored. Most notably, we have focused on the consistencies that are visible against the background of variability in our results, and further research will be necessary to investigate the causes of the variability we observed. For example, a core question in cross-cultural research is whether variation is caused by learned social norms or produced by an evolved psychology responding flexibly to the local environment. However, as noted by Delton, Krasnow, Cosmides, and Tooby (2010) in a commentary on the work by Henrich and colleagues (2010), "nothing in their data can test (even in principle) whether it is psychological or cultural processes (or both) that cause these cross-cultural differences. Only long-abandoned instinct-as-reflex theories expect invariant responses in the face of different social inputs. By contrast, modern adaptationist theories predict that our evolved social psychology will be calibrated by relevant environmental inputs." Thus, specialized methods will be needed to not just catalogue the extent of similarities and differences, but also investigate the origins of them.

Regarding related areas for future research, one important aspect of the current study is that it focuses on the behaviors of strangers towards strangers: the study participants were not making decisions about people they knew, and the story protagonists did not know the people who might be helped or hurt by their actions. This is in line with most research on moral psychology,

including cross-cultural research (e.g., the cross-cultural behavioral economic games, played with anonymous others, discussed in our Introduction). However, most real-world moral decisions take place in the context of trading off between the welfare of ourselves and those who are socially close to us. Moral decisions might sometimes also include evaluations of the welfare of others who are (socially) distant, but, even when distant others are included, they are included *in addition* to oneself and close others. Likewise, evolutionary accounts of morality emphasize relationships between kin (e.g., Hamilton, 1963) and socially close others (e.g., Trivers, 1971), but not strangers — especially not strangers who might be on the other side of intergroup conflict (e.g., McDonald, Navarrete, & Van Vugt, 2012).

Thus, an open area for future research is investigating cross-cultural differences in prosocial behavior across a wide range of targets, from socially close (e.g., family and friends) through various degrees of socially distant (e.g., in-group strangers and outgroup strangers). Recent methodological advances looking at how people make “welfare tradeoff” decisions could be useful for such investigations (Delton & Robertson, 2016). For example, building off of research by Henrich and colleagues (2010), do people in cultures with more market integration (associated with increased cooperation with a wider range of less well-known others) show less discounting of the welfare of strangers compared to the welfare of well-known others?

Likewise, future research could investigate the cross-cultural variation seen in the current results. For example, do differences in criticism of a person for not taking costs to others reflect variation in how people judge the moral responsibilities people have towards others, or variation in how willing people are to morally criticize others? Likewise, do differences in judgments about whether to deny a future benefit to one person for the benefit of others (as in re-throwing the buoy floating towards the one person) reflect variation in moral tradeoffs or variation in the temporal discounting of future benefits?

Conclusion

In sum, we find that, across nine diverse cultures, people generally think that (1) when individuals are in equivalent situations, overall welfare should be maximized, and (2) harm to individuals should be taken into account, and some types of individual harm can trump overall group welfare. These results argue against a sharp and categorical distinction between (e.g.,) WEIRD societies that are individualistic and defend individual rights, and non-WEIRD

societies that are collectivist and favor the group over the individual. The results are also consistent with a central importance of individual-level selection processes in the evolutionary history of human moral cognition. Although aliens such as Spock may insist that the needs of the many outweigh the needs of the few, humans all across the Earth are much less group-maximizing.

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