More than ever before in human history, many of people’s most pressing problems involve global interdependence. Because of phenomena associated with global warming, destruction of rain forests, and instability in international markets, decisions made by actors in one locality have consequences for the physical environment and for the economic opportunities of people at remote distances. Addressing such problems requires cooperation that transcends national boundaries.

Public-goods dilemmas have been studied extensively by behavioral economists, political scientists, and social psychologists, and laboratory and field research is instructive about the conditions under which individuals will behave cooperatively—even in the context of contributing resources to a group of anonymous strangers. In general, levels of cooperation are significantly higher when shared in-group identity is made salient or group members strongly identify with the collective than when no shared identity is available or group identification is weak (e.g., Brewer & Kramer, 1986; De Cremer & Van Vugt, 1999; Wit & Kerr, 2002).

Although researchers have proposed a number of mechanisms to explain why social identification with the relevant collective enhances self-sacrificial cooperation on behalf of that group (Brewer, 2008), we focus here on two mechanisms that have received the most attention—expectancies and values.

Global Social Identity and Global Cooperation

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Abstract

This research examined the question of whether the psychology of social identity can motivate cooperation in the context of a global collective. Our data came from a multinational study of choice behavior in a multilevel public-goods dilemma conducted among samples drawn from the general populations of the United States, Italy, Russia, Argentina, South Africa, and Iran. Results demonstrate that an inclusive social identification with the world community is a meaningful psychological construct that plays a role in motivating cooperation that transcends parochial interests. Self-reported identification with the world as a whole predicts behavioral contributions to a global public good beyond what is predicted from expectations about what other people are likely to contribute. Furthermore, global social identification is conceptually distinct from general attitudes about global issues, and has unique effects on cooperative behavior.

Keywords

social identity, cooperation, social dilemma, goal transformation, globalization

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Expectations About Other People

One theory is based on the idea that individuals generally expect that other people will be cooperative within the in-group (Brewer, 1986; Yamagishi & Kiyonari, 2000) and that people cooperate with each other because they are members of the same group (Foddy, Platow, & Yamagishi, 2009). Such norms of generalized reciprocity are strong in intragroup interactions and weaker or absent across group boundaries (Tanis & Postmes, 2005; Yamagishi, Jin, & Kiyonari, 1999). Expecting that other people will behave cooperatively reduces the fear that one’s own cooperation will be taken advantage of, making cooperation compatible with individual incentives. Thus, it is tempting to believe that if shared group membership increases trust (i.e., expectations that other in-group members will cooperate), that would be sufficient to account for the effect of in-group identity on all intragroup cooperative behavior.

However, expectations that other people intend to cooperate are not of themselves sufficient to generate cooperative behavior, especially in large, dispersed groups (e.g., De Cremer, Dewitte, & Snyder, 2001). Although trust reduces fear, it does not eliminate the self-interested benefit of noncooperation (i.e., greed). If everyone else is expected to cooperate, noncooperation takes advantage of other people’s contributions to group welfare and maximizes personal outcomes. In very large collectives, in which monitoring and reproach for nonreciprocity are minimal, this temptation to take advantage of other people’s cooperation is large.

Goal Transformation

A second explanation for why social identification with a collective enhances cooperation with that group is that strengthening group identity increases the value people attach to the group’s welfare as opposed to their personal welfare (i.e., the goal-transformation hypothesis). When individuals attach their sense of self to their group membership, they see themselves as interchangeable components of a larger social unit (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). As a result of this redefinition of the self, pursuing the group’s interest and maintaining concern with the group’s welfare become a direct expression of self-interest; that is, collective and personal interest become interchangeable (Brewer, 1991; De Cremer & Van Vugt, 1999; Kramer & Brewer, 1986).

De Cremer and van Dijk (2002) tested this idea in the context of a multiple-round public-goods dilemma. Notification that their group failed to provide the public good in one round (thereby creating low expectations about other group members’ behavior) motivated participants who had a strong social identity to contribute significantly more in the following session, a finding consistent with the goal-transformation hypothesis. In contrast, participants with a weak social identity reduced their contributions in the second round, as would be predicted from their low expectations about other group members’ behavior.

Prior research on social identity and collective cooperation has involved relatively small laboratory groups or local communities. Extant theories of the origins of altruistic cooperation in humans suggest that large-scale cooperation is parochial (e.g., Bernhard, Fischbacher, & Fehr, 2006; Choi & Bowles, 2007) and biased in favor of in-groups, such as ethnic groups, nations, or religious communities. However, it is an open question whether social identity can enhance cooperation in the context of very large, global collectives. In the current study, we examined the influence of social identity on behavior in a multilevel public-goods dilemma in which participants chose whether to make contributions that benefited the self, a local group, or a worldwide group.

The study was conducted in six countries representing high variability in environmental factors: the United States, Italy, Argentina, South Africa, Russia, and Iran. These countries differ greatly in levels of social, economic, and political globalization, as measured by the aggregated country-level globalization index (CGI1), which is produced by the Centre for the Study of Globalization and Regionalisation at the University of Warwick (Lockwood & Redoano, 2005). Furthermore, we sampled men and women ages 18 to 75 years who represented all levels of socioeconomic status in each country, so that our sample provided high variability in demographic factors.

The first study on this research population (Buchan et al., 2009a) demonstrated that individuals’ contributions to a world collective varied across countries as a function of the level of both country-wide and individual-level globalization (e.g., the level of social connectivity via Internet connections or economic connectivity via trade or purchase of foreign products). At both the country and individual levels, greater globalization was associated with greater contribution to a world collective.

In the study reported here, we examined whether there are psychological variables that are robust in predicting individual cooperative behaviors across this variation in the social and economic conditions of our research population. More specifically, the goals of this research were, first, to demonstrate empirically the existence of an identification with the world at large that transcends parochial interests in motivating cooperation in a global public-goods dilemma and, second, to test whether global social identity has an effect on cooperation that is independent of the effect of expectations concerning how other people in the world collective will behave.

Method

The sample

In each country, the research was conducted in a large metropolitan area and in surrounding areas that were less globalized. For example, in Russia, the research was conducted in Kazan (a globalized city in Tatarstan) and in more rural outposts. The other metropolitan areas included in the study were Columbus, Ohio, in the United States; Johannesburg, in South Africa;
Individuals’ propensities to cooperate with other people locally and globally were assessed in a multilevel sequential contribution (MSC) experiment. The MSC protocol resembles that of a standard multilevel public-goods experiment (Blackwell & McKee, 2003; Wit & Kerr, 2002). The full experiment consisted of three contribution decisions—to local, national, and global public goods. In this article, we focus on only the local and global (world) decision data. For each decision, participants were given 10 tokens. One token was worth the purchasing-power equivalent of $0.50. At the end of the experiment, participants received payoffs based on their allocation decisions and those of the other members of the groups to which they were assigned by a computer. No feedback was provided during the session.

Participants completed the experiment at one of several research sites in their region. Sessions included a maximum of 24 and a minimum of 4 participants. Participants were separated by privacy barriers so that their choices would not be influenced by observing what others were doing. At the beginning of each session, participants were told that they would be making decisions whose outcomes would be affected by the decisions of other people, including individuals from their local community (but perhaps not currently in the room), from elsewhere in the same country, and from other countries. Furthermore, because the sessions were not all simultaneous, we informed participants that some participants had already made their decisions; a participant’s choices and the choices of others would be matched by computer at the end of the session, and payoffs would be determined at that time. Experimental instructions and procedures were standardized across countries to ensure the cross-country comparability of the data sets.

Because of the logistic impossibility of conducting the experiment simultaneously in six countries, we relied on a dynamic matching algorithm in which past participants’ decisions were used to determine the payoffs of current participants, whose own decisions entered the data set as the experiment proceeded. By this method, a participant’s outcomes were determined by his or her own decisions and those made by arbitrarily selected groups of participants from the participant’s locality, the participant’s country, or other countries.

**Experimental paradigm**

The local decision. In the local decision, participants faced the same incentives as in a standard public-goods game. This two-choice decision was included in the protocol to familiarize participants with the experimental task and establish baseline levels of cooperation. In the local decision, participants decided how to allocate their tokens between their “personal” and “local” accounts. Each token put into the personal account was worth a single token and was guaranteed to count toward the individual’s payoff. Each token put into the local account was doubled, but then divided equally among the participant and 3 other (anonymous) participants from the same local area. Likewise, the participant received an equal share of the tokens that the other 3 local participants put into their local accounts. Therefore, the return to each individual for each token allocated to the local account—the marginal per capita return (MPCR)—was 0.5. In contrast, the return to the group—the marginal social return (MSR)—was 2. A selfish individual would allocate all 10 tokens to his or her personal account because it provided a larger return relative to the collective account. If all the individuals were selfish, each participant would keep his or her initial 10 tokens. In contrast, if all the individuals in a group allocated their tokens to the local account, this would result in a 20-token payoff to each group member.

After the instructions were read to the participants, they made several example decisions to make sure they understood the nature of the task and the effects of their own and other participants’ choices on their outcomes. Finally, participants made their actual allocations by putting red tokens into envelopes labeled “PERSONAL” and “LOCAL.” An assistant collected the envelopes and took them into the control room, where the allocations of the tokens were recorded in the algorithm and payoffs were calculated.

The world decision. In the world decision, participants chose how much to allocate among their personal account, their local account, and their “world” account. The structure of the incentives of the personal and local accounts was identical to that in the local decision. Tokens placed in the world account, however, were tripled by the experimenter and split equally among a world group of 12 people. The world group included the participant, a new group of 3 (anonymous) local people benefiting from the local account, and two groups of 4 people from different countries. Participants were not told which specific countries these other participants were from, but were informed that these countries were from any of the continents where the research was being conducted. Each participant received a 1/12 share of the allocations that the 12 people made to their world account.

The MPCR from allocations to the world account was 0.25, less than the MPCR from allocations to the local account (which was still 0.50). In contrast, the MSR of contributions to the world account was 3.0, larger than the MSR of contributions to the local account (which was still 2.0). Consequently, if all individuals allocated their endowment to their world account in the world decision, this would result in a larger payoff (30
tokens) to each participant than if all the individuals allocated their endowment to their local accounts (20 tokens). This structure of incentives characterizes a multilevel public-goods dilemma. A contribution to a higher-order public good typically benefits a larger number of people but at a smaller rate of return than a contribution to a lower-order public good.

Again, participants completed several example decisions to be certain they understood the nature of the nested global public good. Participants then made their allocations by putting yellow tokens into envelopes labeled “PERSONAL,” “LOCAL,” and “WORLD,” and the envelopes were collected and the allocations recorded.

**Expectancy measure**

After completing all allocation decisions, participants answered questions regarding their expectations of group members’ cooperative behavior. Specifically, they were asked how many tokens they believed fellow members of their local group allocated to the local account in the local decision. For example, the questions for Kazan, Russia, read:

In Decision 1 you had 10 red tokens. So did everyone else. You could put your tokens into your “PERSONAL” envelope or into your Kazan envelope. The other three people in your local group could also choose to put tokens into their own personal envelope or into the Kazan envelope. Please answer the following question.

How much do you think the other three people put into the Kazan envelopes in total (there is a maximum of 30 red tokens that they could put into them).

Then, on a separate form, they were asked how many tokens they believed their fellow members in the local group allocated to the local account in the world decision and how many tokens their fellow members in the world group allocated to the world account in the world decision.

This type of expectancy measure, completed after contribution decisions have been made, is a common operationalization of trust. However, any relationship between trust and cooperation is causally ambiguous; it is possible that individuals project their own choices onto fellow group members or write down expectations that justify their previous actions (Dawes, McTavish, & Shaklee, 1977). For this reason, we assessed expectancies about the local and world decisions after a delay. Even though we incorporated a delay, however, we assumed that the relationship between an individual’s own contribution decision and his or her reported expectancies about other participants’ contributions was mutually reciprocal.

**Questionnaire measures**

Participants next completed a questionnaire prior to receiving their payoffs. This questionnaire included measures of social identity and concern for global issues, a globalization index used in other phases of this research, and basic demographic questions on participants’ sex, age, education, and income level.

**Social identity.** A three-item measure assessed social identification at the levels of the local community, the nation, and the world. For example, in Kazan, Russia, these items read:

- How strongly do you feel attachment to your community in Kazan/to your community in Russia/to the world as a whole?
- How strongly do you define yourself as a member of your community in Kazan/of your community in Russia/of the world as a whole?
- How close do you feel to other members of your community in Kazan/to other members of your community in Russia/to the world as a whole?

Responses to each item were made on a rating scale from 1 (not at all) to 4 (very much).

The Cronbach’s alpha of the three social identity items was .78 at the local level, .72 at the national level, and .75 at the world level. The social identification score at each level (local social identity, LSI; national social identity, NSI; and global social identity, GSI) was calculated by summing responses to all three items. Thus, possible scores ranged from 3 to 12.

**Concern for global issues.** Because we expected social identification to be associated with concern for global welfare, we included a separate, four-item measure of such concern in the questionnaire. Participants were asked,

How concerned are you with the following issues:

- Global warming
- The spread across the planet of potentially dangerous diseases (e.g., HIV, SARS, bird flu)
- Making the action of International Criminal Courts of Justice more effective
- The persistent gap between rich and poor people around the world.

The response scale for each item was from 1 (not at all concerned) to 4 (very concerned). Responses were averaged to form the global-concern variable (Cronbach’s α = .64).

**Results**

The dependent variables were complete (i.e., we had contribution data for both the local and the world accounts) for 1,122
of the 1,195 participants in the study. Among these 1,122 individuals, missing questionnaire data occurred randomly across people and countries. To replace the missing data, we used PROC MI, a multiple imputation procedure in SAS, to represent a random sample of the missing values (Rubin, 1996).

**Cross-national comparisons**

Table 1 provides basic descriptive statistics for each country for the key measures: number of tokens contributed to the world account, expectations about the number of tokens other group members contributed to the world account, GSI, and concern for global issues.

**Intercorrelations**

The individual-level intercorrelations between contributions to the world account, expectations about other group members’ contributions to the world account, concern for global issues, and all levels of social identity are shown in Table 2. As expected, there was a high and significant correlation between contributions to the world account and expectations about other group members’ contributions, a finding consistent with the hypothesized reciprocal relationship between the two measures. Also significant was the predicted relationship between concern for global issues and GSI, both of which were also significantly correlated with contributions to the world account. Despite the significant intercorrelations among the social identity measures, only GSI had a significant bivariate correlation with contributions to the world account.

**Regression analysis**

Our main analysis tested whether GSI, concern for global issues, and expectations about other group members’ contributions predicted contributions to the world account, controlling for country (dummy-coded), demographic variables, baseline cooperation (local contributions), LSI, and NSI. Country was included as a control variable given the differences among countries in globalization and in mean levels of the predictor variables. The results of this regression are shown in Table 3. As anticipated, expectations about other group members’ contributions was the most important variable in the model; this finding affirmed the reciprocal relationship between expectations of cooperative behavior and contributions. However, it is important to note that GSI had a significant independent effect on contributions to the world account above and beyond the effect of expectations, even after the influences of income, education, local contributions, LSI, NSI, and country were accounted for.

Furthermore, although concern for global issues was correlated with contributions to the world account, it was not a significant predictor of contributions when GSI and expectations were included in the model. This finding supports the contention that social identification has unique effects on cooperative behavior that are distinct from the effects of general attitudes about global issues.

**Table 1. Means and Standard Deviations for the Primary Measures: Cross-National Comparisons**

| Country and measure | M   | SD  |
|---------------------|-----|-----|
| Iran (n = 179)      |     |     |
| Contributions to world account | 3.42 | 2.81 |
| Expectations of other group members’ contributions | 3.06 | 3.23 |
| Global social identity | 6.63 | 2.12 |
| Concern for global issues | 2.57 | 0.88 |
| South Africa (n = 159) |     |     |
| Contributions to world account | 3.81 | 1.98 |
| Expectations of other group members’ contributions | 3.73 | 2.77 |
| Global social identity | 7.88 | 2.76 |
| Concern for global issues | 2.81 | 0.84 |
| Argentina (n = 201) |     |     |
| Contributions to world account | 3.81 | 2.84 |
| Expectations of other group members’ contributions | 5.19 | 2.80 |
| Global social identity | 7.24 | 2.57 |
| Concern for global issues | 2.84 | 0.75 |
| Russia (n = 207) |     |     |
| Contributions to world account | 4.70 | 2.66 |
| Expectations of other group members’ contributions | 5.89 | 2.79 |
| Global social identity | 7.85 | 2.47 |
| Concern for global issues | 2.52 | 0.79 |
| Italy (n = 205) |     |     |
| Contributions to world account | 4.49 | 2.87 |
| Expectations of other group members’ contributions | 5.15 | 2.71 |
| Global social identity | 8.89 | 2.01 |
| Concern for global issues | 2.76 | 0.74 |
| United States (n = 171) |     |     |
| Contributions to world account | 5.79 | 3.16 |
| Expectations of other group members’ contributions | 5.78 | 2.75 |
| Global social identity | 8.29 | 2.35 |
| Concern for global issues | 2.97 | 0.85 |

Note: The countries are listed in ascending order of their country-level globalization.

**Discussion**

The results from this multination study suggest that an inclusive social identification with the world community is a meaningful psychological construct and that it plays a role in motivating cooperation that transcends parochial interests. It is important to note that self-reported identification with the world as a whole predicted behavioral contributions to a global public good independently of expectations about how much other participants in the group were likely to contribute. Although individuals with high levels of global social identification did generally have positive expectations about other participants’ contributions, the
size of their own contributions was systematically higher than what would be predicted from expectations alone. This finding is in line with the hypothesized mechanism of goal transformation: Global social identity is associated with a desire to maximize collective outcomes and motivates individuals to contribute to collective goods regardless of whether they expect a return on their investment.

Although our empirical evidence for the role of global social identity in motivating global cooperation is purely correlational, this study has the strength of including a behavioral outcome measure. Participants who described themselves as identified with the world community literally “put their money where their mouth was” in making decisions to contribute significant resources despite the potential cost to personal wealth. The monetary outcomes in the experiment were not trivial; across the three decision tasks, participants had the potential to acquire the purchasing-power equivalent of $40, depending on what they and other group members contributed to the collective accounts. Yet for each token that an individual contributed to the world account, he or she could count only on receiving a quarter of a token as his or her share of the collective good; choosing to contribute was a risky choice that sacrificed self-interest while increasing the collective wealth. Further, the nature of our sample—taken from the general population of six countries from around the world—is unique and adds to the external validity of our findings. Our participants—men and women ranging in age from 18 to 75—represented a broad spectrum of levels of social and economic status in countries that themselves ranged widely in aggregate levels of economic, social, and political globalization.

Across this range of countries and participant characteristics, self-reported identification with the world as a whole emerged as a unique predictor of the size of contributions to a global collective. Such social identity–based cooperation is particularly important for large groups facing public-goods dilemmas. In the absence of close monitoring and punishment of noncooperation, intrinsic motivation to cooperate and contribute to the group welfare is essential. Cooperation that does not depend exclusively on reciprocal trust may be required to solve global social dilemmas under conditions in which well-developed group norms, mutual recognition of shared group identity, and group punishment of noncooperation are absent. Symbolic identification with “the world as a whole” may serve to generalize the psychology of in-group behavior to a more inclusive collective that transcends the requirement of defined group boundaries.

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| Table 3. Results of the Regression Analysis: Predicting Contributions to the World Account |
|---------------------------------|------------------|------------------|------------------|------------------|
| Variable                        | β         | t(1, 122) | p         |                      |
| Income                          | 0.05     | 1.84     | 0.07     |                      |
| Education                       | 0.04     | 1.60     | 0.11     |                      |
| Contributions to the local account | 0.33   | 13.45     | 0.00     |                      |
| Concern for global issues       | 0.01     | 0.53     | 0.59     |                      |
| LSI                             | -0.02    | -0.86    | 0.39     |                      |
| NSI                             | -0.01    | -0.35    | 0.72     |                      |
| GSI                             | 0.09     | 3.35     | 0.00     |                      |
| Expectations about contributions to the world account | 0.41 | 16.27 | 0.00 |

Note: The table shows regression values after including country dummy codes as control variables. LSI = local social identity; NSI = national social identity; GSI = global social identity.
Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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Notes

1. The CGI scores of the six countries (on a scale from 0 to 1, with higher values representing greater globalization) are as follows: Iran, .1796; South Africa, .3398; Argentina, .3839; Russia, .6020; Italy, .6722; United States, .8700.

2. The size of contributions to the national collective in the national decision was highly correlated with the size of contributions to the global collective in the world decision ($r = .68, p < .01$). In general, individuals who made sizable contributions at the global level also did so at the national level, but not necessarily vice versa. Accounting for differences between contributions to the national and global collectives was beyond the scope of this study.

3. Income level is the income decile that a participant indicated he or she belonged to within his or her country’s income distribution; it is a country-specific measure.

4. However, in at least three countries, the average expectation of other group members’ contributions was substantially higher than the mean of participants’ own contributions, which suggests that, for some participants at least, trust in others’ generosity provided an opportunity for exploitation rather than reciprocation.

5. Country was entered as five dummy-coded variables (with the United States as the baseline case), so analyzing interaction terms would have added five more variables to the model. When we explored the regression results within each country, the effect of GSI on world contributions was positive in every case. The size of the effect did vary from country to country, but not in a systematic manner (specifically, the effect did not vary systematically with CGI).

6. Prior models predicting contributions to the world account showed that the variables of gender and age were not significant predictors. Therefore, gender and age were left out of the model in this analysis.

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