Introduction

Answering the question of social order is fundamental for explaining and understanding cooperative relations within and between societies. Part of the answer involves solving the puzzle of why individuals act in the benefit of others, even though it is costly to them (Diekmann 1985; Gintis et al. 2003). Prosocial behavior can be affected by various (social-)psychological, economic, and sociological factors (Batson 2011; Hechter 1988). This study focuses on a particular form of prosocial behavior and tries to shed more light on the question of how social class affects altruistic giving in the dictator game, in which one participant is endowed with a certain amount of money and has to allocate this amount between herself and another individual. Several studies found that higher-class actors have a lower tendency toward altruistic giving than lower-class actors; other studies found the opposite pattern. We show that social class has a positive effect on altruistic giving in the dictator game with a sizeable sample of residents of the United States using both an objective measure of social class—that is, a composite of income, education, and occupational prestige—and a subjective measure. Shedding more light on the mechanisms underlying the positive effect of social class, it is demonstrated that class affects altruistic giving not so much by differences in empathic concern but by differences in the marginal utility of money and contact heterogeneity. It is argued that the latter effect can be derived from Collins’s theory of interaction rituals and class cultures.

Keywords

experiment, dictator game, empathy, interaction rituals, financial stress
from lower-status backgrounds. Korndörfer, Egloff, and Schmukle (2015) relied on large-scale surveys such as the German Socio-Economic Panel, the American General Social Survey, and the American Consumer Expenditure Survey to demonstrate that social class correlates positively with charitable donations in Germany and the United States, respectively.

Against this background of conflicting evidence, the present study aims at contributing to the questions of how and by what mechanisms social class affects altruistic giving. Drawing on a sample of respondents from the United States, we find that class has a positive effect on altruistic giving in dictator games. This finding holds true using both an objective measure of social class based on income, education, and occupational prestige and a subjective measure wherein respondents have to directly indicate their social standing in the United States.

The present study contributes in three ways to the growing literature on the relationship between social class and altruistic giving. First, this study is unique in finding a positive impact of class on altruistic giving in the dictator game while working with a sizable sample from the United States (N = 1,003) and incentivized measures of observed prosocial behavior.

Second, we provide evidence on the mechanisms that might relate class to altruistic giving. By a series of nested regressions, we show that differences between social classes in terms of altruistic giving cannot be explained by differences in empathic concern, as suggested in previous studies (Piff et al. 2010; Piff et al. 2012). Instead we find that classes differ in altruistic giving to a considerable degree because of systematic differences in two alternative mediating factors. The first of these mediating factors has already been suggested in the literature (Andreoni, Nikiforakis, and Stoop 2017; Liebe and Tutić 2010) and relates to the fact that classes differ in their marginal utility of money. Put simply, we find that higher-class actors give more than lower-class actors because giving is less costly for them.

The third main contribution of this study is to introduce and provide evidence on another mediating factor between social class and altruistic giving. That is, we demonstrate that classes differ systematically in what we call “contact heterogeneity”. The higher the social class, the more evenly distributed is the time the actor spends with members from different social strata. As it turns out, respondents with greater contact heterogeneity show a greater tendency toward altruistic giving and a smaller tendency toward ingroup favoritism. In the Theoretical Considerations section we will argue that this mediating effect can be derived from Randall Collins’s theory of interaction rituals and class cultures. As such, this study is one of the very few quantitative studies that puts implications of one of the most original contributions to recent sociological theorizing to the test. All in all, the present study shows that social class has a positive effect on altruistic giving in the dictator game, and this effect is to a considerable extent due to differences in the marginal utility of money and heterogeneity of social contacts.

The remainder of this article is structured as follows: In the second section we provide theoretical arguments relating class to altruistic giving in the dictator game as debated in the literature, present our own idea derived from Collins’s theory of interaction rituals, and state testable hypotheses. The sample and our methods, in particular the operationalization of variables, are described in the third section. The fourth section contains our empirical results, where we focus on the role of the potential mediators of the effect of class on prosociality. The article concludes with a discussion of the limitations of our approach and suggests directions for further research.

### Theoretical Considerations

In the empirical literature on class and altruistic giving, class is generally operationalized by variables related to income, education, occupational prestige, or a composite thereof (Korndörfer et al. 2015; Piff et al. 2010; Piff et al. 2012). Besides these objective measures of class, some studies use subjective measures wherein participants indicate their social positioning with respect to some reference group such as a community or a country (MacArthur Scale; Adler et al. 2000). In our study, we use both an objective measure (objective class) and a subjective measure (subjective status). We expect objective class and subjective status to be highly correlated and to have a similar relationship with prosocial behavior. As a consequence, we employ the term “class” to refer to both objective class and subjective status and thereby simplify our exposition.

As already indicated, in our study we focus on one particular form of prosocial behavior, that is, altruistic giving in dictator games. In this game, there are two players: the dictator and the recipient. The dictator receives $10 from the experimenter and has to allocate this money between herself and the recipient. The amount allocated to the recipient is often referred to as a donation. The recipient is merely informed about the decision of the dictator and cannot affect the allocation. Donations in the dictator game are often interpreted as instances of altruistic giving.1 We informed each dictator about the social class of the recipient before the dictator made a donation decision; we used three classes: (1) upper or upper-middle class, (2) lower-middle class, and (3) working or lower class (see the Data, Methods, and Variables section for details).

1 Following a terminological convention, we say that dictator A behaves more altruistically than dictator B if A donates a higher amount than B. However, note that this convention is simplistic in abstracting from background information about dictators A and B. For instance, if A is much wealthier than B, a high donation by A does not necessarily need to be interpreted as more altruistic than a low donation by B.
In the following we derive several hypotheses regarding both the effect of the class of the dictator and the class of the recipient on donations in the dictator game. In addition, we theorize on three mediators that might contribute to explaining the effect of the class of the dictator. While all of our hypotheses are formulated with respect to the dictator game, note that most theoretical arguments used to derive these hypotheses are in fact not restricted to altruistic giving but refer to the broader class of prosocial behavior.

In previous studies, there are arguments and empirical support for two conflicting hypotheses about the relationship between social class/status and altruistic giving. Several studies find evidence for a positive effect of class on altruistic giving (Benenson et al. 2007; Kornrölfer et al. 2015; Liebe and Tutić 2010; Liebe, Naumann, and Tutić 2017):

**Hypothesis 1:** The higher the social class of the dictator, the more she will donate in the dictator game.

At the same time, there are plenty of studies that find evidence for a negative effect of class on altruistic giving (Chen et al. 2013; Guinote et al. 2015; Piff et al. 2010):

**Hypothesis 2:** The higher the social class of the dictator, the less she will donate in the dictator game.

In light of these conflicting hypotheses, several mechanisms have been suggested as to why social class might affect altruistic giving positively (hypothesis 1) and negatively (hypothesis 2), respectively. These mechanisms generally posit certain variables in which classes presumably differ and that affect not only altruistic giving but prosocial behavior more generally. That is, these variables are theorized to act as mediators of the effect of social class on prosociality. Influentially, Piff et al. (2010) and Piff et al. (2012) draw on social-psychological research on contextualism (Kraus and Keltner 2009; Kraus, Piff, and Keltner 2009) and place heavy emphasis on class-based differences in empathy. According to their reasoning, higher-class actors control more resources than do lower-class actors. Because of that, higher-class subjects can achieve many of their goals without the help or consent of others; that is, they are less dependent on others in comparison to lower-class actors. Due to their greater dependence on others, “lower class individuals are more concerned with the needs of others relative to upper class individuals” (Piff et al. 2010:772). Since empathic concern is known to lead to a greater tendency toward prosocial behavior (e.g., Batson and Moran 1999; Eisenberg 2002), class-based differences in prosocial behavior might be due to class-based differences in empathy.

**Hypothesis 3a:** The greater the empathic concern of the dictator, the more she will donate in the dictator game.

**Hypothesis 3b:** The higher the social class of the dictator, the lower will be her empathic concern.

Another mechanism relating class to prosocial behavior argues not via differences in mental dispositions but via differences in restrictions. The mere fact that higher-class actors control more resources (e.g., income) than do lower-class actors implies that any prosocial act is less costly for them. That is, given some type of social preference, higher-class actors are supposed to act more prosocially than are lower-class actors because of a microeconomic income effect (Liebe and Tutić 2010). Put differently, the marginal utility of money is lower for higher-class than for lower-class actors because they generally have more money. Hence, higher-class actors face smaller (opportunity) costs than do lower-class actors when engaging in prosocial acts that involve the transfer of material resources (Andreoni et al. 2017).

**Hypothesis 4a:** The greater the amount of material resources the dictator controls, the more she will donate in the dictator game.

**Hypothesis 4b:** The higher the social class of the dictator, the greater will be the amount of material resources she controls.

In this article we suggest and test an additional mediator of the effect of class on prosocial behavior, which relates to the theory of interaction rituals by Randall Collins (2004). Building on Durkheim’s sociology of religion and Goffman’s interactionism, Collins develops a genuine sociological theory of group solidarity. According to his approach, actors engage in interaction rituals. Any interaction in which there is physical copresence between a number of actors, a common mood, and a common focus of attention sets the stage for an interaction ritual. Interaction rituals differ in the extent to which collective effervescence (Durkheim [1915] 2008), that is, an intense emotional state, occurs through a process in which the common mood and the common focus of attention strengthen each other via a positive feedback loop. Intense interaction rituals lead to moral solidarity among the participants of the ritual and a common pool of cultural beliefs.

Collins uses this baseline model of interaction rituals to work out an interactionist form of conflict sociology and a micro-based theory of class cultures (Collins 1988). According to his exposition, classes differ in the types of interaction rituals they tend to participate in and hence in the type of solidarity they enact toward others. He argues that classes differ, among other things, in terms of the social diversity of a generic member’s chain of interaction rituals. Social diversity indicates the extent to which an actor participates in interaction rituals with varying interaction partners and also the extent to which there is variance in the common foci of attention during these interaction rituals. Put differently, social diversity indicates an actor’s position on the local-cosmopolitan continuum. Citing evidence from classic studies on stratification from the 1960s, Collins assumes that classes differ in social diversity, such that higher-class actors...
tend toward engaging in more heterogeneous interaction rituals with varying interaction partners, whereas lower-class actors are confined to “family, neighborhood, and a long-term circle of friends” (Collins 1988:216). More recent evidence for this claim is provided by Pichler and Wallace (2009), who conducted multilevel analyses on samples from 27 European countries and concluded:

Higher social classes, including people in professional or managerial jobs are more embedded in a broader range of networks through their activities in formal associations. There was also evidence that higher classes meet different people more often whereas working class people tend to have a smaller circle of social connections. (Pichler and Wallace 2009:330)

In terms of both the cultural ideas an actor endorses and her moral solidarity, Collins’s theory of interaction rituals predicts profound effects of social diversity. Low levels of social diversity lead to a very one-sided focus on the particular cultural orientations of the group of interaction partners, which are seldom or even never put into a broader context and hence relativized. Similarly, actors with interaction chains of low diversity tend to restrict their moral solidarity to their long-standing interaction partners and engage in a distrustful stance toward strangers: “Working-class values, like those of everyone else, emphasize the virtues of their own life situations: in this case, physical toughness, loyalty to friends, courage and wariness towards strangers and superiors” (Collins 2009:30). On the contrary, high social diversity favors open-mindedness toward new ideas and a relativistic attitude toward cultural orientations. High social diversity also leads to a more universalistic moral solidarity, which is not restricted to a particular group of interaction partners and supports “generalized trust in a wide range of interactions” (Collins 2004:117). Indirect evidence for the latter hypothesis comes from studies that find that indicators of social class and status generally correlate positively with generalized trust (e.g., Hooghe et al. 2009).

Needless to say, this short exposition does not give justice to the subtle nuances of the theory of interaction rituals. However, we believe that this sketch of one core argument of Collins’s theory of class cultures points toward an important mediating mechanism of the relationship between class and prosociality. Classes tend to differ in the heterogeneity of their contacts and hence in the coparticipants of their interaction rituals. As a consequence, the moral solidarity of lower-class actors should be more restricted and less universalistic than the moral solidarity of higher-class actors. In this article, we test this reasoning in the form of the following two hypotheses:

**Hypothesis 5a**: The more heterogeneous the contacts of the dictator, the more she will donate in the dictator game.

**Hypothesis 5b**: The higher the social class of the dictator, the more heterogeneous will be her contacts.

Hitherto we have theorized only on the effect of the class of the dictator. As already indicated, in our experiment, participants were informed about the class of the recipient. The first thing to note when reasoning about the effect of the recipient’s class is that any kind of positive donation warrants some form of prosocial motivation of the dictator. Clearly, if a dictator is selfish and only interested in her own monetary payoff, she keeps all of the pie for herself and donates nothing to any recipient, regardless of the latter’s class. Since positive donations in the dictator game are a regular occurrence (Engel 2011), a considerable portion of our participants will carry some form of prosocial preferences. Following Liebe and Tutić (2010, 2018), we argue that many important forms of prosocial preferences, that is, altruism, warm-glow giving (Andreoni 1990), and inequality aversion (Bolton and Ockenfels 2000; Fehr and Schmidt 1999), suggest that recipients of a higher social class receive smaller monetary donations. With respect to a pure altruist, who is truly interested in the welfare of others, this follows from the fact that a monetary donation of a given size is more effective in enhancing the welfare of a relatively underprivileged recipient than the welfare of a relatively privileged recipient. Similarly, a dictator with a warm-glow motive of giving, that is, an actor who derives intrinsic benefits from the act of giving, might be inclined to give more to recipients from a lower social class because she derives greater moral satisfaction from giving to recipients in greater need. Also, an orientation toward inequality aversion provides a motive to give nothing to recipients of a higher social class, share fairly with recipients of a similar class, and give more to recipients of a lower class. Taken together, these arguments suggest the following hypothesis:

**Hypothesis 6**: The higher the social class of the recipient, the less she will receive in the dictator game.

A different perspective on the interplay of the classes of the dictator and recipient comes from the social-psychological theory of social identity (Tajfel and Turner 1986; Tajfel et al. 1971) and in-group bias (Yamagishi and Kiyonari 2000; Yamagishi and Mifune 2008). According to this approach, actors are intrinsically motivated to maintain a positive identity, which derives, among other things, from their membership in positively evaluated groups. If members of the in-group obtain higher payoffs than members of the out-group, this

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2Note that we are theorizing on prosocial preferences as a motive for prosocial behavior. It is important to differentiate between these two concepts to avoid tautologies. For instance, seemingly prosocial behavior such as placing trust in a trust game might be due to prosocial preferences but also might be due to egoistic preferences.
provides one criterion under which the in-group fares better than the out-group and hence is a source for positive identity. To the extent that the classes figure as in-groups, that is, to the extent that members of classes actually identify themselves with their classes, this reasoning suggests the following hypothesis:

**Hypothesis 7:** Dictators will demonstrate in-group bias; that is, dictators will donate more to recipients from a similar social class than to recipients from a different social class.

Interesting to note, Collins’s theory of class cultures is highly informative regarding the question under which aggregates of actors such as classes actually form a group with a collective identity (Collins 2004). To the extent that members of classes stay among themselves in performing interaction rituals, a strong collective identity as a group should be expected. Conversely, if members of classes engage in ritual activities that cut across class boundaries, classes should not figure as an important marker for social identity. For this reason, we expect that heterogeneity among contacts moderates the prevalence of in-group bias.

**Hypothesis 8:** The more heterogeneous the contacts of the dictator, the less she will demonstrate in-group bias.

**Data, Methods, and Variables**

**Data**

The data were collected in a general population survey conducted online in February 2017. Therefore, the dictator game was embedded in a cross-sectional web survey. Respondents were members of an access panel in the United States. Panel members were actively recruited (online and offline) and reimbursed for participating in a survey. The access panel provider regularly checks the quality of the data. The panel provider sent invitations to 11,446 panel members to participate in the survey, and we closed the survey when the target number of respondents was realized. A total of 1,524 respondents took part, of whom 119 were break-offs (i.e., the response rate is 13.3 percent, response rate 1; American Association for Public Opinion Research 2016). On average, respondents needed 13 minutes (median) to answer the survey. The sample is rather representative for the population in the United States with respect to sex (48 percent in the sample vs. 49 percent in the general population) but biased toward older (median of 53 years in the sample vs. 37 years in the general population) and more highly educated individuals (48 percent with postgraduate degree in the sample vs. 34 percent in the general population). While the sample bias is certainly a drawback, it should be kept in mind that most of the experimental studies in this field of research are nonrepresentative and at least our data have considerable variance on social class variables.

All our analyses refer to observations in which none of the involved variables (including mediators and controls) has a missing value (listwise deletion). From our original sample with 1,524 observations, this leaves us with 1,003 observations.

**Methods**

As already indicated, we use the dictator game as a measure for altruistic giving. To facilitate a better understanding of our measurement instrument, we present its exact wording:

You receive $10. You can allocate this amount between yourself and a participant in a similar study. This participant belongs to the upper or upper-middle class. It is your decision alone.

What is your decision?

Please enter the amounts of money in the places marked. . . .

Use full dollar amounts, that is, $0, $1, $2, $3, $4, $5, $6, $7, $8, $9, or $10.

Of $10

I would keep $ . . . for myself

and give $ . . . to the other participant from the upper or upper-middle class.

The class of the other player in the dictator game was experimentally manipulated. We used three different classes: (1) upper or upper-middle class, (2) lower-middle class, and (3) working or lower class. Our sample consists of 330 dictator games with recipients from class 1, 336 dictator games with recipients from class 2, and 337 dictator games with recipients from class 3.

To control experimental conditions regarding the social class of the recipient and to ensure corresponding variance, our research design involved deception, that is, the recipients in the dictator game did not exist. Disciplines in the social sciences differ with respect to the question of whether the deception of participants is ethically acceptable in experimental research, and research shows that this deception does not impair the validity of experimental results (see Barrera and Simpson 2012). We closely collaborated with the survey organization that approved this procedure and did not perceive any harm to their access panel members resulting from our experimental procedure. Respondents were paid according to their decision in the dictator game task as well as other tasks implemented in the survey. They received their payments in their bonus account from the survey organization within two weeks of completion of the survey. Overall, we paid out 1,333 respondents who, on average, obtained $5.95.
Variables

We use donations in the dictator game as a measure for altruistic giving. The respective variable is called donation (M = 3.64, SD = 2.75) and is not standardized to preserve its intuitive interpretation as a dollar amount.

Objective class is a composite of income, educational attainment, and occupational prestige. Income was measured on a 15-point scale ranging from 1 = less than $10,000 to 15 = at least $200,000.3 From this we constructed a metric income variable using midpoints of this scale and the extrapolation formula by Hout (2004) for the highest category (M = 63,573.72, SD = 46,675.91). Education was measured on a 3-point scale with 1 = high school graduation or less, 2 = college graduation, and 3 = postgraduate degree (M = 1.61, SD = 0.71). Occupation was measured via an open question. The answers were coded according to the International Standard Classification of Occupations (ISCO-2008) and transformed into the Standard Index of Occupational Prestige Scala (SIOPS; Treiman 1977) (M = 44.48, SD = 14.00) using publicly available conversion tables (Ganzeboom and Treiman 2012). Income, educational attainment, and occupational prestige were fully standardized, before objective class was constructed as their arithmetic mean (M = 0.00, SD = 0.79), and then fully standardized. In some analyses, we use a categorical objective class variable, which differentiates between lower-class dictators, middle-class dictators, and higher-class dictators based on the terciles of objective class.

Subjective status was measured by the societal version of the MacArthur Scale (Adler et al. 2000), on which participants indicated their social standing in the United States using a 10-point scale ranging from 1 to 10 (M = 5.33, SD = 1.84).4 The subjective status question was placed before the dictator game task. In our analyses, we use the fully standardized version of this variable. In some analyses, we use a categorical subjective class variable, which differentiates between lower-status dictators, middle-status dictators, and high-status dictators based on the terciles of subjective status.

Empathy was measured using an additive index of three items (M = 9.17, SD = 1.65) taken from the empathic concern subscale of the Interpersonal Reactivity Index (Davis 1980) and then fully standardized.5

We use a subjective measure of financial stress to test hypotheses 4a and 4b, which refer to the amount of material resources an actor controls. Participants answered the question, “How satisfied are you with the financial situation of your household?” on a 4-point scale ranging from 1 = very satisfied to 4 = very dissatisfied (M = 2.34, SD = 0.82). Financial stress is the fully standardized version of this variable.

Contact heterogeneity is constructed as follows. Participants were confronted with the question, “Considering the time you spend in the company of others, either at work or in your spare time: Please indicate the percentage of this time you spend with members of the following social classes.” Three classes were given, that is, (1) upper or upper-middle class, (2) lower-middle class, and (3) working or lower class. From this we calculated a measure of dispersion, inspired by the Herfindahl index (Hirschman 1964) in oligopoly theory:

\[ d_i = 1 - \sum_{j=1}^{3} \frac{1}{3} - \frac{p_j}{100} \]

in which \( p_j \) denotes the percentage of time participant \( i \) spends with class \( j \) (M = 0.77, SD = 0.21). Note that \( d_i \) takes values between 1/3 and 1, where 1 indicates that the participant spends all of her time with just one class. Contact heterogeneity is the fully standardized version of \( d \). Sometimes we use a dichotomized version of this variable, which differentiates between high heterogeneity and low heterogeneity based on the median of contact heterogeneity.

In our multivariate analyses we use a number of control variables. Male is a dummy indicating the sex of the participant (M = 0.48). Caucasian is a dummy indicating whether the participant is Caucasian or of another ethnicity (M = 0.83). Age is measured in years and not standardized (M = 50.12, SD = 14.72). Religiosity is a dummy indicating whether the participant classifies herself as religious (M = 0.57).

As already indicated, we use three kinds of classes: (1) upper or upper-middle class, (2) lower-middle class, and (3) working or lower class. In our multivariate analyses we use lower-middle class as reference. The variable higher-class recipient is a dummy indicating whether the recipient in the dictator game belongs to the upper or upper-middle class.

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3These three items are “When I see someone being taken advantage of, I feel somewhat protective towards them,” “Other people’s misfortunes do not normally bother me too much,” and “I am often quite affected by things I see happen.” Participants indicated to what extent these statements apply to them on a 4-point scale ranging from 1 = does not apply at all to 4 = does fully apply. In the construction of empathy, one item is reverse coded.
The variable *lower-class recipient* is a dummy indicating whether the recipient in the dictator game belongs to the working or lower class.

**Empirical Results**

In the following we present the results of our study. First, we have a look at the bivariate relationship between class and altruistic giving. Second, we elucidate how the potential mediators—empathy, financial stress, and contact heterogeneity—correlate with class and altruistic giving. Finally, we explore the extent to which the potential mediators actually explain the effect of class on altruistic giving.

**Objective Class, Subjective Status, and Altruistic Giving**

As expected, objective class and subjective status are positively correlated ($r = .46$, $p < .00$). In addition, objective class as well as subjective status are positively but weakly correlated with giving in the dictator game (objective class and donation: $r = .07$, $p < .02$; subjective status and donation: $r = .07$, $p < .02$). Figure 1 depicts the predicted values of the corresponding two bivariate regressions. These bivariate relationships observed in our study validate hypothesis 1 and reject hypothesis 2.

Figure 2 shows how the class of the recipient affects donations. Apparently, recipients from the lower and middle classes receive about the same amount of average donations,
Table 1. Donations Depending on Class/Status of Dictator and Class of Recipient.

| Recipient | Lower Class | Middle Class | Higher Class |
|-----------|-------------|--------------|--------------|
|           | Low Status  | Middle Status| High Status  |
| Low class | 3.90 (2.58) | 3.60 (2.68)  | 4.59 (3.04)  |
| Middle class | 4.21 (2.63) | 4.00 (2.63)  | 4.08 (2.88)  |
| Higher class | 2.61 (2.70) | 2.84 (2.32)  | 2.57 (2.42)  |
|           | 2.23 (2.38) | 2.56 (2.50)  | 3.02 (2.52)  |

whereas higher-class recipients receive significantly lower donations. By and large, this finding validates hypothesis 6.

Using the categorical versions of both objective class and subjective status, Table 1 provides the arithmetic means of donations as a function of both the objective class (upper number) and the subjective status (lower number) of the dictator and the class of the recipient (standard deviations are provided in parentheses). Notably, we find that dictators from the low class (status group) as well as dictators from the high class (status group) do not show an in-group bias. We interpret this as negative evidence regarding hypothesis 7. In addition, Table 1 reveals that with respect to both dictators and recipients, the low class and the middle class figures are quite similar, whereas the high class stands out. That is, conditional on the class of the recipient, two-sided t-tests reveal that lower-class and middle-class dictators do not differ significantly in their donation behavior (lower-class recipient: t = 0.39, p > .39; middle-class recipient: t = 0.61, p > .54; higher-class recipient: t = -0.68, p > .50). Also, conditional on the class of the dictator, lower-class and middle-class recipients do not differ significantly in the amount they receive as donations (lower-class dictator: t = -0.87, p > .39; middle-class dictator: t = -1.05, p > .30; higher-class dictator: t = 0.38, p > .76). These findings justify pooling low- and middle-class recipients as well as low- and middle-class dictators in some of the following analyses.

Potential Mediators—Empathy, Financial Stress, and Contact Heterogeneity

Objective class does not significantly correlate with empathic concern for others (r = -.04, p < .17). Participants with higher objective class perceive the financial situation of their households as less stressful (r = -.35, p < .00). As expected, objective class does correlate with a more diversified network of contacts (r = .18, p < .00). Figure 3 depicts predicted values of the corresponding three bivariate regressions. Taken together, these findings validate hypotheses 4b and 5b and reject hypothesis 3b.

We find that financial stress correlates negatively with giving in dictator games (r = -.12, p < .00), whereas empathy (r = .14, p < .00) and contact heterogeneity (r = .17, p < .00) have a positive and significant impact on prosocial behavior. These findings validate hypotheses 3a, 4a, and 5a.

Before delving into more nuanced multivariate regressions and mediation analysis, let us briefly summarize our preliminary findings. First, class has a positive effect on altruistic giving in the dictator game. Second, the higher the class of a participant, the lower is her financial stress and the more diversified are her social contacts. These two effects contribute toward and might potentially explain the positive correlation between class and giving in dictator games. Third, although more empathic participants do indeed show a greater tendency toward altruistic giving, unlike stipulated by Piff et al. (2010) and Piff et al. (2012), classes do not differ substantially in their empathic concern. Hence, empathy cannot explain the observed positive effect of class on prosocial behavior. It remains to be seen whether the two remaining mediators—financial stress and contact heterogeneity—explain a considerable amount of the effect of class on altruistic giving.

Nested Regressions

Table 2 summarizes the results of a series of regressions. First, as a baseline model we regressed giving in the dictator game on class of the dictator (objective class); class of the recipient (high, middle, low; middle class as reference); and controls male, age, caucasian, and religiosity (model 1). This model gives the total effect of objective class of the dictator on altruistic giving (coefficient = 0.18, p < .03). Model 2 adds empathy to the baseline model, which affects altruistic giving in the expected manner and reaches statistical significance (coefficient = 0.37, p < .00). At the same time, however, the coefficient of objective class increases to 0.20 and improves in statistical significance (p < .02). Consequently, differences in altruistic giving between classes cannot be explained by differences in empathic concern. Model 3 includes financial stress in the set of independent variables.
Figure 3. Bivariate regressions of potential mediators on objective class.

As expected from our preliminary analyses, financial stress reduces the tendency toward altruistic giving in the dictator game. In addition, the coefficient of objective class drops to 0.09 and loses significance (p < 0.34). Hence, to a considerable extent, classes differ in altruistic giving because they differ in their perceived financial stress. In comparison to model 1, model 4 includes contact heterogeneity in addition. As expected, the more diverse the social contacts of a participant, the more she will donate in the dictator game. Since the coefficient of objective class drops to 0.10 and loses significance (p < 0.22), we can infer that differences in prosocial behavior between the classes are to a considerable extent due to differences in contact heterogeneity. Finally, model 5 consolidates our findings. It includes all potential mediators. All mediators have similar coefficients as in models 1 through 4 and are highly significant. This full model yields the direct effect of objective class on altruistic giving, which is independent from the potential mediators. The coefficient of objective class is 0.03 and is clearly insignificant (p < .75).

In Table 3, models 6 through 10 reveal that qualitatively very similar results are obtained when we perform the same set of nested regressions and only substitute subjective status for objective class. All in all, models 1 through 10 show that the total effect of class on altruistic giving in the dictator game is positive and can to a large extent be explained by the fact that higher-class participants perceive less financial stress and have a more diversified net of social contacts.

Finally, let us note that these regressions corroborate hypothesis 6. Tables 2 and 3 demonstrate that higher-class recipients obtain significantly lower donations than do middle- and lower-class recipients. This replicates findings according to which the class of the potential beneficiary of prosocial acts has a negative effect on the extent of prosocial behavior (Liebe and Tutić 2010; Van Doesum, Tybur, and Van Lange 2017).

Mediation Analysis

Our series of nested regressions has demonstrated that the total effect of class on donations in dictator games is positive and to a considerable extent mediated by financial stress and contact heterogeneity. This follows from the fact that the coefficient of class drops to lower numbers and loses significance as soon as we control for financial stress or contact heterogeneity. In this subsection we take a closer look at the extent to which the effect of class is mediated by the potential mediators. To this end we present the results of mediation analyses in Table 4, the logic of which is visualized in Figure 5. For
### Table 2. Multivariate Analyses of Donations Using Objective Class.

| Variable               | Model 1    | Model 2    | Model 3    | Model 4    | Model 5    |
|------------------------|------------|------------|------------|------------|------------|
| Objective class        | 0.18*      | 0.20*      | 0.09       | 0.10       | 0.03       |
|                        | (0.08)     | (0.08)     | (0.09)     | (0.09)     | (0.09)     |
| Higher-class recipient | −1.56***   | −1.55***   | −1.55***   | −1.53***   | −1.52***   |
|                        | (0.21)     | (0.20)     | (0.21)     | (0.20)     | (0.20)     |
| Lower-class recipient  | −0.21      | −0.19      | −0.22      | −0.20      | −0.19      |
|                        | (0.21)     | (0.20)     | (0.20)     | (0.20)     | (0.20)     |
| Male                   | −0.22      | −0.06      | −0.27      | −0.23      | −0.13      |
|                        | (0.17)     | (0.17)     | (0.17)     | (0.17)     | (0.17)     |
| Age                    | −0.00      | −0.00      | −0.00      | −0.00      | −0.00      |
|                        | (0.01)     | (0.01)     | (0.01)     | (0.01)     | (0.01)     |
| Caucasian              | 0.37       | 0.33       | 0.35       | 0.39†      | 0.34       |
|                        | (0.23)     | (0.23)     | (0.23)     | (0.23)     | (0.23)     |
| Religiosity            | 0.45**     | 0.38*      | 0.40*      | 0.37*      | 0.26       |
|                        | (0.17)     | (0.17)     | (0.17)     | (0.17)     | (0.17)     |
| Empathy                | 0.37***    | 0.37***    | 0.37***    | 0.37***    | 0.35***    |
|                        | (0.09)     | (0.09)     | (0.09)     | (0.09)     | (0.09)     |
| Financial stress       | −0.26**    | −0.27**    |            |            |            |
|                        | (0.09)     | (0.09)     |            |            |            |
| Contact heterogeneity  | 0.42***    | 0.37***    |            |            |            |
|                        | (0.08)     | (0.08)     |            |            |            |

Figure 4. Bivariate regressions of potential mediators on subjective status.

(continued)
Table 2. (continued)

| Variable            | Model 1       | Model 2       | Model 3       | Model 4       | Model 5       |
|---------------------|---------------|---------------|---------------|---------------|---------------|
| Constant            | 3.89***       | 3.90***       | 3.92***       | 3.86***       | 3.90***       |
|                     | (0.36)        | (0.36)        | (0.36)        | (0.36)        | (0.35)        |
| R²                  | .076          | .093          | .084          | .098          | .120          |
| N                   | 1,003         | 1,003         | 1,003         | 1,003         | 1,003         |

†p < .10, *p < .05, **p < .01, ***p < .001.

Table 3. Multivariate Analyses of Donations Using Subjective Status.

| Variable             | Model 6      | Model 7      | Model 8      | Model 9      | Model 10     |
|----------------------|--------------|--------------|--------------|--------------|--------------|
| Subjective status    | 0.21*        | 0.23**       | 0.08         | 0.16†        | 0.04         |
|                      | (0.08)       | (0.08)       | (0.10)       | (0.08)       | (0.10)       |
| Higher-class recipient| −1.58***    | −1.58***     | −1.56***     | −1.55***     | −1.52***     |
|                      | (0.21)       | (0.20)       | (0.21)       | (0.20)       | (0.20)       |
| Lower-class recipient| −0.23        | −0.21        | −0.23        | −0.21        | −0.19        |
|                      | (0.20)       | (0.20)       | (0.20)       | (0.20)       | (0.20)       |
| Male                 | −0.26        | −0.10        | −0.28†       | −0.26        | −0.13        |
|                      | (0.17)       | (0.17)       | (0.17)       | (0.17)       | (0.17)       |
| Age                  | −0.00        | −0.00        | −0.00        | −0.00        | −0.00        |
|                      | (0.01)       | (0.01)       | (0.01)       | (0.01)       | (0.01)       |
| Caucasian            | 0.36         | 0.32         | 0.35         | 0.39         | 0.34         |
|                      | (0.23)       | (0.23)       | (0.23)       | (0.23)       | (0.23)       |
| Religiosity          | 0.42*        | 0.34*        | 0.39*        | 0.35*        | 0.26         |
|                      | (0.17)       | (0.17)       | (0.17)       | (0.17)       | (0.17)       |
| Empathy              | 0.37***      |              |              |              | 0.35***      |
|                      | (0.09)       |              |              |              | (0.09)       |
| Financial stress     | −0.25*       |              | −0.26**      |              |              |
|                      | (0.10)       |              | (0.10)       |              |              |
| Contact heterogeneity|              |              |              | 0.42***      | 0.37***      |
|                      |              |              |              | (0.08)       | (0.09)       |
| Constant             | 3.84***      | 3.84***      | 3.90***      | 3.83***      | 3.89***      |
|                      | (0.36)       | (0.36)       | (0.36)       | (0.36)       | (0.35)       |
| R²                  | .078          | .095          | .084          | .100         | .120         |
| N                   | 1,003         | 1,003         | 1,003         | 1,003         | 1,003         |

†p < .10, *p < .05, **p < .01, ***p < .001.

each model in Tables 2 and 3, which contains a set of mediators $1, \ldots, k$ we regressed each potential mediator $i$ on class as well as control variables (male, age, Caucasian, religiosity) and the relevant parametric variables under experimental control (higher-class recipient, lower-class recipient) to obtain the effect of class on that mediator $\alpha_i$. From the respective model in Tables 2 and 3, we obtain the effect of the mediator $i$ on donations $\beta_i$. Due to the simplicity of linear regression, the following two equations hold:

$$\text{total effect of class} = \text{direct effect of class} + \text{indirect effect of class}.$$  

$$\text{indirect effect of class} = \sum_{i=1}^{k} \alpha_i \beta_i$$

The direct effects of class as well as their standard errors can be read off the respective models in Tables 2 and 3. The total effects of class as well as their standard errors are given in models 1 and 6, respectively.

Table 4 depicts the decompositions of the total effects of class in direct as well as indirect effects. In addition, the table presents how much each potential mediator contributes toward the respective indirect effect by depicting the products $\alpha_i \beta_i$ as well as the ratios $100(\alpha_i \beta_i)/(\text{indirect effect of class})$. The numbers in parentheses are standard errors; the standard errors of indirect effects are bootstrapped (1,000 repetitions), which is indicated by the square brackets. The Sobel test of mediation holds that the effect of class on donations is mediated by the respective set of potential mediators if the indirect effect is significant.

We find that financial stress and contact heterogeneity mediate the effects of class on altruistic giving, while empathy does not. Financial stress appears to be
somewhat more important in explaining class effects on altruistic giving than contact heterogeneity, in particular with respect to subjective status. Taken together, the potential mediators account for 84 percent of the effects of objective class and 80 percent of the effects of subjective status.

Table 4. Mediation Analyses of Donations.

| Model | Class | Total Effect | Direct Effect | Indirect Effect | Potential Mediator |
|-------|-------|--------------|---------------|-----------------|--------------------|
|       |       | Empathy | Financial Stress | Contact Heterogeneity |
| 2     | 0.18* | 0.20* | −0.01 | −0.01 |          |
|       | (0.08) | (0.08) | [0.01] | [0.01] |          |
|       | 100% | 108% | −8% | 100% |          |
| 3     | 0.18* | 0.09  | 0.09** | 0.09** | 0.08*** |
|       | (0.08) | (0.09) | [0.03] | [0.03] |          |
|       | 100% | 48% | 52% | 100% |          |
| 4     | 0.18* | 0.10  | 0.08*** |            | 0.08*** |
|       | (0.08) | (0.09) | [0.02] |            |          |
|       | 100% | 57% | 43% |            | 100%     |
| 5     | 0.18* | 0.03  | 0.15*** | −0.01 | 0.10**  | 0.07*** |
|       | (0.08) | (0.09) | [0.04] | [0.01] | [0.03] | [0.02]  |
|       | 100% | 16% | 84% | −9% | 63% | 45% |
| 7     | 0.21* | 0.23** | −0.02 | −0.02 |          |
|       | (0.08) | (0.08) | [0.01] | [0.01] |          |
|       | 100% | 108% | −8% | 100% |          |
| 8     | 0.21* | 0.08  | 0.13* | 0.13* |          |
|       | (0.08) | (0.10) | [0.05] | [0.05] |          |
|       | 100% | 38% | 62% | 100% |          |
| 9     | 0.21* | 0.16† | 0.06** |            | 0.06** |
|       | (0.08) | (0.08) | [0.02] |            |          |
|       | 100% | 73% | 27% |            | 100%     |
| 10    | 0.21* | 0.04  | 0.17*** | −0.02 | 0.13* | 0.05** |
|       | (0.08) | (0.10) | [0.05] | [0.01] | [0.05] | [0.02]  |
|       | 100% | 20% | 80% | −10% | 80% | 30% |

Note: The numbers in parentheses are standard errors; the standard errors of indirect effects are bootstrapped (1,000 repetitions), which is indicated by the square brackets.

†p < .10. *p < .05. **p < .01. ***p < .001.
In-Group Bias and Contact Heterogeneity

As already indicated, there is not much evidence for the prevalence of an in-group bias in our data: Only one out of three classes shows a pattern of donations that is compatible with in-group favoritism. However, Table 1 also demonstrates that lower-class and middle-class dictators do not differ much in their donating behavior. In addition, lower-class and middle-class recipients do not differ substantially in the amount of donations they receive. As Table 5 shows, we can improve the case for the existence of an in-group bias in our data by pooling dictators and recipients accordingly. Now, one out of two classes (status groups) shows a pattern of donating behavior that is compatible with in-group favoritism.

Focusing on dictators from the low or middle class (status group), we can get a first take on hypothesis 8 by checking whether dictators with high contact heterogeneity show a smaller amount of in-group bias than do dictators with low contact heterogeneity. Using the dichotomized version of contact heterogeneity, Figure 6 provides evidence for this effect. While dictators with more heterogeneous contacts increase their donations to all types of recipients, the donations to higher-class recipients increase more sharply, which implies a lower amount of in-group bias. This finding corroborates hypothesis 8.

Table 6 provides further evidence regarding hypothesis 8. Models 11 and 12 take only donations by dictators from the lower or middle class into account. Models 13 and 14 recur only on decisions by low- or middle-status dictators. In all of these models, donations are regressed on a dummy indicating whether the recipient is from the high class, contact heterogeneity in its continuous or dichotomized version, an interaction effect between class of the recipient and heterogeneity, and our control variables. The coefficient of higher-class recipient provides a measure for the observed in-group bias among participants with average contact heterogeneity (models 11 and 13) or participants with low heterogeneity among their contacts (models 12 and 14). Notably, we find a descriptively positive interaction effect between higher-class recipient and heterogeneity in all four models. This indicates that low- and middle-class/status dictators show a smaller amount of in-group bias if they have more heterogeneous contacts. While this interaction effect fails significance, if we use the continuous version of contact heterogeneity (model 11: $p > .17$; model 13: $p > .14$), it reaches significance at the 10 percent level if we work with the dichotomized version (model 12: $p < .07$; model 14: $p < .07$). Since the effect sizes are not too small either—for instance, on average, higher-class recipients receive $1.21$ (0.44 + 0.77) more from low-/middle-class dictators with high heterogeneity than from low-/middle-class dictators with low heterogeneity (model 12)—we interpret these findings as positive evidence for hypothesis 8.

Figure 6. Contact heterogeneity moderates in-group bias.
Discussion and Conclusions

The present study demonstrates that class has a positive effect on one important form of prosocial behavior, that is, altruistic giving. In addition, we find that these class-based differences in altruistic giving are to a considerable extent due to differences in two mediating variables. Higher-class actors live under conditions of little financial stress and hence are more inclined to donate to others than are lower-class actors. In addition, the higher her class, the more the actor tends toward more diversified social contacts and hence toward more altruistic giving. In contrast, the observed positive effect of class on altruistic giving cannot be explained by differences in empathy.

These results support previous work, for example, by Liebe and Tutić (2010, 2017) and Körndörfer et al. (2015), who found a positive effect of class on altruistic giving and are in stark contrast to the findings by, for example, Piff et al. (2010) and Auten et al. (2002), which point to a negative effect of class on giving behavior. While the present study has considerable advantages over previous contributions in that we work with a fairly large sample and, at the same time, incentivize measures of altruistic giving, our approach has some notable shortcomings, two of which seem especially important.

First, we used rather parsimonious measures for key concepts such as empathy and contact heterogeneity. Future research should check whether the results of our mediation analyses hold up when more involved measures are used. A similar point of criticism applies to our dependent variable: While we do provide consistent evidence on one distinct form of prosocial behavior—donations in the simple dictator game—it remains an open question for future research of whether our findings can be replicated with other measures of prosocial behavior such as contributions in public good games or honoring trust in trust games. Furthermore, in our study we

Table 5. In-Group Bias among Low(er)-/Middle-Class/Status Dictators.

| Recipient        | Lower/Middle Class | Higher Class |
|------------------|--------------------|--------------|
|                  | Low/Middle Status  | High Status  |
| Lower/middle class | 3.91 (2.67)        | 4.52 (2.86)  |
|                  | 4.01 (2.66)        | 4.25 (2.86)  |
| Higher class     | 2.72 (2.53)        | 2.57 (2.42)  |
|                  | 2.36 (2.43)        | 3.02 (2.52)  |

Table 6. Multivariate Analyses of Donations with Interaction Effects.

| Variable                          | Model 11 | Model 12 | Model 13 | Model 14 |
|-----------------------------------|----------|----------|----------|----------|
| Higher-class recipient            | -1.18*** | -1.61*** | -1.62*** | -2.12*** |
|                                   | (0.21)   | (0.30)   | (0.24)   | (0.09)   |
| Contact heterogeneity             | 0.36**   | 0.34**   |          |          |
|                                   | (0.12)   | (0.13)   |          |          |
| Interaction effect: Higher-Class  | 0.28     | 0.33     |          |          |
| Recipient × Contact Heterogeneity | (0.21)   |          |          |          |
| High heterogeneity                | 0.44†    |          | 0.31     |          |
|                                   | (0.25)   |          | (0.28)   |          |
| Interaction effect: Higher-Class  | 0.77†    |          | 0.87†    |          |
| Recipient × Contact Heterogeneity | (0.43)   |          | (0.47)   |          |
| Male                              | -0.09    | -0.02    | -0.16    | -0.13    |
|                                   | (0.20)   | (0.20)   | (0.22)   | (0.23)   |
| Age                               | -0.00    | -0.00    | -0.00    | -0.00    |
|                                   | (0.01)   | (0.01)   | (0.01)   | (0.01)   |
| Caucasian                         | 0.11     | 0.09     | -0.12    | -0.14    |
|                                   | (0.27)   | (0.28)   | (0.29)   | (0.30)   |
| Religiosity                       | 0.49*    | 0.54**   | 0.29     | 0.35     |
|                                   | (0.21)   | (0.21)   | (0.23)   | (0.23)   |
| Constant                          | 3.73**   | 3.41***  | 4.32***  | 4.15***  |
|                                   | (0.42)   | (0.43)   | (0.46)   | (0.48)   |
| $R^2$                             | .088     | .077     | .123     | .108     |
| $N$                               | 668      | 668      | 546      | 546      |

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$. 
varied the social class of the recipient and surveyed the subjective class of the dictator before decisions were made in the dictator game. Both aspects could affect decision-making processes, for example, by activating social class concerns. On the other hand, receiving information about the social class/status of recipients is closer to everyday decision-making contexts compared to donation decisions without any background information. This increases to some extent the ecological validity of our study, and the negative effect of the status of the recipient is also found in other experimental studies (e.g., Bader and Keuschnigg 2020). However, future studies should replicate our findings without manipulating the status of the recipient as well as surveying the dictator’s subjective status before the decision task. Also, studies are needed that investigate the relationship between social class and prosociality regarding the allocation of nonmonetary resources such as time, voluntary work, and helping behavior in everyday life as well as nonethic behavior such as tax evasion and lying behavior. In our experimental tasks embedded in a survey, windfall gains (Cherry, Frykblom, and Shogren 2002) and stake sizes (Diekmann 2004) might affect status effects in the dictator game, and this should be investigated in future research. While survey-based and laboratory experiments have the advantage that researchers can control the experimental stimuli and make use of full randomization, field experiments and studies in field settings are an important complement to shed further light on the external validity of existing research.

The second major shortcoming of our study refers to our theoretical argument regarding the effect of contact heterogeneity. Recall that we derived our corresponding hypotheses from Collins’s theory of interaction rituals and class cultures. While we believe that our theoretical reasoning is defensible, clearly this approach and more generally the literature on class and status suggest many more intriguing hypotheses regarding the effect of class on prosocial behavior, which we could not test with our data. For instance, Collins’s theory implies that prosocial behavior should vary with the intensity and sheer amount of interaction rituals in which an actor is involved. Also, Collins differentiates between symmetrical and asymmetrical rituals, the latter of which has the potential for abuse of power and, as a consequence, a reduction in solidarity among the participants. We believe that future research on the effects of social class on prosocial behavior can only profit from a more nuanced and differentiated attempt to include key concepts and mechanisms from the theory of interaction rituals in the empirical analyses. Notwithstanding these shortcomings, the present study is a step forward in uncovering the mechanisms that explain the relationship between social class and prosocial behavior. It is evident that many more studies, carried out in different social and cultural contexts, are necessary to test the mechanisms proposed here as well as further ones in order to solve the puzzle of social class difference in prosociality.

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